



Prospectus  
2010

# BRAC UNIVERSITY



**postgraduate  
programs**





# Prospectus 2010



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## Vice Chancellor's Message

Welcome to BRAC University! Selecting a university and the major field(s) of study are among the most important decisions that you will ever have to make. As you browse through this prospectus I hope it will assist you making a choice.

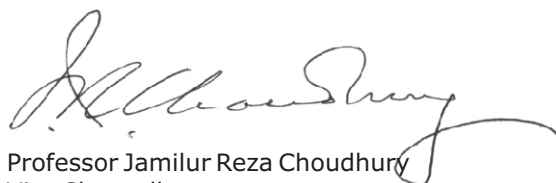
Since its inception in April 2001, BRACU has attained a reputation for providing quality education in different disciplines. You will find an extensive selection of courses, a helpful environment and committed teachers and staff. Through continuous improvements in our curricula and developments in our learning facilities and resources we try to ensure that you receive the best education and experience a memorable university life.

The underlying philosophy of BRAC University is to develop ethical graduates, who will grow as individuals, gaining in self-confidence and developing a sense of leadership. Through a vibrant and rewarding campus life with diversity of co-curricular and extra-curricular activities, we try to make BRACU a truly learning community.

We are committed to your success and we put your personal and academic development as our number one priority. BRACU is the only private university in the country to provide a residential semester. Through different courses offered and co-curricular programs organized during the residential semester in the relatively quiet environment away from the city, we aim to develop self-confidence, adaptability, team work and enhanced communication skills in students.

The strength of BRACU breeds from the unique strengths and contributions of our faculty and staff and our distinctive pedagogical approach that culminates in all-rounded students ready for this dynamic society and the ever changing job market.

I hope you will make the best use of our educational facilities.



Professor Jamilur Reza Choudhury  
Vice Chancellor



BRAC UNIVERSITY

boochi

Intra University Football Tournament

BOOCHICHI



## GENERAL INFORMATION

### About BRAC University

BRAC University was established by BRAC in 2001. From a modest beginning in 1972, BRAC has grown into one of the largest non-government development organizations in the world. It works in a number of closely related areas such as poverty alleviation, rural health care and non-formal education among many others to bring about socio-economic changes for a large number of our people, mostly women and children, whose lives are dominated by extreme poverty, illiteracy, disease and malnutrition. BRAC continually revisits its approaches to ensure its effectiveness as a catalyst for change. BRAC recognizes that development strategies, information technology and effective management can play significant roles in modernizing Bangladesh and in securing meaningful jobs for the Bangladeshi workforce at home and abroad.

In line with BRAC's continued support to education as a force of change and development, BRAC University has been established to provide a high quality of education to meet the demands of the modern age. BRAC University is 'not for profit' institution accredited by the University Grants Commission (UGC) and approved by the Ministry of Education, Government of Bangladesh.

### Mission

The mission of the BRAC University is to foster the national development process through the creation of a centre of excellence in higher education that is responsive to society's needs, and able to develop creative leaders and actively contributes to learning and creation of knowledge.

### Goal

The goal of the university is to provide an excellent broad based education with a focus on professional development for students, in order to equip them with the knowledge and skill necessary for leading the country in its quest for development. Along with this, the university provides an environment for faculty development in order to ensure a dynamic teaching environment. Faculty will be provided with an environment in which they can further their teaching skills and contribute to the creation of new knowledge by developing and using their research skills.

### Scope

At present, the university offers following undergraduate degrees:

Bachelor of Architecture (B. ARCH), Bachelor of Business Administration (BBA), Bachelor of Science (BS) in Computer Science and Engineering (CSE), Bachelor of Science (BS) in Computer Science (CS), Bachelor of Science (BS) in Electronics & Communication Engineering (ECE), Bachelor of Science (BS) in Electrical and Electronic Engineering (EEE), Bachelor of Science (BS) in Physics, Bachelor of Science in Applied Physics and Electronics, Bachelor of Science in Mathematics, Bachelor of Laws (LL.B Hons), Bachelor of Social Science (BSS) in Economics and Bachelor of Arts (BA) in English.

The University offers following postgraduate degrees:

Master of Science (M.Sc) / Master of Engineering (M.Engg.) in Electrical and Electronic Engineering, Master of Business Administration (MBA), Executive MBA (EMBA), Master of Development Studies (MDS), Master of Bank Management (MBM), Master of Science in Biotechnology, Master of Disaster Management (MDM), Master of Arts (MA) in English, Master of Science in Applied Economics (MSAE), Master of Arts in Governance and Development (MAGD), Master of Public Health (MPH), Master of Education (MEd) and Master's in Early Childhood Development (MECD).

BRAC University also offers Postgraduate Diplomas in Disaster Management, Development Studies and Certificate courses in Disaster Management, ICT and Development, Social Communication, CISCO Certified Network Associate (CCNA), English Proficiency and Development, and IELTS (Preparatory)

As the university grows and as its institutional capacity is built up, the University will offer programs in a large number of disciplines. BRAC University will provide instruction and confer degrees in all branches of Arts, Social Science and Science including Medicine, Engineering, Architecture, Agriculture, etc. Degrees will be granted at the undergraduate, graduate and postgraduate (doctoral) levels. In addition, the University will offer Diploma programs on professional courses.

### **Organizational Structure**

The Honorable President of the People's Republic of Bangladesh is the Chancellor of BRAC University. The Governing Board is the highest policy making body of BRAC University and is responsible for ensuring the highest level of educational and administrative standard at BRAC University. A number of committees assist the Board in matters essential to the smooth functioning of the University. The committees are: Academic Council, Course Committee, Finance Committee, Selection Committee, Audit Committee, Committee on Student Affairs, Disciplinary Committee, Committee on University Development and Committee on Medical Facilities. The Vice Chancellor (VC) is the Chief Executive and Academic Officer of the University. He is assisted by the Pro-Vice Chancellor in all relevant matters. The academic wing of the University consists of Deans of Faculties/Schools, Chairpersons of the Departments and Faculty Members. The Director of Student Affairs co-ordinates and supports all extra-curricular activities. The Librarian who is assisted by a Deputy Librarian and Assistant Librarians head the University library. The Registrar with Deputy Registrar, Assistant Registrar and Officers are responsible for day-to-day administration, human resource management, technological services and records.

## GOVERNANCE

*Chancellor*

**Mr. Md. Zillur Rahman**

Hon'ble President, People's Republic of Bangladesh

*Vice Chancellor*

**Professor Jamilur Reza Choudhury**

*Treasurer*

**Mr. Sukhendra Kumar Sarkar**

*Pro-Vice Chancellor*

**Professor Md. Golam Samdani Fakir**

*Registrar (a.i.)*

**Mr. Sukhendra Kumar Sarkar**

### Governing Board

The Governing Board is the highest policy making body of BRACU. It is responsible for ensuring that the highest level of educational and administrative standards are set and maintained at BRACU. The current Governing Board consists of the following eminent personalities of Bangladesh:

*President*

**Mr. Fazle Hasan Abed**

Founder & Chairperson, BRAC

**Advocate Sultana Kamal**

Executive Director

Ain O Salish Kendro (ASK)

*Members*

**Professor Jamilur Reza Choudhury**

Vice Chancellor

BRAC University

**Professor Dilara Chowdhury**

Department of Government and Politics

Jahangir Nagar University

**Professor Md. Golam Samdani Fakir**

Pro-Vice Chancellor

BRAC University

**Mr. Abdul-Muyeed Chowdhury**

Chairman

BRAC Net

**Mr. Faruq Ahmed Choudhury**

Former Foreign Secretary

Ministry of Foreign Affairs

**Mr. Sukhendra Kumar Sarkar**

Treasurer

BRAC University

**Professor Anisuzzaman**

Professor Emeritus

Dhaka University

**Dr. Mahabub Hossain**

Executive Director

BRAC

**Professor Ainun Nishat**

Country Representative, International Union  
for Conservation of Nature (IUCN)

*Member Secretary*

**Mr. Sukhendra Kumar Sarkar**

Registrar (a.i.)

BRAC University

## Academic Council

The Academic Council recommends the educational policies of the university and determines the curricula and courses that can help achieve high educational standards. The council is currently composed of the following academics and professionals:

### *Chairperson*

**Professor Jamilur Reza Choudhury**  
Vice Chancellor  
BRAC University

### *Members*

**Professor Md. Golam Samdani Fakir**  
Pro-Vice Chancellor  
BRAC University

**Professor Iqbal Mahmud**  
Former Vice Chancellor, BUET

**Professor Ainun Nishat**  
Country Representative  
International Union for Conservation of  
Nature (IUCN)

**Mr. Khalid Shams**  
"REEMA", 10 Eskaton Garden Road  
Ramna, Dhaka-1000

**Mr. Mamun Rashid**  
CEO, Citi Bank, NA

**Mr. Mahbub Jamil**  
Chairman & Managing Director  
Singer Bangladesh Ltd.

**Mr. Emad-Ul-Ameen**  
Director, Human Resource  
GrameenPhone Ltd.

**Dr. Perween Hasan**  
Professor of Islamic History and Culture  
Dhaka University

**Professor Zarina Rahman Khan**  
Department of Public Administration  
Dhaka University

**Professor Fuad Hassan Mallick**  
Chairperson  
Department of Architecture  
BRAC University

**Professor Sayeed Salam**  
Chairperson, Electrical & Electronic  
Engineering, BRAC University

**Professor Mumit Khan**  
Chairperson, Computer Science &  
Engineering, BRAC University

**Professor Firdous Azim**  
Chairperson, English & Humanities  
BRAC University

**Dr. Anwarul Hoque**  
Chairperson, Economics & Social Sciences  
BRAC University

**Professor A. A. Ziauddin Ahmad**  
Chairperson  
Mathematics and Natural Sciences  
BRAC University

**Dr. Sanaul Mostafa**  
Director, BRAC Business School  
BRAC University

**Dr. Shahdeen Malik**  
Director, School of Law  
BRAC University

**Mr. Kh. Shamsuddin Mahmood**  
Head, Undergraduate Program  
School of Law, BRAC University

**Professor Anwar Islam**  
Director, James P. Grant School of Public  
Health, BRAC University

**Professor Syed M Hashemi**  
Director, BRAC Development Institute  
BRAC University

**Ms. Erum Mariam**  
Director, Institute of Educational  
Development, BRAC University

**Barrister Manzoor Hasan**  
Director  
Institute of Governance Studies  
BRAC University

**Ms. Syeda Sarwat Abed**  
Director, Centre for Language  
BRAC University

### *Member Secretary*

**Mr. Sukhendra Kumar Sarkar**  
Registrar (a.i)  
BRAC University

## Administration and Management

Professor Jamilur Reza Choudhury  
Professor Md. Golam Samdani Fakir  
Mr. Sukhendra Kumar Sarkar

*Vice Chancellor  
Pro-Vice Chancellor  
Treasurer & Registrar (a.i)*

### **Vice Chancellor's Office**

Mr. Obaidullah Al Zakir  
Ms. Rofequnnesa Amin

*Assistant Director, PRELO  
Secretary to the VC*

### **Office of the Registrar**

Mr. Sukhendra Kumar Sarkar  
Ms. Iris Pervin  
Mr. Md. Arifuzzaman  
Ms. Nazmus Sabeka  
Ms. Shadia Alam  
Mr. Mohammad Shamim Azad

*Registrar (a.i)  
Assistant Registrar  
Senior Registration and Program Officer  
Assistant Registrar, Examination & Transcript  
Examination & Transcript Officer  
Admission and Registration Officer*

### **Students Affairs**

Professor Zainab F. Ali  
Mr. Mohammad Jahangir Alam  
Mr. Md. Kamruzzaman

*Director  
Assistant Director  
Student Affairs Officer*

### **Accounts Office**

Mr. Monojit Kumar Ojha  
Mr. Amdadul Islam  
Mr. Azharul Islam Bhuiyan  
Mr. Sumon Chandra Das  
Mr. Md. Golam Kibria  
Ms. Nusrat Zahan  
Mr. Md. Humayun Bashar  
Mr. Mohammad Khorshed Alam

*Head of Accounts  
Senior Accounts Officer  
Senior Accounts Officer  
Accounts Officer  
Accounts Officer  
Junior Accounts Officer  
Accounts Officer  
Accounts Officer*

### **Relationship Management Office**

Ms. Shamsun Nahar Rahman  
Mr. Saiduzzaman Shikder  
Ms. Zinia Khanam

*Assistant Director  
Student Counselor  
Junior Student Counselor*

### **Human Resources Office**

Ms. Rosy Sharif  
Ms. Momena Begum  
Ms. Tanvia Ifrat

*Senior Human Resource Officer  
Human Resource Officer  
Human Resource Assistant*

### **Career Services Office**

Ms. Sabrina Shahidullah  
Mr. Ziaul Haq  
Mr. Md. Shorab Hossain

*In-charge  
Career Services Officer  
Assistant Administrative Officer*

### **IT Systems Office**

Mr. Mohammad Hossain  
Ms. Fahima Khanam  
Mr. Mohammad Rezaul Islam  
Mr. Aminul Islam  
Mr. Md. Sadat Mursalin Chowdhury  
Mr. Md. Al-Mahmud  
Mr. Aurongojeb

*Senior System Administrator  
Senior System Administrator  
System Administrator  
System Administrator  
Assistant System Administrator  
Assistant System Administrator  
Network Support Engineer*

**Administration Office**

Mr. Md. Nurul Islam  
Mr. Md. Shahidul Islam  
Mr. Sk. Tareq Hossain  
Mr. Md. Akterujjaman  
Mr. Muhammad Shahjahan  
Ms. Israt Sultana

*Senior Administrative Officer  
Administrative Officer  
Maintenance/Administrative Officer  
Administrative Officer  
Campus Supervisor  
Telephone Operator*

**Procurement Office**

Mr. Abdul Moghni Chowdhury  
Mr. Md. Mahbub Alam  
Mr. Mahabub-Bin-Zaman

*Procurement Manager  
Procurement Officer  
Procurement & Administrative Officer*

**Medical Center**

Dr. Afroza Jesmin  
Ms. Alo Clara Gomes

*Medical Officer  
Resident Nurse (Savar)*

**Students Counseling Office**

Ms. Mahbuba Naznin Sani

*Counselor*

**Savar Campus**

Mr. Md. Mahfuzul Bari Chowdhury  
Mr. Biplab Kumar Halder  
Mr. Ahammad Ullah  
Ms. Anjuman Ara  
Mr. Faruk Hossain  
Ms. Umme Salma Akhtar  
Ms. Robaet Nusrat Jahan  
Mr. Rehan Ahmed  
Mr. Md. Saddam Hossain  
Mr. Halal Rabbani  
Mr. Jasim Uddin Bhuiyan  
Mr. Kamal Pasha  
Mr. Bikash Kumar Biswas  
Mr. Md. Moniruzzaman

*Campus Superintendent  
Lecturer cum House Tutor  
Lecturer cum House Tutor  
Counselor  
Admin Officer (Coordination-RS)  
House Tutor  
House Tutor  
Dorm Supervisor  
Lab Technical Officer  
Assistant Librarian  
House Tutor  
House Tutor  
House Tutor  
Lab Technical Officer*

**Ayesha Abed Library**

Ms. Hasina Afroz  
Ms. Syeda Nasima Begum  
Mr. Kh. Ali Murtoza  
Mr. Md. Ahmad Parvez  
Mr. Asim Dio  
Ms. Sajia Sultana

*Deputy Librarian (Head of Library)  
Senior Assistant Librarian  
Senior Assistant Librarian  
Assistant Librarian  
Junior Assistant Librarian  
Junior Assistant Librarian*

## Schools, Departments, Institutes & Centre

### **BRAC BUSINESS SCHOOL**

Dr. Sanaul Mostafa  
 Professor Dr. Mojib U. Ahmed  
 Mr. Mahmudul Haq  
 Mr. Zahidul Alam Khandaker  
 Mr. Shawkat Kamal  
 Ms. Afsana Akhter  
 Mr. Suntu Kumar Ghosh  
 Mr. Md. Zakir Hossain Sharkar  
 Mr. Anup Chowdhury  
 Mr. Mohammad Khaleq Newaz  
 Mr. Suman Paul Chowdhury  
 Ms. Syeda Rownak Afza  
 Mr. Shamim Ehsanul Haque  
 Mr. Probal Dutta  
 Ms. Syeda Shaharbanu Ahmed  
 Ms. Shireen Abedin  
 Ms. Somaiya Yunus  
 Ms Sharmin S. Rahman  
 Ms. Farhana Nur Malik  
 Ms. Kohinur Akter  
 Mr. Dewan Mostafizur Rahman  
 Mr. Mostak Ahmed  
 Mr. Jabed Rasel  
 Mr. Satyajit Modak

*Director*  
*Director, MBA Program*  
*Assistant Professor*  
*Assistant Professor*  
*Senior Lecturer*  
*Senior Lecturer*  
*Senior Lecturer*  
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*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Department Coordination Officer*  
*Department Coordination Officer*  
*Department Coordination Officer*

### **SCHOOL OF ENGINEERING AND COMPUTER SCIENCE**

#### **Department of Computer Science and Engineering**

Professor Dr. Mumit Khan  
 Dr. Md. Khalilur Rhaman  
 Dr. Al-Sakib Khan Pathan  
 Ms. Sadia Kazi  
 Mr. Matin Saad Abdullah  
 Ms. Bushra Tawfiq Chowdhury  
 Mr. Abdussamad Ahmed Muntahi  
 Mr. Sarwar Alam  
 Mr. Imran Ahmed  
 Ms. Afroza Sultana  
 Mr. Farazul H. Bhuiyan  
 Mr. Ahmedul Kabir  
 Mr. Md. Omar Faruque  
 Mr. Annajiat Alim Rasel  
 Ms. Effat Jahan Mila

*Chairperson*  
*Assistant Professor*  
*Assistant Professor*  
*Senior Lecturer*  
*Senior Lecturer*  
*Senior Lecturer*  
*Lecturer*  
*Lecturer*  
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*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Junior Lecturer*  
*Department Coordination Officer*

#### **Department of Electrical & Electronic Engineering**

Professor Dr. Md. Sayeed Salam  
 Dr. AKM Abdul Malek Azad  
 Ms. Amina Hasan Abedin  
 Mr. Tarem Ozair Ahmed  
 Ms. Marzia Alam  
 Mr. Nazmus Saquib  
 Ms. Rumana Rahman  
 Mr. Apurba Saha  
 Mr. Supriya Shafkat Ahmed  
 Mr. Mehedi Zahid Sadi

*Chairperson*  
*Associate Professor*  
*Senior Lecturer*  
*Senior Lecturer*  
*Lecturer*  
*Lecturer*  
*Junior Lecturer*  
*Junior Lecturer*  
*Junior Lecturer*  
*Lecturer*

Mr. Radwanul Hasan Siddique  
Ms. Fariah Mahzabeen  
Ms. Effat Jahan Mila

*Lecturer  
Junior Lecturer  
Department Coordination Officer*

### **SCHOOL OF LAW**

Dr. Shahdeen Malik  
Mr. K. Shamsuddin Mahmood  
Dr. Saira R Khan  
Ms. Tureen Afroz  
Mr. Mahmudul Karim  
Ms. Christine Richardson  
Ms. Romin Tamanna  
Ms. Munira Jahan Sumi  
Mr. Rayhanul Haque

*Director  
Head, Undergraduate Program  
Assistant Professor  
Assistant Professor  
Lecturer-II  
Visiting Faculty  
Junior Lecturer  
Teaching Assistant  
Department Coordination Officer*

### **SCHOOL OF PUBLIC HEALTH**

Dr. Alejandro Cravioto  
Dr. Anwar Islam  
Dr. Shahaduz Zaman  
Dr. Sabina F Rashid  
Mr. Shafiun Nahin Shimul  
Ms. Nasima Selim  
Dr. Farah Mahjabeen  
Dr. Golam Enamul Hasib Chowdhury  
Mr. Tapan Biswas  
Dr. Dina Siddiqi  
Mr. Steve Luby  
Dr. Tahmeed Ahmed  
Dr. Shams El- Arefeen  
Mr. Tracey Koehlmoos  
Mr. Mizanur Rahman  
Mr. Aftab Uddin  
Dr. Abbas Bhuiyan  
Mr. Mrityunjy Das

*Acting Dean  
Director  
Associate Professor  
Associate Professor  
Lecturer  
Lecturer  
Lecturer  
Research Associate  
Program Officer, IT  
Visiting Faculty  
Adjunct Professor  
Adjunct Professor  
Adjunct Professor  
Adjunct Professor  
Adjunct Lecturer  
Adjunct Faculty  
Adjunct Professor  
Academic & Administrative Officer*

### **DEPARTMENTS**

#### **Department of Architecture**

Professor Dr. Fuad Hassan Mallick  
Professor Dr. Zainab F. Ali  
Ms. Sheikh Rubaiya Sultana  
Ms. Huraera Jabeen  
Mr. Khondaker Hasibul Kabir  
Mr. Sajid-bin-Doza  
Mr. Abu Muhammad Rahat Mujib Niaz  
Mr. Muhammad Nafisur Rahman  
Mr. Md. Shajjad Hossain  
Mr. Md. Shafiqul Alam  
Mr. Shams Mansoor Ghani  
Dr. S. I. Khan  
Mr. Md. Aminur Rahman  
Ms. Tahmina Rahman  
Ms. Tanjina Khan  
Ms. Rabeya Rahman  
Mr. Samiur Rahman Tushar  
Mr. Md. Lutfur Rahman

*Chairperson  
Director, Student Affairs  
Senior Lecturer  
Senior Lecturer  
Senior Lecturer  
Senior Lecturer  
Lecturer  
Lecturer  
Lecturer-II  
Lecturer  
Visiting Faculty  
Lecturer  
Research Assistant  
Teaching Assistant  
Teaching Assistant  
Teaching Assistant  
Department Coordination Officer*



### **Postgraduate Programs in Disaster Management**

Professor Dr. Fuad Hassan Mallick  
 Dr. S. I. Khan  
 Mr. Mohammad Aminur Rahman  
 Ms. Tahmina Rahman

*Director*  
*Visiting Faculty*  
*Lecturer*  
*Research Assistant*

### **Department of English and Humanities**

Professor Dr. Firdous Azim  
 Professor Dr. Syed Manzoorul Islam  
 Ms. Rukhsana Rahim Chowdhury  
 Mr. Mohammad Mahmudul Haque  
 Ms. Asifa Sultana  
 Ms. Roohi Huda  
 Ms. Tamanna Mostafa  
 Ms. Shenin Ziauddin  
 Ms. Sanam Amin  
 Ms. Rubana Ahmed  
 Mr. Md. Nazmul Hossain Bhuiyan

*Chairperson*  
*Visiting Faculty*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Teaching Assistant*  
*Teaching Assistant*  
*Department Coordination Officer*

### **Department of Economics and Social Sciences**

Professor Dr. Anwarul Hoque  
 Dr. Manjur Karim  
 Dr. Mohammad Alauddin  
 Dr. Minhaj Uddin Mahmud  
 Dr. Wasiqur Rahman Khan  
 Dr. Shahidur Rahman  
 Dr. Farzana Munshi  
 Mr. Mohammad Jahangir Alam  
 Mr. Md. Abdul Wohab  
 Ms. Mahbuba Naznin Sani  
 Mr. Naim Uddin H. A. Chowdhury  
 Ms. Fahmida Saadia Rahman  
 Mr. Iftekharul Haque  
 Ms. Takrima Sayeda  
 Ms. Meheri Tamanna  
 Mr. Haydory Akbar Ahmed  
 Ms. Nirvana Mujtaba  
 Ms. Sarah Salahuddin  
 Ms. Lutfun Nahar Lata  
 Mr. Fahim Subhan Chowdhury  
 Mr. Theophil Nokrek

*Chairperson*  
*Associate Professor*  
*Visiting Professor*  
*Associate Professor*  
*Assistant Professor*  
*Assistant Professor*  
*Senior Lecturer*  
*Senior Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Research Associate*  
*Department Coordination Officer*

### **Department of Mathematics and Natural Sciences**

Professor Dr. A. A. Ziauddin Ahmad  
 Professor Dr. Naiyyum Choudhury  
 Professor Dr. Mofiz Uddin Ahmed  
 Dr. Mezbahur Rahman  
 Dr. Aparna Islam  
 Dr. Mohammad Rafiqul Islam  
 Ms. Sharmina Hussain  
 Mr. Md. Jakir Hossen  
 Mr. Iftekhar Md. Shafiqul Kalam  
 Ms. Moushumi Zahur  
 Ms. Fardousi Ara Begum  
 Mr. Mahabobe Shobahani  
 Ms. Hasibun Naher  
 Ms. Sanjida Aktar  
 Mr. Al Amin Kabir

*Chairperson*  
*Coordinator, Biotechnology*  
*Visiting Faculty*  
*Visiting Faculty*  
*Assistant Professor*  
*Assistant Professor*  
*Assistant Professor*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
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*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*

Ms. Lopamudra Chakravarty  
 Mr. Kh. Md. Mahmudul Hasan  
 Mr. Muhammad Lutfur Rahman  
 Mr. Md. Ashraful Islam Bhuiyan  
 Ms. Adiba Raihan  
 Mr. Shahin Shaikh

*Lecturer*  
*Lecturer*  
*Teaching Assistant*  
*Teaching Assistant*  
*Teaching Assistant*  
*Department Coordination Officer*

## **INSTITUTES**

### **BRAC Development Institute**

Professor Dr. Syed M Hashemi  
 Dr. Ferdous Jahan  
 Mr. Khondoker Shakhawat Ali  
 Mr. Afzal Aftab  
 Ms. Samia Haq  
 Ms. Syeda Jaferi Hussain  
 Ms. Sadeka Banu

*Director*  
*Academic Coordinator*  
*Communications Coordinator*  
*IT Officer*  
*Senior Research Associate*  
*Communication Associate*  
*Department Coordination Officer*

### **Institute of Educational Development**

Dr. Erum Mariam  
 Dr. Manzoor Ahmed  
 Ms. Kaniz Fatema  
 Dr. Sudhir Chandra Sarker  
 Ms. Mary Monica Gomes  
 Mr. Mohammad Zia-Us-Sabur  
 Ms. Trishna Sagar  
 Ms. Laila Farhana Apnan Banu  
 Mr. Kazi Sameeo Sheesh  
 Ms. Dilruba Sultana  
 Ms. Rino Wiseman Adhikary  
 Ms. Sumera Ahsan  
 Ms. Fahmida Naznin  
 Ms. Mahmuda Akhter  
 Dr. Nishat Fatima Rahman  
 Mr. Md. Altaf Hossai  
 Ms. Shaheen Akter  
 Mr. Vibekananda Howlader  
 Mr. Md. Kabir Tafiqul Islam  
 Mr. Jamil Ahmed  
 Ms. Ratna Guha  
 Ms. Basabi Maksud  
 Mr. Spencer Tapu Mitra  
 Ms. Foujia Nahid  
 Mr. Dipankar Kumar Chowdhury

*Director*  
*Senior Adviser*  
*Education Adviser*  
*Programme Coordinator*  
*Senior Faculty*  
*Senior Research Associate*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Lecturer*  
*Education Specialist*  
*Head of ECDRC*  
*Senior Education Specialist*  
*Research Fellow-I*  
*Senior Research Associate*  
*Senior M.D. Specialist*  
*Senior Manager*  
*Head of Programs*  
*Field Facilitator*  
*Senior Sector Specialist*  
*Senior Accounts Officer*  
*Librarian*  
*IT Support Officer*

### **Institute of Governance Studies**

Barrister Manzoor Hasan  
 Dr. Rizwan Khair  
 Professor Dr. M. Emdadul Haq  
 Mr. Mohammad Sirajul Islam  
 Mr. Mohammad Kamrul Hasan Bhuiyan  
 Mr. Md. Khorshed Alam  
 Ms. Farhana Ahmad  
 Mr. Mohammad Jahirul Quayum  
 Mr. Jamil Ahmed

*Director*  
*Academic Coordinator*  
*Professor*  
*Research Assistant*  
*Manager (Accounts & Finance)*  
*Assistant, DCO, Savar*  
*Senior Project manager*  
*Senior Program Manager*  
*Head of Programs*

**CENTRE FOR LANGUAGES**

Ms. Syeda Sarwat Abed	<i>Director</i>
Mr. Ivan Shafaat Bari	<i>Coordinator</i>
Ms. Shaheen Ara	<i>Lecturer</i>
Ms. Jesmine Zaker	<i>Lecturer</i>
Ms. Mahmuda Yasmin Shaila	<i>Lecturer</i>
Ms. Effat Hyder	<i>Lecturer</i>
Ms. Samina Nasrin Chowdhury	<i>Lecturer</i>
Mr. Sheikh Fazle Shams	<i>Academic Coordinator and Lecturer</i>
Ms. Liza Reshmin	<i>Lecturer</i>
Mr. Md. Golam Jamil	<i>Lecturer</i>
Mr. AQM Khairul Basher	<i>Lecturer</i>
Mr. Sanjoy Banerjee	<i>Lecturer</i>
Ms. Farrah Jabeen	<i>Lecturer</i>
Ms. Moutushi Khandaker	<i>Lecturer</i>
Ms. Tahreen Ahmed	<i>Lecturer</i>
Mr. Mohammad Aminul Islam	<i>Lecturer</i>
Ms. Sadia Nasrin	<i>Lecturer</i>
Ms Nipa Nasrin	<i>Lecturer</i>
Mr. Ahmed Salehin Kaderi	<i>Lecturer</i>
Mr. Md. Rejaul Karim	<i>Lecturer</i>
Ms. Sadra N. Siddiky	<i>Lecturer</i>
Mr. S. M. Anwaruddin	<i>Lecturer</i>
Ms. Sunida Witayakarn	<i>Lecturer</i>
Mr. Khurum Malik	<i>Lecturer</i>
Ms. Tahmina Anwar	<i>Junior Lecturer</i>
Ms. Bidisha Zaman	<i>Junior Lecturer</i>
Ms. Samia Zerín	<i>Junior Lecturer</i>
Mr. Kazi Sarmad Karim	<i>Junior Lecturer</i>
Ms. Suma Saha	<i>Teacher</i>
Mr. Abdullah Arif Muhammad	<i>Teacher</i>
Ms. Tamanna Maqsood	<i>Teacher</i>
Ms. Farzana Ahmed	<i>Part Time Language Faculty</i>
Ms. Elena Bass	<i>Part Time Language Faculty</i>
Mr. Sultan Ahmed	<i>Part Time Language Faculty</i>
Mr. Rafique-Um-Munir Chowdhury	<i>Part Time Language Faculty</i>
Ms. Lisa Ponzetti	<i>English Language Fellow</i>
Ms. Sharlene Nisha Alam	<i>Faculty</i>
Mr. Pankaj Paul	<i>Teaching Assistant</i>
Ms. Rubaiyat Jabeen	<i>Teaching Assistant</i>
Ms. Reeham Chowdhury	<i>Teaching Assistant</i>
Ms. Nurunnesa Sabera	<i>Department Coordination Officer</i>
Ms. Afruza Begum	<i>Assistant Department Coordination Officer</i>

## Partners in Education

Over the years BRAC University has partnered with the following reputed academic institutions around the world to enhance our own educational experience by learning from others.

### Institute of Governance Studies

- Korea Development Institute School of Public Policy and Management, Seoul, Korea
- Monash University, Australia
- Griffith University, Australia
- University of Manitoba, Canada
- Basel Institute of Governance, Basel University, Switzerland
- George Mason University, USA

### Institute of Educational Development

- George Washington University, Washington, DC, USA
- National University of Educational Planning and Administration, New Delhi
- University of Sussex, UK
- Columbia University, New York, USA
- Aga Khan Foundation, Canada
- Open Society Institute - London
- Victoria University, Canada
- Yale University, USA
- Portland State University, USA
- University of Massachusetts, USA

### James P Grant School of Public Health

- Bloomberg School of Public Health, Johns Hopkins University, USA
- Mailman School of Public Health, Columbia University, USA
- George Washington University, USA
- Harvard School of Public Health, Harvard University, USA
- Heidelberg University, Germany
- International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B)
- Karolin Institute, Sweden
- Kerala Institute, India
- London School of Hygiene and Tropical Medicine, UK
- TATA Institute of Social Sciences (TISS), India
- University of Amsterdam, Netherlands
- University of Aberdeen, UK
- University of Liverpool, UK
- University of Nagasaki, Japan

### BRAC Business School

- Asian Institute of Technology, Bangkok
- Asian Institute of Management, Manila
- University of South Australia
- Bloomsburg University of Pennsylvania, USA

### Department of Architecture

- University of Illinois, Chicago, USA

### **Postgraduate Programs in Disaster Management**

- Northumbria University, UK
- Katmandu University, Nepal
- Kyoto University, Japan
- Asian Disaster Preparedness Center, Thailand
- Asian University Network of Environment and Disaster Management (AUEDM)

### **BRAC Development Institute**

- University of Manchester
- Institute of Development Studies, Sussex University

## Resources, Facilities and Services

### Resources at BRAC University

BRAC University has significant faculty and human resources, physical and financial resources. BRAC University has managed to create an ideal environment for students to acquire knowledge.

### Faculty

BRAC University faculty comprises a unique blend of teachers, researchers and practitioners. The faculty consists of a distinguished body of scholars with proven teaching and research excellence. Many have doctoral degrees from universities abroad. Many are postgraduate degree holders and professionals with varied experience. Visiting faculty members from USA, Canada, UK, Australia and other countries bring diversity and richness in the learning environment.

### Campus

The present campus of BRAC University is located at Mohakhali in Dhaka City. The campus has excellent communication links to all parts of the city as well as outside the city. Different means of transports including taxis, CNG's, rickshaws, and buses are readily available around the campus. Moreover, the campus is situated five minutes away from Mohakhali's primary bus stands.

The main five-storied University Building accommodates a lounge, an information desk, a student counseling office, classrooms, seminar rooms, the Registrar's office, Administrative office, Accounts office, Executive floor, a cafeteria, a student's common room and a semi outdoor sitting plaza (Prangan). BRAC University (BRACU) occupies eighteen floors of University Building (former Aarong House), a twenty-storied building situated adjacent to the five-storied University building. The BRACU library extends over two floors of this structure. BRAC Business School (BBS), Department of Computer Science and Engineering (CSE), Department of Electrical and Electronic Engineering (EEE), Department of English and Humanities (ENH), Centre for Languages (CfL), Department of Mathematics and Natural Sciences (MNS), BRAC Development Institute (BDI), Systems Office and video conferencing, classrooms, computer labs, Biotech and Physics labs and internet facilities for students are also located there. The University also occupies six floors of Civil Engineers Bhaban (CB), a building located a block away from the main University building. These floors house the Departments of Architecture (ARC), Economics and Social Sciences (ESS), Schools of Law (SoL) and James P Grant School of Public Health (JPGSPH). The Institute of Governance Studies (IGS) is located in Gulshan, while the Institute of Educational Development (IED) is in Niketan, Gulshan.

The University plans to shift its activities to the new campus in four to five years. The process of acquiring land in Badda, Gulshan and constructing the permanent building is under process.

### Residential Semester

The Residential Semester (RS) at BRAC University is a unique experience in university education in Bangladesh. All students are required to attend a Residential Semester within the first year of admission, the first semester will be held in Mohakhali Campus and one of the following two semesters will be a Residential Semester in Savar Campus. The two main goals of this short but intensive program are to develop the leadership skills of the students, so that they will be competent, ethical and enlightened leaders relevant to the development of Bangladesh and to improve their communication skills especially, in English. The layout of the semester design is based on a study that was done by a group of educational experts. The compulsory courses for RS include English, Bangladesh Studies and Ethics & Culture. Through various exercise and activities, the students will develop leadership qualities as well as the ability to live and function together as a group.

## Facilities for Learning

### Classrooms

BRAC University has classrooms of various sizes, ranging from regular ones that can hold 30-50 seats, to large ones with a capacity of 80-100 seats. Each classroom is fully air-conditioned and equipped with multimedia projectors, overhead projectors and computers with access to the Internet. Some classrooms have, in addition to these, televisions, VCR and equipments that can be used for teleconferencing. Furthermore, BRAC University has access to facilities at BRAC Centre Inn and BRAC support facilities all over Bangladesh for the use of teachers and students during field visits.

### Computer Labs

Currently there are around ten computer labs at University Building, one at the Civil Engineer's Building, four in the Savar campus, including a SPSS lab that is used exclusively by MPH students, and one in the Institute of Governance Studies (IGS) at Gulshan. These computer labs have a total of 345 computers, of which 80 are in the Savar campus and 26 are in the Rajendrapur campus. These are all latest model personal computers with built-in multi-media connected to IBM Servers by a local area network (LAN). For all lab work, there is one computer for each student. Computers are connected to a host of other peripheral devices such as scanners, printers etc. Suitable UPS/IPS units back up electric power supply to all computers and peripheral devices. All labs have multi-media projectors and portable white boards.

Furthermore, stand-by generators back up other electric equipment. All these facilities are continually being upgraded to keep pace with changing technology. Furthermore, all servers have been upgraded with new configurations, as have the student, staff and faculty main servers.

### Digital Lab

The purpose of establishing a separate digital lab was to enhance students' understanding of microprocessors, circuits and electronics. This lab contains a wide variety of equipment, including analog and digital oscillo-scopes, trainer boards, PLD trainer boards, microprocessors, digital multimeters, digital chips, analog ammeters, analog voltmeter, wattmeters, rheostats, function generators, inductors, capacitors and other such equipment.

### Electronic Systems Laboratory

This laboratory provides support for instruction and research in the areas of basic analog and digital logic design, discrete component testing, fundamental circuit design, microprocessing interfacing, assembly language programming and communication theory. The laboratory is equipped with digital systems development including FPGA/VHDL for advanced course work and thesis research, CAD facilities capable of schematic capture, circuit simulation and fault detection. The lab utilizes various test equipment to include but not limited to oscilloscopes, signal generators, spectrum analyzer, DSO and logic analyzer, multimeters and high-speed data acquisition equipment.

### Telecommunication Laboratory

The telecommunications laboratory, a state-of-the-art facility, is fully equipped with hardware and software to support a multitude of instructional and thesis/ project activities on the broad area of analog communication (e.g., AM and FM) and digital communication, wireless and mobile communications, multimedia communications and network simulation. Lab facilities also include PCM analyzer/ Frame analyzer, PCM performance analyzer and trainer for digital modulation and keying (e.g., Phase Shift Keying (PSK), Frequency Shift Keying (FSK), Amplitude Shift Keying (ASK), Quadrature Phase Shift Keying (QPSK) etc).

### **Signal Processing Laboratory**

This laboratory supports instruction and thesis/research in the area of Digital Signal Processing. Research and thesis work include data modeling and processing, image analysis and modeling, signal detection and classification, multi-rate processing and other areas. Lab facilities include several PCs equipped with the latest MIDAS Engineering hardware and standard software package.

### **Electromagnetics Laboratory**

This laboratory supports instruction and project/thesis in the area of microwave systems and technology. This is accomplished with a mix of hardware, instruments and test systems. The Lab facilities include Microwave communications teaching set (scanTEK 2000) with CT60 and CT60IS.

### **Control Systems Laboratory**

This laboratory emphasizes problem based learning and research using pilot plant. Lab facilities include servo control stations (CA06, LJ Group) and associated computers (equipped with A/D and D/A data acquisition cards, Matlab/SIMULINK software and RT-Linux for RTS) that are used to conduct simulations and physical experiments, modeling, analysis, and design of control systems, transducer instrumentation trainer (DigiAC 1750).

### **Optical Electronics Laboratory**

The Optical Electronics Laboratory provides educational and project/thesis support in the areas of fiber optics, integrated optics and electro-optics. The Lab facilities include fiber optics instrumentation (optical fibres DL 3155M63, De Lorenzo Group) set. This laboratory supports ECE340 and ECE410 courses.

### **Cisco Networking Laboratory**

The Cisco Laboratory of BRAC University has the Cisco Premium Bundle 1.6, which includes 2600 routing products, switching products and other support products. Students will learn how to install and configure Cisco switches and routers in multiprotocol networks using local-and wide-area networks (LANs and WANs), provide Level 1 and 2 troubleshooting services, and improve network performance and security. Additionally, instruction and training are provided in the proper care, maintenance, and use of networking software tools and equipment. The laboratory caters to the networking courses into which the CCNA certification Program has been integrated. Along with that this lab is also used for some introductory and intermediate Computer Science and Engineering courses' laboratories.

### **Linux Laboratory**

BRAC University has a dedicated Linux Laboratory using the Fedora Core 6 distribution at the time of this writing. The Linux Laboratory is used for all the advanced Computer Science and Engineering laboratory courses, as well as for some of the introductory and intermediate ones. It is also heavily used for undergraduate thesis projects. The Linux Laboratory is set up so that the software on the client computers can be installed, or upgraded, and managed using a solution that does not require any operator intervention.

### **Physics Labs**

For the undergraduate program in physics, laboratory experiments on different topics of physics have been set up. These labs supplement the theory courses and strengthen students' theoretical concepts. Students of other departments taking physics courses can also carryout experiments using the physics lab facilities in addition to their theory classes.



### **Mathematics Lab**

MNS Department also has a mathematics lab where students solve mathematical problems on calculus, numerical analysis, matrices, ordinary and partial differential equations etc. using the "mathematica" software.

### **Biotechnology Lab**

A unique feature of the Master's in biotechnology course run by the MNS Department is to give emphasis to lab exercises. There are Pharmacy labs in Arong House. There are other labs facilitated by having MOU'S with BRAC ARDC at Gazipur, ICDDR,B and the University of Dhaka. These agreements will make it possible for the students to use these lab facilities whereby they can acquire the very necessary hands-on experience. It is also envisaged to set up the different biotechnology labs at BRAC University gradually.

### **ENH Writing Lab**

A Writing Lab, a student run writing tutorial centre, is instituted at the Department of English and Humanities (ENH) for the students of the department. This centre is aimed to help ENH students identify and overcome various writing difficulties through peer review and individualized tutorial sessions by the students of the department. Each tutor has two designated hours per week for the tutoring task that includes providing support at all stages of the writing process. Students can drop by the Writing Lab during available hours or sign up for a specific slot of time with a specific tutor of their preference.

### **Video Conferencing Centre - Global Development Learning Network (GDLN)**

BRAC University is the one and only affiliate of the Global Development Learning Network (GDLN) (<http://www.gdln.org>) in Bangladesh and has been operating since 2006. This centre is coordinated by the World Bank from Washington D.C. The GDLN is a partnership of over 120 recognized global institutions (affiliates) in over 80 countries that collaborate in the design of customized learning solution for individuals and organizations working in development. Affiliates are as diverse as the Asian Institute of Management, the Ethiopian Civil Service College, the Islamic Development Bank and Pontificia Universidad Catolica of Peru. The centre for GDLN at BRAC University has its own Video Conferencing Centre. This is located at the 18<sup>th</sup> floor of Aarong House and is used to conduct live meetings, corporate affairs, seminars and presentations among people who are geographically apart. Furthermore, it enables virtual tours and participation in global events. Around 40 people can participate at a time.

### **IT Network**

The IT Network of BRAC University enables all members, students and faculty alike, to maintain personal user accounts with an email account and a home folder. In addition to this, all members can access certain common folders. This makes sharing and distribution of class lectures, assignments and other such information a mouse click away. BRAC University now has 900 workstations linked together through Local Area Network (LAN) and Wide Area Network (WAN).

### **Architecture Studios**

There are eight architecture studios at BRAC University, each equipped with large drawing tables, worktables, equipments such as rulers, lockers and plenty of space in which to display the final outcomes. Each of these studios can hold up to 20 students at a time.

### **Ayesha Abed Library**

The Ayesha Abed Library (<http://library.bracu.ac.bd/>) at BRAC University aims to provide support for the University's learning, teaching and research activities. The library supports the curriculum

and research needs of the University community through the development of pertinent collections and the provision of services designed to facilitate access to information and learning.

The library houses approximately 18,000 books in its collection and access to over 13,000 e-journals. The library has extended the range and depth of its collection through subscribing to the e-resources via PERI under the Bangladesh INASP PERI consortium program. The library also subscribes to a number of databases such as JSTOR, eGranary, AGORA, HINARI, EOLSS, and OARE. The library regularly provides training, orientation, and workshops for a wide variety of groups and individuals.

The Library is planning further changes to improve access to resources and services. In 2008, the Ayesha Abed Library successfully implemented a Digital Institutional Repository Project (<http://dspace.bracu.ac.bd>) funded by INASP (International Network for the Availability of Scientific Publications), UK. The main objective of this project was to support and promote the research and intellectual output of the university. The repository has been established to facilitate both dissemination and preservation of digital material created by the members of the BRAC University. In 2009, with support from the Elsevier Foundation a project has been initiated to create an Integrated Library System (ILS) using open source software KOHA.

To maximize the use of resources it is necessary to help users gain maximum benefit from information sources and systems. At this situation a BRACU Library Learning Resource Centre (LRC) has been established to help users gain maximum support from the library.

### **BRAC University Cafeteria**

The Cafeteria of the university is a spacious and well-lit area that can hold up to 150 students at any given time. It serves a variety of snacks, meals and drinks.

### **Indoor Games Room**

Adjacent to the cafeteria is the Indoor Games Room, with provisions for playing table tennis, carom and chess, etc.

### **Prangan**

Prangan, located on the first floor of the University Building, is an open-air garden with a capacity of 100 students. This area includes a snack bar that serves tea, coffee and snacks, a provision for indoor games such as carom and chess and plenty of seats where students can lounge around and enjoy the fresh air.

### **Career Services Office (CSO)**

The chief mission of the Career Services Office (CSO) at BRAC University is to prepare students for the job market in Bangladesh. CSO will provide a knowledge base in career planning skills and tools. The activities at CSO are partnership-effort oriented; it makes a match between the individual student and the employing organization. CSO provides a variety of programs, workshops, and individual counseling opportunities to help students to develop themselves professionally. The services provided to students are consistent with the institution's mission.

### **Ways to develop skills**

- Internships
- Through BRAC University Clubs, Organizations, etc.

### **Extracurricular Activities**

- Professional Skills Development Program (PSDP)
- Workshops

**Services that are offered from the office are**

- Career counseling
- CV referrals for jobs
- CV critiquing
- Arranging internships
- Arranging networking sessions

**Services that are offer to assist in the job search process**

- Job postings
- Job search materials
- Professional Skills Development Program
- Networking opportunities

**Teaching Learning Centre (TLC)**

The Teaching Learning Centre (TLC) at BRAC University works both with faculty and students to examine attitudes towards teaching and learning. TLC was introduced in the year 2006 with the mission to build awareness among students, encourage and facilitate a student centered learning environment across the departments of the University.

TLC organizes:

- Retreat two-day workshops for teachers
- Two-day orientation workshops for students that introduce as well as implement the concept of self-rules at the Residential Semester
- Study skill workshops for Residential Semester students
- Individual counseling for students with study problems

In addition, TLC offers support in developing student centered learning courses. Recently, it has helped restructure the Ethics and Culture course that is conducted at the Residential Semester of BRAC University. The course now includes self-reflection essays, discovery of self, Ethics Committees and dramas. Evaluation has shown that students now enjoy, participate and learn much more in the course.

**Center for Languages (CfL)**

Through its hard work and focus on creative and forward thinking teaching concepts, the English Language Programme (EL Pro) has now become BRAC University, The Centre for Languages, (BRACU CfL).

BRACU CfL is offering a new and exciting range of languages, such as English, Chinese, French, Spanish, Japanese, Russian, and of course, Bangla. The Centre's learners include students who need a foreign language for successful admission to a graduate program, and adults who need a foreign language to be successful in the global economy. We hope to assist expatriates living in Dhaka, who need to or would like to learn Bangla.

**Centre for Research on Bangla Language Processing (CRBLP)**

The Centre for Research on Bangla Language Processing (CRBLP) is the only research centre in Bangladesh that is dedicated to software localization. It was established in 2004 with seed funding from the International Development Research Centre (IDRC) of Canada through its PAN Localization Network (PanL10n) program, and has since secured additional support from the Microsoft Corporation of USA. The CRBLP research team has been working on Bangla Document Authoring, Information Retrieval (Spelling Checker, Search Engine), Optical Character Recognition, Speech Processing (Speech Synthesis, Speech Recognition), Machine Translation, Pronunciation Generator, Morphological Analysis, Parts of Speech Tagging, Computational Syntax, Grammar Checker, Text Categorization, Language Modeling and related research areas. In

February of 2009, CRBLP launched the first open source Bangla optical character recognition and Bangla text to speech software packages. With funding from Microsoft, CRBLP localized Microsoft Vista and Office, which may be downloaded for free from Microsoft's website. All of CRBLP's software is released under an open source license. Further details are available at the CRBLP website <http://crblp.bracu.ac.bd>.

### **Economics and Social Sciences Research Cell (ESSRC)**

The Department of Economics and Social Sciences (ESS) has established a research cell to facilitate research by its faculty and graduate students. The objective of this cell is to create a supporting environment for research by providing services ranging from basic research and data collection, to the broader issues of problem identification and mentoring by senior faculty. The cell organizes regular seminars and workshops as a means to disseminate research results, and to foster collaboration among the researchers within and beyond the university. The ESS research cell is planning to bring out a journal annually to disseminate original research findings, and to create a database of primary and secondary data.

### **BRACU Journal**

Ten issues of BRACU Journal were published so far from BRAC University. The journals contained articles relevant to the departments/schools/institutes/centre of BRAC University. The contributions came from both within and outside BRACU.

### **Student Affairs**

BRAC University's mission is to achieve excellence in all round education. The components of all round education, i.e., learning, development and identity formation are interactive and add to each other. The students can experience all of these through participating in co-curricular activities along with regular studies. University's Student Affairs department (SA) provides full support in this respect.

### **Clubs and Forum**

The co-curricular arena of the university is quite vibrant and student-oriented. The composition of each club or forum includes teacher/staff advisors and student representatives. Enrolment of members is done during the club fair held each semester. The Director of the Student Affairs supervises the activities with the help of an assistant director and a student affairs officer. A multi-use hall, two eighty-seat lecture halls, cafeteria and a planted semi-outdoor space with technical support are used for seminars, workshops, exhibitions, indoor games, competitions, fairs and cultural activities. The residential campus in Savar provides a play field for outdoor games. The facilities of BRAC throughout the country such as training centers with dormitories, transport and guides are available for tours and other events.

A yearly award system has been introduced for the students with major contributions as well as for the most active club. The SA has currently adopted the 'Ambassador Program', where students good in leadership, time management, collaboration and teamwork are selected from clubs and forums and trained to represent the university.

Annual assessment of the co-curricular activities has been conducted since 2006. University rules have been introduced for participating in the activities without hindering academic performance.

The Student Affairs emphasizes on the wholeness of university experience through synchronized development of body, mind and spirit. It aims at integrating co-curricular with academic learning, and stresses on service learning through community volunteer work.

There are a total of 30 student clubs and forums in categories of:

- Arts/Culture
- Social Welfare/Community service
- International
- Entrepreneurial
- Subject related
- Sports
- Science

These clubs and forums provide opportunities for developing leadership, confidence, goal setting, sense of ownership, time management, collaboration and teamwork. The clubs and forums are:

- AIESEC BRACU (International Club)
- Football Club FCBACU
- Art Society BRACU
- Global Affairs Forum GAFBRACU
- Business Club Biz Bee
- Indoor Games Club BUIGC
- BRACU Student Newsletter
- MBA Forum (for MBA Students)
- Computer Club BUCC
- MIS Club
- Cricket Club BRACU Cricket Club
- OIKOS Dhaka (International Club)
- Cultural Club BUCuC
- National Heritage Forum BUNHF
- Debating Club BUDC
- Photography Club BUPC
- Drama and Theater Forum BUDTF
- Natural Sciences Club BUNSC
- ECE Club
- Social Development Forum SDF
- Economics Club BUEC
- Social Entrepreneurship Forum BUSEF
- Entrepreneurship Development Forum EDF
- BRAC University MIS Forum
- Environment Awareness Forum BUEAF
- Rotaract Club of BRAC University
- Film Club BUFC
- Rural Development Club BURDC
- BRACU Perecon
- HoV BRACU

Major activities of clubs and forums include:

- Club Fair
- Film Show
- Cricket, Football and Indoor Games
- Trade Fair
- Voluntary Blood Donation Campaign
- Community Volunteer Work
- Art, Photography and Hobby Exhibition
- Seminar and Workshop
- Competitions in Art, Debate, Music, Photography, Film
- Celebration of national and international events such as Pohela Boishakh, International Mother Language Day, Independence Day, Victory Day.
- Business plan, Photography, Computer programming
- Publishing Newsletter

- Study Tour
- Annual Drama
- Archives
- Annual Cultural Program
- Research
- Concert
- Help group/Help sessions

### **BRAC University Alumni Association**

Objective of this association is to promote the interests of BRAC University Alumni network, guide and mentor students and alumni and ensure that BRAC University stays dynamic and constantly updated in response to the changing needs of society.

Our mission is to connect alumni to BRAC University and, provide each other valuable benefits, services and resources and support to the University's mission of teaching, research and service.

The association provides professional and personal enrichment opportunities for alumni and friends through educational, informational and social events. Working closely with the University, the Association informs alumni of the University's events and news provides a forum for continued dialogue with the University.

The association is intended to provide services such as helping students finding jobs, career advice for freshers, sharing job experiences, building fund-raising support, providing suggestions to change the BRAC University curriculum which will meet the current demands of the market and strengthen BRAC University's outreach.

Any graduate of BRAC University, who has obtained an honorary or regular degree (undergraduate or postgraduate), certificate or diploma from BRAC University, or was formally enrolled at BRAC University as a full-time or part-time student for a period of not less than two semesters or equivalent; as well as all alumni of BRAC University, is considered to be members of the BRAC University Alumni Association. An executive committee consisting of six members carries out the operations of the association. Each executive committee stays in office for one year. To assist the executive committee in their duties, there are several subcommittees, each in charge of different aspects of the organization. Please visit the website of Alumni at <http://alumni.bracu.ac.bd>

### **Finance and Accounts Department**

Finance and Accounts department receives tuition fees, other fees and donations from students and donors respectively and usually make all types of payments, and prepare and provide various reports to the management such as weekly fund position, monthly central budget variance report, quarterly department-wise budget variance report, annual financial statements, provident fund financial statements, fund management, donors report etc. BRAC University is also running more than 42 donor projects and maintain all the activities like students' enrollment and registration, accounting, payroll, fixed assets management system, cheque management systems, provident fund, income tax, etc. through the touch of modern softwares. Finance and Accounts Department also provides information and all types of analysis, various reports, etc to the management for assist in the decision making.

## ACADEMIC SYSTEM

### Postgraduate Programs

The curriculum for degree requirements of graduate programs vary depending upon the degree offered.

#### Transfer of Credits

Transfer of credits from institutions having equivalent curriculum, grading system and grading standard may be allowed for a maximum of 30 credits provided that the student has obtained at least B+ grade(s) in the course(s) eligible for transfer. The university will consider applications for transfer of credit on a case-by-case basis.

#### Methods and Medium of Instructions

The university follows modern teaching methods including interactive Internet, simulation, lab work, case analysis, and field study. A special feature of BRAC University teaching is the workshop/lab sessions designed to assist students in learning application of concepts and theories. The medium of instructions in BRAC University is English.

#### Grading System

The grades at the university will be indicated in the following manner:

90	-	100	=	A	(4.0)	Excellent
85	-	<90	=	A-	(3.7)	--
80	-	<85	=	B+	(3.3)	--
75	-	<80	=	B	(3.0)	Good
70	-	<75	=	B-	(2.7)	--
65	-	<70	=	C+	(2.3)	--
60	-	<65	=	C	(2.0)	Fair
57	-	<60	=	C-	(1.7)	--
55	-	<57	=	D+	(1.3)	--
52	-	<55	=	D	(1.0)	Poor
50	-	<52	=	D-	(0.7)	--
<50	--	--	=	F	(0.0)	Failure

#### Grades without numerical value:

P: Pass      I: Incomplete      W: Withdrawal

#### GPA Computation:

The Grade Point Average (GPA) is computed in the following manner:

$$\text{GPA} = \frac{\text{Sum of (Grade points} \times \text{Credits)}}{\text{Sum of Credits attempted}}$$

#### Pass/Fail Option

A course may be taken for a pass/fail grade, providing that the instructor approves the option and the student carries 12 credits for regular letter grades in that semester. Within the total credits required for a degree, a maximum of 16 credits may be taken for credit with pass/fail grading option. No more than 4 credits may be taken with the pass/fail grading option in any one semester. Departments may not approve the pass/fail grading option for some courses counting towards the major.

**Incomplete Grade:** An Incomplete (I) grade is assigned only when a student has failed to complete one or more requirements of the course for an unavoidable reason/accidental circumstance and has applied for I grade. The students who are permitted to appear in Make up examination(s) will be assigned an 'I' grade for that course and this grade will stay until the student appears in the make up examination at the first available opportunity; if s/he fails to appear in the make up examination the 'I' grade will automatically be converted to 'F' grade."

**Withdrawal (W):** is assigned to a student who withdraws from the course within the deadline for withdrawal with W grade. A student who withdraws after this date will earn the grade based on his performance before his withdrawal. Exception to this rule may be made on medical ground and on terms and condition imposed by the University.

### **Grades Review Procedure**

The Committee on Academic Standard administers the grading regulations, and reviews course grades submitted by Departments.

### **Academic Standing**

Students are expected to maintain a consistently high standard in their academic work. They should be taking the requisite number of courses and maintain satisfactory grades in these courses. In particular students are expected to maintain a CGPA of 2.50 (both semester and cumulative), otherwise they will be put on probation for the following semester. If a student fails to maintain a CGPA of 2.50 in the following two semesters, then the university will review the student's record and recommend further action which may include options such as changing course of study, taking extra courses or in some cases, withdrawing from the university. First year students whose grade point average is below 1.0 may be asked to withdraw from the university.

### **Requirements for the Degree**

For graduation, a student must complete the requisite number of credits of course work and meet other requirements depending on the program in which he/she is enrolled and must maintain a CGPA of 2.50. The University, however, reserves the right to refuse the awarding of degree on disciplinary or similar grounds.

### **Student Advising**

When students first join the university, they are assigned an advisor, a faculty member who helps them in choosing their courses for the first year. Later students are assigned an advisor who then guides the student in choosing the courses of his/her major. Students will develop the direction of their study in consultation with their advisor.

### **Remedial Courses**

Many students joining the university would be coming from Bangla medium schools and therefore would have to adjust to English as the medium of instruction. They may be asked to attend Remedial English courses during or proceeding the semester in which they take regular courses. Students from non-science background or who are weak in Mathematics may be asked to attend a remedial course in Mathematics. The University may ask the students to attend other remedial courses if necessary.

### **Courses for Audit and Credit**

Audit is a registration status allowing students to attend a course without receiving credit. Both undergraduate and postgraduate students enrolled in BRAC University may audit courses. Graduates of BRAC University or other universities acceptable to BRAC University may enroll for "Audit" of courses. The performance of students auditing a course will not be evaluated or graded and they will receive a grade 'AU'.



## Admissions

### POSTGRADUATE PROGRAMS

#### Minimum Qualification for Applying

To get admitted into a postgraduate programs of BRAC University a candidate must meet the following requirements:

- a) A total of 15 years of study and at least a bachelor's degree; however some programs may have different criteria for admission.
- b) A CGPA of 2.50 or above in the bachelor's degree, or six (6) points calculated as follows:

Certificate/Degree	Division/Class	Points
SSC*	1st	2
	2nd	1
HSC*	1st	2
	2nd	1
Bachelor (Pass)	1st	1
	2nd	1
Bachelor (Honors)	1st	3
	2nd	2
Masters	1st	3
	2nd	2

Alternatively, HSC-Letter grades / O-Level (in five subjects) & A-Level (in two subjects with a GPA of 2.5 or above), will be calculated according to BRAC University scale: A=5, B=4, C=3, D=2 & E=1. Only one E is acceptable.

- c) Candidates with third division or CGPA of 2.00 at any level of education are not eligible to apply.
- d) Qualify in the admission test consisting of a written test and an interview.

#### Application for Admission

The Application Form, Admission Instructions, Prospectus of BRAC University and further information are available at the Admission Desk on the Ground floor of BRAC University.

Completed Application with an Admission test fee must be submitted to the Admission Desk within the announced deadline.

A complete application includes:

- 1) Completed Application Form
- 2) Two passport size color photographs, duly attested
- 3) Attested copies of all certificates and mark sheets
- 4) Testimonial / letter of recommendation from Institution last attended
- 5) Admission test fee receipt

## Fee Structure

### Non-refundable Fees\*

Admission Fee	Tk. 12,000.00 (one time)
Computer Lab Fee	Tk. 1,500.00 per semester
Students Activity Fee	Tk. 600.00 per semester
Library Fee	Tk. 750.00 per semester

### Tuition Fee per Credit\*

MBA	Tk. 4,500.00
EMBA	Tk. 4,500.00
MBM	Tk. 4,500.00
MDS	Tk. 4,500.00
PPDM	Tk. 4,500.00
MA in English	Tk. 4,500.00
MSAE	Tk. 4,500.00
MS in Biotechnology	Tk. 4,500.00
M.Sc. / MEgg in EEE	Tk. 4,500.00

*\*Subject to enhancement with a notice before a semester*

## Refund Policy

- ↪ Only tuition fees will be refunded to a student who withdraws from a semester after registration as per the following rates:
- ↪ 100% within seven days from the day classes begin
- ↪ 75% within 16 days from the day classes begin
- ↪ 50% within 23 days from the day classes begin
- ↪ No refund after 23 days
- ↪ Admission and other fees will not be refundable.

# **Academic Programs**



## Department of English and Humanities

### DESCRIPTION OF PROGRAM

#### **MASTER OF ARTS (MA) IN ENGLISH**

##### **Introduction**

English is now the most dominant language in the world and there is a renewed emphasis given on the teaching and learning of English in most countries of the world, and Bangladesh is no exception. People from all walks of life acknowledge the need to deepen their knowledge of English and to raise their proficiency in using it for a wide range of purposes. The Department of English and Humanities at BRACU has been concentrating on a course of studies that combines literature teaching with language, as well as media and cultural studies, in its undergraduate program. The same approach is followed in our MA program, thus distinguishing it from other MA programs offered elsewhere. BRACU MA in English program has two concentrations: a) Literature, and b) ELT and Applied Linguistics. The program is based on the conviction that students will benefit from an in-depth study of many aspects of English language and literature.

##### **Objectives**

The curriculum of the MA in English (Literature and ELT & Applied Linguistics) is designed for persons holding a bachelor's degree in English or a related field who wish to enhance their skills and knowledge of English in a specialized stream whether it is language or literature. The program seeks to prepare students to engage in the process of critical thinking and to carry out research and inquiry into their chosen area of interest. The MA program also aims to provide a bridge between undergraduate studies and the demanding dissertation work required for the MPhil or PhD. It will also add on some necessary courses to supplement or to enhance the literary competence of students from related disciplines, who might have limited background in literary or language study at the undergraduate level.

##### **Transfer of Credits**

Transfer of credits from institutions having equivalent curriculum, grading system and grading standard may be allowed for a maximum of 12 credits provided the student has obtained at least B grade(s) in the course(s) eligible for transfer. The university will consider applications for transfer of credit on a case-by-case basis.

##### **Degree Requirements**

Students will have to complete a minimum of 36 credits for the MA, distributed as follows:

- o 2 core courses (6 credits)
- o 6 elective courses (18 credits)
- o MA Thesis (12 credits)

In addition, students entering without the necessary prerequisites will first have to complete four pre-requisite courses (12 credits) in the Foundation Semester.

Students must attain a minimum CGPA of 2.0 and a minimum grade of 'B' in the thesis.

## Program Structure

The proposed MA in English at BRACU is a 36-credit program designed to be completed in 3 semesters. It will require 12 credits of coursework for the first two semesters, followed by 12 credits of thesis work in the last semester. However, students lacking the necessary pre-requisites will need an additional Foundation Semester of 12 credits before proceeding with the regular MA courses.

Semester	Courses	Credits
Foundation Semester	4 pre-requisite courses (if necessary)	4 x 3 = 12 credits
Semester I	2 core courses + 2 elective (Literature) 2 core courses + 2 electives (Language)	4 x 3 = 12 credits
Semester II	4 elective courses (Literature) 4 electives (Language)	4 x 3 = 12 credits
Semester III	Thesis	12 credits

The distribution of courses and credits is given below. The pre-requisite courses in the Foundation Semester (12 credits) will be waived for students who have taken equivalent courses in their undergraduate studies.

Areas	No. of Courses	Credits
Pre-requisites (if needed)	4	12
Core Courses	2	6
Elective Courses	6	18
Thesis		12
Total		<b>36 credits</b> (or <b>48</b> credits with Foundation Semester)

## COURSE CONTENTS

### Concentration Options

The MA in English can be done with a concentration in Literature or a concentration in Applied Linguistics and ELT. While the Foundation Semester (prerequisite) courses are almost the same for both concentrations, during Semester I and II, students will take courses in their chosen concentration. Finally, in Semester III, all students will be required to write an MA thesis.

Even though students will be concentrating in either Literature or Applied Linguistics and ELT, they will be encouraged to take at least one or two elective courses outside their concentration for a more well-rounded education.

### CONCENTRATION IN LITERATURE

#### Courses Offered

#### Foundation Semester

These courses are compulsory for students lacking the necessary prerequisites.

ENG 601	Advanced Writing Skills	3 credits
ENG 603	Reading and Writing for Teaching ESL	3 credits
ENG 604	Research Methodology	3 credits
ENG 605	Contemporary Literature in English	3 credits

## Semester I

Some students may need to take a combination of Foundation and Semester I courses.

One course in Literary Criticism from the following:

ENG 611	Basic Readings in Feminist Literary Criticism	3 credits
ENG 612	Basic Readings in Postcolonial Literary Criticism	3 credits
ENG 613	Basic Readings in Postmodern Literary Criticism	3 credits
ENG 614	World Literature in Translation	3 credits
ENG 616	Classical Literary Theories of the Eastern & Western Traditions	3 credits

One of the following electives:

ENG 615	Nationalism and Literature	3 credits
ENG 617	Literature and Popular Media	3 credits
ENG 671	Cultural and Media Studies	3 credits
	An elective course outside the concentration	3 credits

## Semester II

The literature concentration offers a choice of three streams of study. Students can focus on one, or combine courses from different streams. Each stream has at least one course focusing on application of theory to the real world.

### ***Stream 1: Feminist Approaches to Literature***

ENG 618	Tracing a Feminist Tradition: 18 <sup>th</sup> & 19 <sup>th</sup> Century Women's Writing	3 credits
ENG 619	Twentieth Century Feminist Readings of Literature	3 credits
ENG 620	Transnational Feminism: Reading Literature Interculturally	3 credits
ENG 621	Gender Theories and Feminist Readings in English	3 credits

### ***Stream 2: Postcolonial Literary Readings***

ENG 622	Reading English Literature Postcolonially: From Shakespeare to Defoe	3 credits
ENG 623	Colonialism and Literature: The Nineteenth Century	3 credits
ENG 624	Postcolonialism and the Contemporary World: Reading "Other" Englishes	3 credits
ENG 625	Translation and the Study of Literature	3 credits

### ***Stream 3: Postmodernism and Literature***

ENG 626	Postmodernist American Literature: from the 1960's to the present	3 credits
ENG 627	Postmodernist British Literature: from the 1980's to the present	3 credits
ENG 628	Postmodernism in Translation: Spanish and French traditions	3 credits
ENG 629	Postmodernism and the Visual Media	3 credits

## Semester III

ENG 699	MA Thesis	12 credits
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Students in the Literature concentration are required to complete a thesis of 15,000 to 20,000 words on a topic of their choice and approved by their thesis advisor. ENG 699 (Thesis) will have to be taken during Semester III, and the student will be guided by a thesis advisor. The thesis will have to be presented and defended in front of a committee composed of at least two faculty members and one external examiner.

## Elective Courses

Each course carries 3 credits and at least 5 elective courses must be completed. A student may focus on a specific field of interest by selecting the courses from one stream, or take courses from more than one stream.

ENG 618	Tracing a Feminist Tradition: 18 <sup>th</sup> and 19 <sup>th</sup> Century Women's Writings
ENG 619	20 <sup>th</sup> Century Feminist Readings of Literature
ENG 620	Transnational Feminism: Reading Literature Interculturally
ENG 621	Gender Theories and Feminist Readings in English
ENG 622	Reading English Literature Post Colonially: From Shakespeare to Defoe
ENG 623	Colonialism and Literature: The Nineteenth Century
ENG 624	Postcolonialism and the Contemporary World: Reading "Other" Englishes
ENG 625	Translation and the Study of Literature
ENG 626	Postmodernist American Literature: from the 1960's to the present
ENG 627	Postmodernist British Literature: from the 1980's to the present
ENG 628	Postmodernism in translation: Spanish and French traditions
ENG 629	Postmodernism and the Visual Media
ENG 671	Cultural and Media Studies

## CONCENTRATION IN ELT & APPLIED LINGUISTICS

### Foundation Semester

These courses are compulsory for students lacking the necessary prerequisites.

1. ENG 601	Advanced Writing Skills	3 credits
2. ENG 603	Reading and Writing for Teaching ESL	3 credits
3. ENG 604	Research Methodology	3 credits
4. ENG 609	Aspects of Language	3 credits

### Semester I

Some students may need to take a combination of Foundation and Semester I courses.

ENG 641	Methods and Techniques in ELT	3 credits
ENG 642	English as a Second Language: Theory and Practice	3 credits
ENG 643	Sociolinguistics and Psycholinguistics	3 credits
ENG 644	Approaches to Teaching Grammar	3 credits
ENG 645	Discourse Analysis	3 credits
ENG 646	Computer Assisted Language Learning	3 credits
ENG 647	World Englishes	3 credits

### Semester II

Students may choose 4 courses from the following courses, with the option of taking one course from the list of the Semester I courses.

ENG 648	Teacher Education	3 credits
ENG 649	Material Design and Evaluation	3 credits
ENG 650	Teaching English for Specific Purposes	3 credits
ENG 651	Testing and Evaluation	3 credits
ENG 652	Curriculum and Syllabus Design	3 credits
ENG 653	Teaching Practicum	3 credits
ENG 654	Phonetics and Phonology	3 credits

### Semester III

ENG 699	MA Thesis	12 credits
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Students in the Applied Linguistics and ELT concentration also have to take ENG 699 (Thesis) in their final semester. They may write a thesis (of 15,000 to 20,000 words) on a topic of their choice and approved by their thesis advisor; or they may complete a semester-long internship in lieu of the thesis. If they take the second option, they must write a report based on their internship, which then has to be presented and defended in front of a committee composed of at least two faculty members and one external examiner.



### **Elective Courses**

Each course carries 3 credits and at least 5 elective courses must be completed. A student may focus on a specific field of interest by selecting the courses from one stream, or take courses from more than one stream.

- ENG 643 Sociolinguistics and Psycholinguistics
- ENG 644 Approaches to Teaching Grammar
- ENG 645 Discourse Analysis
- ENG 646 Computer Assisted Language Learning
- ENG 647 World Englishes
- ENG 649 Material Design and Evaluation
- ENG 650 Teaching English for Specific Purposes
- ENG 651 Testing and Evaluation
- ENG 652 Curriculum and Syllabus Design
- ENG 653 Teaching Practicum
- ENG 654 Phonetics and Phonology

## Department of Economics and Social Sciences (ESS)

The Department offers the following postgraduate program:

### Master of Science in Applied Economics (MSAE)

#### DESCRIPTION OF PROGRAM

#### **MASTER OF SCIENCE IN APPLIED ECONOMICS (MSAE)**

##### **Introduction**

The Master of Science in Applied Economics (MSAE) has been mainly designed with the aim of creating highly competent economics professionals to serve in the private and public sectors of Bangladesh. A key feature of the program is the importance it attaches to the application of tools in practical settings. Thus, it aims to strike a balance between theory and practise. On completion of the MSAE program, graduates can expect to pursue careers in banks, financial organisations, nongovernment organisations and international agencies. Furthermore, completion of the core component of the program (details below) should provide a satisfactory grounding in the requisite theory that will enable graduates to carry on to the Doctoral level if they be so inclined.

##### **Admission Requirements**

Applicants should ideally possess at least a Bachelor's degree in economics from a recognised university. However, a person with a Bachelor's or Master's degree in any other discipline can apply provided certain quantitative skills are met. Such candidates may be required to take some or all of the non-credit foundation courses which are mentioned below.

##### **Structure of the Program**

The MSAE program is structured as follows:

Areas	Number of Courses	Credit Hours
Foundation Courses (if required)	03	Non-Credit
Core Courses	05	15
Primary Concentration Courses	03	09
Free Electives/Concentration Courses	02	06
Thesis	N/A	06
<b>Total</b>		<b>36</b>

The program is designed to be completed in three semesters of full time study (one year) or four semesters if foundation courses are required.

##### **List of Courses**

##### **Foundation Courses (3 courses, non-credit)**

Students from a non-economics background may be required to take all or some of the following non-credit undergraduate courses before the MSAE program is commenced.

- ECO 203 Intermediate Microeconomics
- ECO 204 Intermediate Macroeconomics
- ECO 303 Introduction to Econometrics

##### **Core Courses (15 credits)**

The following courses form the core requirement of the MSAE program with the aim of providing an in depth theoretical and practical knowledge of the core fields in economics.

- ECO 511 Principles of Quantitative Analysis (3 Credits)
- ECO 512 Microeconomic Theory and Applications I (3 Credits)
- ECO 513 Macroeconomic Theory and Applications (3 Credits)
- ECO 514 Microeconomic Theory and Applications II (3 Credits)
- ECO 515 Advanced Econometrics (3 Credits)

### **Primary Concentration Courses (9 credits)**

Along with core courses in economics, the students may choose one of three concentration fields for a thorough understanding of that particular area of economics. A student needs to complete 9 credits, in consultation with the academic advisor, from one of three fields below to complete the requirements of a primary concentration. An interested student can complete more than one area of concentration.

### **Free Electives / Secondary Concentration (6 credits)**

Each student is also required to complete 6 more credits of elective courses from any of the fields below. By taking these 6 credits from one particular area in consultation with his/her advisor, a student can acquire a secondary concentration in that particular field.

### **Thesis (6 credits)**

Successful completion of the program also requires the student to prepare and defend a thesis (ECO 690) of acceptable academic standard.

### **Fields of Concentration**

#### **1. Econometrics**

- a. ECO 611 Time Series Analysis and Forecasting (3 Credits)
- b. ECO 612 Models of Qualitative Choice (3 Credits)
- c. ECO 613 Econometric Analysis of Panel Data (3 credits)
- d. ECO 614 Topics in Econometric Analysis (3 Credits)

#### **2. Financial Economics**

- a. ECO 621 Corporate Finance and Economic Analysis (3 Credits)
- b. ECO 622 Capital Markets and Investment Strategy (3 Credits)
- c. ECO 623 Asset Pricing and Financial Derivatives (3 credits)
- d. ECO 624 Risks, Uncertainty and Insurance (3 credits)
- e. ECO 625 Managerial Economics (3 credits)
- f. ECO 626 Topics in Financial Economics (3 credits)

#### **3. Public Policy**

- a. ECO 631 Public Economics (3 Credits)
- b. ECO 632 Project Appraisal and Management (3 Credits)
- c. ECO 633 Resource and Environmental Economics (3 Credits)
- d. ECO 634 Trade Policies and Development (3 Credits)
- e. ECO 635 Economic Development Policies in Bangladesh (3 Credits)
- f. ECO 636 Topics in Economic Policy Issues (3 Credits)

### **Transfer of Credits**

Prospective students who wish to transfer credits to the MSAE program should bring it to the attention of the Department. The final decision to transfer credits resides with the Departmental authorities.

## Department of Mathematics and Natural Sciences

The Department of Mathematics and Natural Sciences (MNS) of BRACU offers a postgraduate program - MS Biotechnology. The program was started in the Spring 2007 semester. Already a batch of three students completed their MS in Biotechnology. Amongst the other future postgraduate programs of the department are M.Phil and MS degrees in Physics.

### DESCRIPTION OF PROGRAM

#### MASTER OF SCIENCE IN BIOTECHNOLOGY

##### Introduction

At BRACU the degree of Master of Science in Biotechnology has been designed for creating highly competent biotechnologists to serve in the universities and other academic institutions, R&D organizations, and biotech-related industries in both private and public sectors of the country. With this academic background the graduates will be able to pursue higher studies leading to PhD degree both at home and abroad or even start their own enterprises. The MS Biotechnology curriculum at BRACU is aimed to blend a balance between theory and practice.

BRACU has active collaboration with the University of Dhaka in terms of faculty exchange and postgraduate research and other organizations like ICDDR,B, BIRDEM and BRAC Agriculture Research and Development Centre with excellent research and training facilities for research and project work.

##### Mission and Goal

Obtaining MS degree in biotechnology requires knowledge, skill and commitment to the subject on the part of students. The purpose of assigning a research project to students, one each, is to enable them to perceive the kind of problems faced by industries such as dealing with pharmaceutical products, environmental issues, amelioration of natural hazards, agro-based seed multiplication companies, manufacture of diagnostic kits, vaccine production etc. On completion the graduates are expected to take up important positions in R&D organizations and biotech industries, covering diverse fields: pharmaceutical, agricultural, environmental, industrial, bioremedial, bioprocessing etc. Such an accomplishment may also be an incentive for some of them to combine their expertise to embark upon a joint venture for manufacture of biotech-related products including mass fabrication of diagnostic kits.

##### Course Requirements

The M.S. Biotech curriculum consists of core theory and lab courses and a wide variety of elective courses. In addition to these, with a view to getting acquainted with the process of how biotechnological research is carried out starting from the planning stage of a research project to its execution, a research project (thesis) of 6 credits is obligatory for all students. This will not only give an in-depth understanding of the research topic but also hands-on experience of conducting a research study.

The minimum credit requirement for the MS degree is 36 with a breakdown as given below:

Core courses:	15 Credits
Elective courses:	15 Credits
Research project (thesis):	6 Credits
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Total:	36 Credits

Each semester will concentrate on various fields of biotechnology so that at the completion of the MS degree the students will be acquainted with the science and techniques of biotechnology.

### Core Courses

The students will be required to complete 15 credits distributed over 5 core courses. One of the core courses will be devoted to plant biotechnology keeping in mind that plant biotechnology has progressed a lot in our country. To teach students about commercialization of biotechnological research products and dangers of pollution, core courses like environment biotechnology and industrial biotechnology are designed. Apart from these, another core course, animal biotechnology will be offered to acquaint students with the progress in this field with special reference to human biotechnology. Research project preparation needs good training on literature review, experimental design and interpretation of results. Case studies will be included in this course. A research/project (thesis) of six credits is obligatory for all students.

### Elective Courses

Students will be required to take 5 elective courses for a total of 15 credits.

### List of Compulsory Courses

<b>a. Core Courses</b>	<b>15 credits</b>
<b>b. Research Project (thesis)</b>	<b>6 credits</b>
-----	
<b>Total</b>	<b>21 credits</b>

<b>Course No.</b>	<b>Name of the Course</b>	<b>Credits</b>
BTC 501	Plant Biotechnology	3
BTC 503	Animal Tissue Culture Techniques and Applications	3
BTC 504	Fermentation and Industrial Biotechnology	3
BTC 505	Environmental Biotechnology	3
BTC 506	Research Project Preparation	3
	<b>Total</b>	<b>15</b>
BTC550	Research Project	6
	<b>Total</b>	<b>6</b>

### Elective Courses (15 Credits):

<b>Course No.</b>	<b>Name of the Course</b>	<b>Credits</b>
BTC 502	Plant Biotechnology (Lab)	3
BTC 507	Biostatistics & Experimental Design (Theory and Lab)	3
BTC 508	Seminar	3
BTC 509	Genomics (Bioinformatics)	3
BTC 510	Fundamental and Applied Aspects of Plant Genetic Manipulation	3
BTC 511	Commercial Production of Horticultural and Ornamental Plants	3
BTC 512	Sex, Flowers and Biotechnology	3
BTC 513	Gene Function and Its Regulation	3
BTC 514	Gene Organization and Regulation	3
BTC 515	Structural and Functional Genomic Studies	3
BTC 516	Special Studies	3
BTC 517	Enzymology	3

BTC 518	Recombinant DNA Technology	3
BTC 519	Medical Biotechnology	3
BTC 520	Cell Dynamics, Cell Cycle and Cell Death; Gene Mapping in Phages, and Bacteria	3
BTC 521	Genetically Modified (GM) Crops, Biosafety and Intellectual Property Rights	3
	<b>Total</b>	<b>15</b>

## **BRAC Business School**

The BRAC Business School began its journey in 2001 as a department within BRAC University before being turned into the school in 2006. Within this short period the school has made its mark as a centre of excellence in the academic and business community through a rigorous, discipline-based approach to business education. The goal of the school is to transform the students into confident and efficient professionals who can become leaders as they shape their organizations in this age of rapid discontinuous changes.

The school has four distinct programs i.e. BBA, MBA, EMBA and MBM catering to different segments of the market. Though the programs vary in pedagogy, they have one common goal of creating professionals for business organizations. The students go through various processes from class room lectures to interactive case sessions to delving in real life situations as they are attached to organizations for case work plus a semester long internship. The activities are further supplemented by industrial visits, special lectures by business professionals and a compulsory residential semester in a cross-disciplinary environment where students of different backgrounds participate and compete.

The Director leads the activities of the school with the support of the program directors of programs i.e., the BBA, MBA, EMBA and MBM. The faculty together with the staff creates an informal yet intense environment within which the students learn and grow.

### **DESCRIPTION OF PROGRAM**

#### **MASTER OF BUSINESS ADMINISTRATION (MBA)**

The MBA Program of BRAC Business School is designed for students who aspire careers in business, commerce and industry. These students are drawn from a wide spectrum of life, to enhance individuals capabilities in their respective area of work or start new business. Depending on the individual experience and knowledge level the duration of the program for an individual varies from just over a year to about three years. The curriculum is a careful blend of global business programs of repute adapted to the local environment so that at the end of the program the graduates can easily link up their education with their chosen vocation. Besides covering the basic elements of business, theory and practice, the students are helped to develop their abilities to perform in a wide range of sectors both within the country and abroad.

#### **Program Objectives**

The basic objectives of the MBA program is to enable the students to attain synergistic combination of knowledge, skill and experience as well as develop their insight and acumen, and build innovation and leadership ability.

On completion of the MBA Program, the graduates are expected to find executive positions in different organizations, or work independently as entrepreneurs. The emphasis is given on the following individual character traits:

- Think creatively and take sound decisions;
- Communicate effectively;
- Lead, negotiate and motivate;
- Work well with people

### Program Features

- A skill based, 60 credit (20 courses and an Internship) program
- Hands-on learning and exposure to business environment
- Professional, career and leadership development
- Full-time or part-time registration
- Classes and workshops held in the evening
- Faculty from home and abroad with teaching and managerial experiences
- Scholarships and financial assistance for deserving students
- Career guidance and Job placement assistance after graduation

### Degree Requirements

For graduation, an MBA student must complete the requisite number of credits of course work and meet other requirements depending on the program in which he/she is enrolled and must maintain a CGPA of 2.50 throughout the program. The University, however, reserves the right to refuse the awarding of degree on disciplinary or similar grounds.

Specifically, the MBA degree requires completion of:

- 12 compulsory totaling 36 credits in core courses of business.
- 4 courses from one functional area for declaring major equaling 12 credits.
- 3 elective courses equaling 9 credits from the major area
- 1 capstone course-Strategic Management of 3 credits.
- Internship/ dissertation with at least "C" grade (non credit)
- A minimum CGPA of 2.5 through out the program
- A satisfactory record of conduct and behavior.

A Full Time MBA student can receive a maximum exemption of 9 courses totaling 27 credits, subject to the following:

- Courses in which the student is seeking exemption should have a minimum grade of B
- Exemptions also depend on the discretion of equivalence committee.
- No exemptions can be obtained in any courses in the functional area of Major, Capstone course and course related to major area in the core compulsory.

### Program Structure

The structure of the MBA Curriculum is presented in the following table:

Areas	No of Courses	Credit Hours (Non Credit)
1 Foundation Course (Non Credit)	4*	
2 Core Courses	12	36
3 Functional Area Courses	4	12
4 Capstone Course (Integration & Overview)	1	3
5 Concentration Courses (Electives)	3	9
6 Internship (Non Credit)		
<b>Total</b>	<b>20</b>	<b>60</b>



A student may also get an exemption in the Foundation (non credit) courses provided he/she takes a comprehensive exam before the program in order to prove his/her expertise in the foundation courses.

### **Foundation Courses**

These courses are given in order to equip the MBA students with some basic knowledge on combined business subjects prior to starting the main Program. The completion of the courses will help the students to form a sound foundation of business knowledge that will be required in order to grasp the more sophisticated matter in the Business Administration studies.

### **Core Courses**

These are the fundamental and core courses of business. These courses enable the students to master the language and concepts of business, use tools and techniques of analysis and familiarize themselves with the environment of the business. Functional courses are also included here that focus on the internal operations of business organizations. The students will be familiarized with the activities, issues and decisions involved in each function and how to manage the function effectively so that they contribute to the overall business performance and profit. Finally, after most core and major courses have been completed, student will take the capstone course of Strategic Management that helps the students integrate insight across core courses and functional areas and gain an understanding of the entire business in its environmental context and formulate strategies and policies for the company to attain competitive advantage.

### **Functional Courses**

The MBA students are required to do these courses in order to be informed about the areas, which run side by side of business. The thorough knowledge in these areas is necessary in order to carry out business more efficiently.

### **Concentration Courses (Major)**

The concentration course enables students to specialize in their chosen field of business. BRAC Business School offers the following areas for business concentration as a major or minor.

#### **Bank Management**

In addition to learning different banking procedures and practices, the concentration will include the techniques that are useful to corporations, organizations, and individuals in minimizing the potential financial losses arising from their exposure to risk. Students will be prepared for positions with national and multi-national banks, insurance companies, and corporate risk management departments.

#### **Entrepreneurship**

This concentration will shape the future entrepreneurs to understand the concepts and practical issues one will deal with. It provides a diverse set of options for students to hone their entrepreneurial skills.

#### **Financial Management**

Concentrating in this area enables the students to a broad exposure to financial markets and acquaintance with the tools financial managers use. It aims to prepare students for careers in commercial or investment banking, non-banking financial institution and corporate houses.

#### **Human Resource Management**

This is a growing area of study and practice in Bangladesh. Students concentrating in this field will learn different personnel management techniques, regulations regarding labor and human

rights and overall management of the human resource.

### **Information Technology & System Management**

The students will learn the use of computers in organization; Organizing and staffing the information system functions; Contingency Management & the MIS function; Planning and administration; control and evaluation; Technology trends and implications; Computer capacity planning; managing systems Development; Hardware and Software acquisition etc.

### **Marketing Management**

This popular concentration offers a solid ground for understanding consumer and organizational buying patterns, as well as practical experience in area such as new product development, advertising, and retailing. Students are prepared for work in brand management, sales marketing research and consulting, as well as entrepreneurial ventures.

### **Operations Management**

Here students will focus on effective planning, scheduling, use and control of a manufacturing or service organization through the study of concepts from design engineering, industrial engineering, management information systems, quality management, production management, and inventory management. Students will be prepared for positions in the business field of production and telecommunication.

### **Internship**

After a student has completed all the required courses for the program, he/ she is sent for internship. The internship aims at providing an on-the-job exposure to the students and an opportunity for translation of theoretical concepts in real life situation. Students are placed in business enterprises, NGOs and research institutions as suitable. The duration of the internship program is 12 weeks: 10 weeks of organizational attachment and 2 weeks of report finalization work. The passing grade of the internship is C. Failure to obtain passing grade requires the student to repeat the internship.

### **List of Courses**

#### **Foundation Courses (Non credit)**

ENG 092 Basic Course in English Language  
CSE 093 Basic Course in Business Computing  
MAT 091 Basic Course in Mathematics  
STA 091 Basic Course in Statistics

#### **Core Courses (Each course carries 3 credits)**

*(Students will choose 36 credits in consultation with their academic advisers)*

ACT 501 Financial Accounting & Analysis  
ACT 502 Managerial Accounting & Control  
BUS 501 Business Law  
BUS 502 Managerial Communication  
BUS 503 Environment and Business  
BUS 505 Business Statistics  
BUS 506 Research Methods in Business and Management  
BUS 510 International Business and Management  
ECO 501 Managerial Economics  
ECO 502 Macroeconomics & Business Forecasting

MAT 501 Mathematics for Decision-making  
MGT 501 Management of Organizations & Systems  
MGT 521 Organizational Behavior & Leadership  
MSC 640 Information Management  
MSC 649 Advanced Computer Programming

**Functional Area Courses** (*Compulsory for all students*)

FIN 501 Financial Management  
MGT 522 Human Resource Management  
MKT 501 Marketing Management  
MSC 601 Operations Management and Policies

**Capstone Course** (*Compulsory for all students*)

MGT 601 Strategic Management

**Concentration Areas**

(A student seeking concentration must complete 9 credits in the selected area. A concentration area will be offered only when at least five students register in the course and suitable course teachers are available)

- Bank Management
- Entrepreneurship
- Financial Management
- Human Resource Management
- Information Technology & Systems Management
- Marketing Management
- Operations Management

DESCRIPTION OF PROGRAM

**MASTER IN BANK MANAGEMENT (MBM)**

**Introduction**

The MBM Program of BRAC University is a skill based, 60-credit (20 courses and an internship) two-year full time program. A student may also enroll in the MBM Program as a part timer but in that case, completion of graduation requirement will take a longer time depending on the number of courses taken.

**Graduation requirements**

Students enrolled in the MBM program of BRAC Business School have to complete a 60-credit hour course requirement as laid down in the structure and curriculum of this prospectus with a minimum cumulative grade point average (CGPA) of 2.50 in order to obtain an MBM degree from the university. Students have to maintain a minimum CGPA of 2.50 every semester. Students falling short of this minimum CGPA requirement will be on probation. Failure to maintain a CGPA of 2.50 or above for three consecutive semesters will result in cancellation of admission. The internship in the MBM program is a mandatory non-credit requirement for graduation. A student has to obtain a minimum grade of C on internship to be considered satisfactory.

### Structure of the MBM Curriculum

The MBM Program is divided into a number of areas as shown in the following table. The students are expected to follow the given sequence as they move from the Foundation to the Concentration areas.

Areas	No. of Courses	Credit Hours
Preparatory*	4	Non credit
Foundation**	8	24
Core	8	24
Capstone Course	1	3
Concentration (Electives)	3	9
Total	24	60
Internship	Compulsory	Non-credit

\*Course waiver may be applicable.

\*\* Course waivers may be applicable as per University rules.

### Preparatory Courses

The MBM students come from diverse educational and professional background. The foundation courses are offered to help them either refresh or make up deficiency in the area so that they can begin the formal coursework on an equal footing with their classmates. These courses are offered in English language, Mathematics, Business Computing and Statistics. A student may be required to take one or more foundation courses to make up his/her deficiency in the area. Each foundation course is treated as equivalent to 3 credits for assigning class loads but these are not included in credit calculation. The students must, however, pass each course.

- ENG 092 English Fundamentals
- ITS 093 Basic Course in Business Computing
- MAT 091 Fundamentals of Mathematics
- STA 091 Basic Course in Statistics
- BNK 091 Fundamentals of Banking

### Foundation Courses

The Foundation courses enable students to master the language and concepts of business and management and familiarize them with business environment. The courses also help them learn uses of tools and techniques for analysis of business and environment. Exemption from one or more foundation courses may be given if a student (i) has passed these or similar courses at the undergraduate or graduate level, and acceptable to BRAC University or (ii) can demonstrate a good grasp of the subject at a written test and interview.

- ECO 501 Managerial Economics
- ECO 502 Macroeconomics and Business Forecasting
- BUS 509 Quantitative Methods in Business
- ACT 501 Financial Accounting
- BUS 502 Managerial Communications
- MGT 503 Management of People & Organization
- FIN 501 Financial Management
- FIN 502 Financial Institutions

### **Core Courses**

The core courses familiarize the students with the functions and operations of banks; help master the language and concepts of banking, use tools and techniques of analysis. Exemption from one or more core courses may be given if a student (i) has passed these or similar courses at undergraduate or graduate level and acceptable to BRAC University or (ii) can demonstrate a good grasp of the subject at a written test and interview. The list of the core courses is provided below.

- BNK 601 Banking Law and Practice
- BNK 604 Commercial Bank Management
- BNK 605 Foreign Trade and Foreign Exchange
- BNK 606 Central Banking and Commercial Bank Supervision
- BNK 607 Electronic Banking
- BNK 608 Marketing of Bank Services
- BNK 609 Risk Analysis and Management of Financial Institutions
- BNK 610 Treasury Management

### **Capstone Course**

BNK 619 Strategic Management of Banks, a 3-credit capstone course, helps students integrate insight across foundation and core courses, gain an understanding of the entire banking business in its environmental and organizational context and formulate strategies and policies for the bank to attain competitive advantage and growth.

### **Concentration Area Courses**

The concentration area courses enable students to specialize in his chosen field. MBM Program offers concentration in Banking, Financial Management, Micro finance and Information Technology. If a student completes 9 credits of elective courses in a concentration area, he can claim it as his area of concentration. However, a student has the choice of not concentrating in any area and may choose courses equaling 9 credits from different areas. The concentration area courses are listed below.

#### **Area: Banking** *(any 3 courses, 3 credits each)*

- BNK 621 Corporate Planning in Banks
- BNK 622 Ethics in Banking and Legal Environment
- BNK 623 Investment Banking
- BNK 624 Banking and Financial Innovations
- BNK 625 International Banking
- BNK 626 Bank Financial Analysis
- BNK 627 Islamic Banking
- BNK 628 Special Banking Issues
- BNK 629 Management of Specialized Banks

#### **Area: Financial Management** *(any 3 courses, 3 credits each)*

- FIN 620 Financial Analysis
- FIN 621 Corporate Finance
- FIN 624 Investment Management
- FIN 625 Portfolio Management of Financial Assets
- FIN 630 Project Preparation and Appraisal
- FIN 641 Fixed Income Securities and Interest Rate Derivatives
- FIN 642 Financial Engineering

**Area: Micro finance** (*any 3 courses, 3 credits each*)

- BNK 631 Micro finance
- BNK 632 Accounting for Micro finance and NGOs
- BNK 633 Advanced Topics in Micro finance
- BNK 634 Strategic management of Not-for-Profit Organizations
- BNK 635 Management of NGOs

**Area: Information Technology** (*any 3 courses, 3 credits each*)

- ITS 510 Management of Information System
- ITS 501 Computer Programming
- MSC 641 Data Base Management
- MGT 647 Management of Information Technology

**Other Courses:** (*3 credits each*)

An MBM student may choose to take additional courses outside the 60-credit graduation requirement if he/she wishes to broaden his/her knowledge base in the field of research methodology, entrepreneurship, and small and medium enterprise management.

- STA 510 Research Methodology
- BUS 521 Entrepreneurship Process and Principles
- BUS 623 Small and Medium Enterprise Management

**Internship**

The internship program gives the student an opportunity to acclimatize himself in bank's work environment, translate his learning into practice and refine his problem-solving skill through a project work. For internship, the students will be placed in selected banks or financial institutions for eight weeks. On completion of the internship, the student will prepare and defend an internship report. An in-service student will not require placement in organization; s/he will submit and defend an internship report. Alternatively, a student may pursue a research project on selected topic approved by the University and write and defend a dissertation. Internship carries no credits but a student has to pass it by obtaining at least C grade.

## DESCRIPTION OF PROGRAM

### **EXECUTIVE MBA (EMBA)**

The Executive MBA of BRAC Business School is designed for students who want to enhance the managerial and analytical skills of Managers in both the public and private sectors. It incorporates both a thorough grounding of recent changes in business practice and theory in each of the functional areas of business (accounting, finance, management, and marketing), as well as leading edge knowledge in more specialized topics such as entrepreneurial skills, small business management, and global business. The program prepares students to take a leading role in creating, managing and directing private businesses, and leading governmental and non-governmental organizations in the public and private sectors. During the program, students gain the confidence, skills, networks and knowledge which needs to make an impact on your organization. The pedagogy is different as more emphasis is given on case-based teaching. The main difference of the EMBA program from the existing MBA is the student profile, i.e. more mature students with an adequate job experience. Whether your goal is to progress within your organization, take on new roles and responsibilities or pursue an entrepreneurial route, the program will give you the knowledge, insights and confidence to succeed.

### **Objective**

The Executive MBA Program at the BRAC Business School aims at providing hands-on knowledge and skills to corporate executives for enhancing their managerial capabilities for making effective contribution to national growth and development.

## **REQUIREMENTS FOR THE PROGRAM**

### **Eligibility for Admission**

Candidates applying for admission into the EMBA program must fulfil the following academic and professional requirements.

- Minimum graduation equivalent to four-year bachelor degree with a minimum CGPA of 3.00, which may be replaced by either of the following
  - ❖ A three-year honours with a one-year masters degree with a minimum 2<sup>nd</sup> class in both
  - ❖ A two-year bachelor with a two-year masters degree with a minimum 2<sup>nd</sup> division/class in both.
- Minimum 2<sup>nd</sup> division in both SSC and HSC examinations.
- Demonstrated ability to speak, read, and write English.
- Minimum 5 years of full-time professional experience in a junior to mid-level executive positions.

### **Graduation Requirements**

Students enrolled in the EMBA Program of BRAC Business School is a 45 credit program as laid down in the structure and curriculum of this prospectus. Students have to secure a cumulative grade point average (CGPA) of minimum 2.50 throughout the course of the program in order to obtain an EMBA degree from the university. Students falling short of this minimum CGPA requirement will be placed on probation. Failure to maintain a CGPA of 2.50 or above for three consecutive semesters will result in automatic cancellation of admission.

### **Waiver Policy**

Courses listed in the foundation level courses are available for waiver. Students applying for waiver in these courses must have completed these courses or their equivalent in a prior bachelor or masters level Program from a reputed institution with a minimum grade of B or equivalent. The decision of the university's equivalence committee in this regard will be final.

## STRUCTURE OF THE CURRICULUM

The EMBA curriculum consists of foundation courses, core courses, a capstone course, a host of elective courses for a number of concentration areas, and a free elective course. The structure of the EMBA Curriculum is presented in the following table and the list of courses is provided in a later section.

Areas	No. of Courses	Credit Hours
Foundation Courses	4	12
Core Courses	6	18
Capstone Course	1	3
Concentration Courses (Electives)	3	9
Free-elective	1	3
<b>Total</b>	<b>15</b>	<b>45</b>

### Foundation Courses

The foundation courses are designed to provide skills in general analytical, communication, and economics for understanding the basic premise of managing organisations. Courses incorporate fundamentals of mathematics and statistics, business communication, accounting, and economics.

### Core Courses

Core courses are developed to equip students with the knowledge of the major functional areas of managing business organisations. Core courses include courses in accounting, management of organisations and people, marketing, finance, and operations management.

### Capstone Course

The capstone course integrates the knowledge of the different functional areas of business for application in decision-making at the strategic level.

### Concentration Courses

Concentration courses allow students to acquire specialisation in any or more functional areas of business. Students have to complete 9 credit hours of coursework to obtain concentration in any of the functional areas that include Management and Human Resource; Marketing; Finance and Banking; and Operations Management.

### Free-Electives

Courses included in free-electives are intended to broaden the student's knowledge in contemporary, emerging, or specialised topics in business. Students will take 3 credit hours of courses of their choice from the prescribed list subject to fulfilment of prerequisite/s. Students may also select a course from any of the concentration courses subject to meeting the required prerequisite/s.

### The EMBA Program at a glance

The detailed format of the EMBA is provided in the table below and the attachment thereto. Some of the courses shown with asterisk are also listed in the MBA program. Although the content of the



common courses are the same, the pedagogy may vary. Yet the courses are shown jointly in the two programs for ease of understanding.

<b>Foundation</b>		<b>12 Credits</b>
MSC 503E	Quantitative methods for Business	3 Credits
ACT 501E	Accounting for Managers	3 Credits
BUS 502E*	Business Communication	3 Credits
BUS 504E	Business Economics	3 Credits
<b>Core</b>		<b>18 Credits</b>
MGT 501E*	Management of Organisation	3 Credits
MGT 502E*	Managing Human Resources	3 Credits
MKT 501E	Marketing Principles and Practices	3 Credits
FIN 501E	Managerial Finance	3 Credits
MSC 505E*	Managing Operations	3 Credits
BUS 510E*	Managing in the Cross-cultural Environment	3 Credits
<b>Capstone</b>		<b>3 Credits</b>
MGT 601E	Corporate strategy	3 Credits
<b>Concentration</b>		<b>9 Credits</b>
	Management & HR	3 X 3 Credits
	Finance & Banking	3 X 3 Credits
	Marketing	3 X 3 Credits
	Operations Management and Management Science	3 X 3 Credits
<b>Free-elective</b>		<b>3 Credits</b>
	List enclosed	3 Credits
<b>Total</b>		<b>45 Credits</b>

#### **Attachment: List of Concentration and Free-elective courses**

##### **List of Concentration Courses**

##### **Area of Concentration: Management and HR**

MGT 621E HR Planning and Development  
MGT 624E Management of Conflicts  
MGT 625E Industrial Relations  
MGT 629E Compensation Management  
MGT 648E Management of Change  
MGT 698E Contemporary Issues in Management and HR.

##### **Area of Concentration: Finance and Banking**

FIN 622E Capital Budgeting and Long-term Financing  
FIN 623E Financial Markets and Institutions  
FIN 624E Investment analysis and Capital Markets  
FIN 628E International Financial Management  
FIN 631E Working Capital Management and Short-term Financing

- FIN 642E Central Bank and Commercial Bank Management  
FIN 698E Contemporary Issues in Finance and Banking

**Area of Concentration: Marketing**

- MKT 621E Brand Management  
MKT 622E Service Sector Marketing  
MKT 623E Marketing Research  
MKT 625E Consumer Behaviour  
MKT 629E Sales-force Management  
MKT 632E Strategic Marketing  
MKT 698E Contemporary Issues in Marketing

**Area of Concentration: Operations Management and Management Science**

- MSC 628E Operations Research/Management Science  
MSC 510E Management Information System  
MSC 625E Quality Management and Control  
MSC 629E Business Logistics and Supply Chain Management  
MSC 643E E-Business  
MSC 623E Project Management  
MSC 630E Management of Technology  
MSC 698E Contemporary Issues in Operations Management

**List of Free-Electives**

- BUS 501E Legal Environment of Business  
MSC 510 Management of Information  
BUS 511E Corporate Governance  
BUS 512E Business Ethics and Corporate Social Responsibility  
ACT 502E Accounting for Managerial Decisions  
FIN 510E Micro Finance  
MGT 623E Entrepreneurship and Small Business Management  
BUS 513E Business Research Methodology

## **School of Engineering and Computer Science Postgraduate Program Description**

The Department of Computer Science and Engineering was established in April 2001. The Department of Computer Science and Engineering is renamed as the School of Engineering and Computer Science in 2009. Under the School of Engineering and Computer Science, there are now two departments: the Department of Electrical and Electronic Engineering (EEE) and the Department of Computer Science and Engineering (CSE).

At present, the Department of Electrical and Electronic Engineering (EEE) offers the following Postgraduate degrees:

**Master of Science (M. Sc.) in Electrical and Electronic Engineering**  
**Master of Engineering (M. Engg.) in Electrical and Electronic Engineering**

### **Objective of the Degree**

The objective of the degree is to produce a well-informed and well-balanced graduate who can use electronic / telecommunication / power system engineering tools to solve real world problems. Students would be trained in research methodology, so that they can contribute towards creation of new knowledge. In designing the course, the requirements of IEEE and curricula of North American and European universities and institutes have been taken into consideration.

### **Structure of the Masters Degree (M. Sc./M. Engg.) in Electrical and Electronic Engineering**

Courses required for the Masters Degree in Electrical and Electronic Engineering with major in Telecommunication/Electronics/Power System consist mainly of electronics/telecommunication/power system core courses, elective courses and a project/thesis. Each student is required to successfully complete a minimum of 36 credit hours with a minimum CGPA of 2.65 out of 4 to graduate. A student may also complete an optional non-credit Internship course. The duration of internship will be a maximum of 8 weeks. A student may also be required to take remedial and supplementary non-credit courses to improve study skills, presentation and communication skills. The minimum duration of the M.Sc./M.Engg. program shall normally be three semesters. Maximum duration to complete the program is five years from the date of first admission in the program. Full time students must register for a minimum of 9 credit hours and a maximum of 15 credit hours per semester. A part time student may register for a maximum of 6 credit hours of course in any semester.

### **Credit distributions for M.Sc./M.Engg. Degree in Electrical and Electronic Engineering are as follows:**

M.Sc. in Electrical and Electronic Engineering  
Courses = 18 credits  
Thesis = 18 credits

M.Engg. in Electrical and Electronic Engineering  
Courses = 30 credits  
Project = 6 credits

Students of M.Sc./M.Engg. in Electrical and Electronic Engineering with major in Telecommunication or Electronics or Power System have to take minimum three core courses from major area and three elective courses from course areas, outside the area of major.

Students intending to do major in Telecommunication will take at least three core courses from the following list of courses and will take at least three elective courses from multiple course areas outside the area of Telecommunication:

- EEE 510 Signals, Systems and Stochastic Process (3 credits)
- EEE 511 Cellular Mobile Communication (3 credits)
- EEE 512 Telecommunication Transmission Technologies (3 credits)
- EEE 513 Communication Services Networks (3 credits)
- EEE 514 Optical Communication System (3 credits)
- EEE 520 Advanced Digital Communications (3 credits)

Students intending to do major in Electronics will take at least three core courses from the following list of courses and will take at least three elective courses from multiple course areas outside the area of Electronics:

- EEE 510 Signals, Systems and Stochastic Process (3 credits)
- EEE 540 Advanced Semiconductor Devices (3 credits)
- EEE 541 Advanced VLSI Design (3 credits)
- EEE 542 Digital Signal Processing (3 credits)
- EEE 543 Power Semiconductor Circuits and Drives (3 credits)
- EEE 550 Advanced CMOS Technology (3 credits)

Students intending to do major in Power System will take at least three core courses from the following list of courses and will take at least three elective courses from multiple course areas outside the area of Power System:

- EEE 560 Optimization of Power System Operation (3 credits)
- EEE 561 Advanced Protective Relays (3 credits)
- EEE 562 Power System Stability (3 credits)
- EEE 563 Power System Planning (3 credits)
- EEE 564 Advanced Machine Design (3 credits)
- EEE 574 Modern Control Theory (3 credits)

Students intending to do M.Engg. degree with major in Telecommunication or Electronics or Power System will take four additional courses with their three core and three elective courses.

### **Thesis/Project**

In addition to successful completion of course works every student shall submit a thesis/project on his/her research work, fulfilling the requirements as detailed below.

Every candidate submitting a thesis/project in partial fulfilling of the requirements of a degree, shall be required to appear at an oral examination, on a date or dates fixed by the chair of the department and must satisfy the examiners that he/she is capable of intelligently applying the results of this research to the solution of problems, of undertaking independent work, and also show evidence of satisfactory knowledge related to the theory and technique used in his/her research work.

### **Admission Criteria**

A student must have B.Sc. in Electrical and Electronic Engineering / Electrical Engineering / Electronic and Telecommunication Engineering / Electronic and Communication Engineering or equivalent degree in related areas. Students having B.Sc. degree in Computer Science / Computer Science and Engineering need to take a number of undergraduate prerequisite courses listed below. A number of courses may be waived if the candidate has already completed equivalent courses. The student must have a minimum CGPA of 2.50 out of 4 or at least a second class in B.Sc.

### **List of Undergraduate Prerequisite Courses**

- EEE 201 Electrical Circuits I (3 credits)
- EEE 203 Electrical Circuits II (3 credits)
- EEE 205 Electronic Devices and Circuits I (3 credits)
- EEE 207 Electronic Devices and Circuits II (3 credits)
- EEE 209 Semiconductor Devices and Materials (3 credits)
- EEE 211 Digital Logic Design (3 credits)
- EEE 221 Energy Conversion I (3 credits)
- EEE 223 Energy Conversion II (3 credits)
- EEE 241 Electromagnetic Waves and Fields (3 credits)
- EEE 243 Signals and Systems (3 credits)
- EEE 301 Digital Electronics and Pulse Techniques (3 credits)
- EEE 321 Power System I (3 credits)
- EEE 341 Introduction to Communication Engineering (3 credits)

### **List of M.Sc./M.Engg. Courses**

- EEE 500 Thesis (18 credits)
- EEE 501 Project (6 credits)
- EEE 502 Internship (non-credit)
- EEE 510 Signals, Systems and Stochastic Process (3 credits)
- EEE 511 Cellular Mobile Communication (3 credits)
- EEE 512 Telecommunication Transmission Technologies (3 credits)
- EEE 513 Communication Services Networks (3 credits)
- EEE 514 Optical Communication System (3 credits)
- EEE 520 Advanced Digital Communications (3 credits)
- EEE 521 Digital Wireless Communications and Networks (3 credits)
- EEE 522 Telecommunications Business Environment (3 credits)
- EEE 523 Network and Services Management (3 credits)
- EEE 524 Mobile Communication System Planning (3 credits)
- EEE 525 Communications Systems Modeling (3 credits)
- EEE 530 Broadband Networks (3 credits)
- EEE 531 Data Network Protocols (3 credits)
- EEE 532 Network Security (3 credits)
- EEE 533 Wavelets and Applications (3 credits)
- EEE 534 Advanced Data Communication (3 credits)
- EEE 535 Information Theory, Coding, and Detection (3 credits)
- EEE 540 Advanced Semiconductor Devices (3 credits)
- EEE 541 Advanced VLSI Design (3 credits)
- EEE 542 Digital Signal Processing (3 credits)
- EEE 543 Power Semiconductor Circuits and Drives (3 credits)
- EEE 550 Advanced CMOS Technology (3 credits)
- EEE 552 Laser Theory (3 credits)
- EEE 554 Application Specific Integrated Circuit Design (3 credits)
- EEE 555 Fundamentals of Nanoelectronics Technology (3 credits)
- EEE 560 Optimization of Power System Operation (3 credits)
- EEE 561 Advanced Protective Relays (3 credits)
- EEE 562 Power System Stability (3 credits)

- EEE 563 Power System Planning (3 credits)
- EEE 564 Advanced Machine Design (3 credits)
- EEE 570 Transients in Power System (3 credits)
- EEE 571 Reliability of Power System (3 credits)
- EEE 572 Modern Power System Modeling (3 credits)
- EEE 573 Generalized Machine Theory (3 credits)
- EEE 574 Modern Control Theory (3 credits)
- EEE 580 Computer and Machine Vision (3 credits)
- EEE 581 Speech Recognition (3 credits)
- EEE 582 Image and Video Compression (3 credits)
- EEE 590 Special Topics (3 credits)
- EEE 591 Independent Study (3 credits)

## **James P Grant School of Public Health**

### **Master in Public Health**

#### **The James P Grant School of Public Health (JPGSPH)**

With the mission of improving the "health outcomes of populations in disadvantaged areas of the world, with particular focus on the poor and women, through the application of the arts and sciences of public health" the James P Grant School of Public Health at BRAC University was launched in 2004 with an innovative international Master in Public Health (MPH) Program. With a view to promote its vision of a "world where everyone enjoys the maximum potential of health", JPGSPH has continued to expand its program.

#### **Master in Public Health (MPH) Program**

Since its first programme began in 2005, it has had a total of 106 students from 15 countries in Asia, Africa, Europe, and the Americas graduated from the flagship program of the School - the Master in Public Health (MPH), an innovative, community-based experiential learning program encompassing the sciences and arts of public health in a developing country setting. The MPH graduates of the School are now employed in government, national and international NGO's, UN agencies, and universities. Some of them have started their PhD's in European and North American universities. Currently (2009) another 30 students - 16 from Bangladesh and 14 from eleven countries of Asia, Africa, Europe and North America - are enrolled in its MPH Program that was listed as one of the most innovative educational program in public health by the World Health Organization.

#### **Continuing Education Programme**

Introduced in 2007, the goal of the Continuing Education Program (CEP) is to widen the reach of the School and provide public health education and training to a larger audience through subject-specific short courses. The short courses are aimed at building the capacity of public and private sector health professionals. In May 2009, the CEP introduced a 7- week long Executive Certificate in Public Health Management (ECPHM) exclusively to further enhance the management capacity of public sector health officials. Some of these short courses are supported by funding from the World Health Organization (WHO), German Technical Assistance (GTZ), and AusAID. So far more than 250 health professionals from the public and private sectors including a large number of NGOs have received training through these short courses.

#### **Research**

The JPGSPH has a large growing research portfolio. Funded by external sources including Department for International Development (DFID), Global Fund to Fight against AIDS, Tuberculosis and Malaria (GFATM), Canadian International Development Agency (CIDA), Swedish International Development Agency (SIDA), the European Union (EU), the U.S.-based National Institutes of Health (NIH), World Health Organization (WHO), UNAIDS, and International Women Health Coalition New York (IHCN); the diversity of research projects include subjects like comprehensive primary health care, gender and sexuality, tuberculosis, social determinants of health, chronic diseases, and nutrition. In its research endeavor, the School often works in partnership with the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), the Population Council and other international and national organizations. A comprehensive list of the School's different partnerships with international and national institutions is provided below:

- African Population and Health Research Centre, Kenya
- Association for Social Development (ASD), Islamabad, Pakistan
- Beijing National and Guangxi Provincial Centres for Diseases Control
- BRAC, Bangladesh
- Concerned Women for Family Development (CWFD), Bangladesh
- CREA, India
- Department of Clinical Medicine, Makerere University, Kampala, Uganda
- EngenderHealth, USA
- INDEPTH Network, Ghana
- Institute of Development Studies, University of Sussex, UK
- International Centre for Diarrhoeal Disease Research (ICDDR,B), Bangladesh
- Karolinska Institutet, Sweden
- London School of Hygiene and Tropical Medicine, UK
- National Institute of Preventive and Social Medicine (NIPSOM), Bangladesh
- NIPORT, Bangladesh
- PIACT, Bangladesh
- Population Council, Bangladesh
- School of Medical Sciences, Kwame Nkrumah University of Science and Technology (KNUST), Ghana
- Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India
- The Australian National University, Australia
- The Good Shepherd Hospital/Lubombo Regional Health Department, Swaziland
- The Health Research and Social Development Forum (HERD), Nepal University of Amsterdam, The Netherlands

### Centres

With a view to streamline and further strengthen its research and capacity building efforts, the School has established two centres:

- 1. Centre for Health Systems Studies (CHSS):** The CHSH is geared towards conducting and promoting the generation, dissemination and utilization of knowledge in health systems.
- 2. Centre for Gender, Sexuality and HIV/AIDS:** This is an UNAIDS Collaborative centre for research and advocacy in diverse areas related to gender, sexuality and sexual rights, and HIV/AIDS.

### Advantages of the JPGSPH

The School immensely benefits from its partnerships with BRAC (one of the largest NGOs in the world), ICDDR,B (one of the most comprehensive research and training facilities on infectious and diarrhoeal diseases) and other established national institutions. Furthermore, the School has established MOU with several international schools of public health that provide an extensive access to a rich array of academic resources and faculty. Some of the partners are listed below:

- Bloomberg School of Public Health, Johns Hopkins University, USA
- Mailman School of Public Health, Columbia University, USA
- George Washington University, USA
- Harvard School of Public Health, Harvard University, USA
- International Centre for Diarrhoeal Disease Research (ICDDR,B), Bangladesh
- Karolinska Institutet, Sweden
- London School of Hygiene and Tropical Medicine, UK
- University of Amsterdam, The Netherlands

In addition, JPGSPH also draws faculty from the following institutions:

- Schools of Public Health from USA (George Washington University, University of Maryland, and University of Illinois at Springfield)



## Enrollment

The James P Grant School of Public Health has been established to respond to the pressing problems facing the health sector of the developing world. The School is keen to have a diverse student body representing different nationalities, academic backgrounds, and favorable gender balances to expand the scope and range of experiences, and in recognition of global inter-relatedness.

## Structure of the Programme

The MPH programme lasts for one year consisting of 51 credits.

Students will spend the first part of their programme (Block I) at the BRAC Training and Resource Centre (TARC) in Savar, a rural setting about an hour from Dhaka. It has pleasant surroundings with a large secure campus, dormitory facilities, common lounge with TV, kitchen and dining rooms, classrooms and access to a library and computers with internet connections. An orientation and tour of the TARC facilities is organized at the beginning of each course.

During the remainder of the programme (Block II) students will reside in Dhaka. The international students will stay in a student dormitory at Niketan, which is 15 minutes walk to ICDDR,B and JPGSPH main office. Bangladeshi students are expected to arrange for their own accommodation in Dhaka. The school will make decision on their accommodation depending on the availability of the rooms in the dorms and the situation of the individual students.

## Courses offered in JPGSPH

	Course Title	Course Number	Credit
REQUIRED COURSES: Block I			
1.	Introduction to Public Health	MPH	2
2.	Culture and Human Values in Public Health	MPH 511	2
	Qualitative Research Methods	MPH 512	3
	Anthropological approaches to Public Health		
3.	Community Diagnosis in Public Health	MPH 520	3
	Quantitative Research Methods	MPH 521	3
	Biostatistics	MPH 522	3
4.	Epidemiology		
	Managing Public Health	MPH 530	5
	Health System Management	MPH 531	2
5.	Health Economics & Health Care Financing		
	Environment & Health	MPH 541	3
INTENSIVE COURSES: Block II			
6.	Epidemiology of Infectious Diseases	MPH 620	3
7.	Health and Development (Seminars)	MPH 651	1
8.	Reproductive and Sexual Health and Rights	MPH 660	2
9.	Public Health Nutrition	MPH 670	2
10.	Aging and Health	MPH 681	2
11a.	Principles of Health Communication	MPH 690	1
11b.	Monitoring and Evaluation of Public Health Programme	MPH 691	
DISSERTATION: Block III			
12.	Independent study/ Thesis	MPH 700	14
	<b>Total Credits</b>		<b>51</b>

11a and 11b Courses are electives and students select either of the courses

**Block I** lasts for six months and consists of core courses necessary to develop fundamental competencies in public health, embracing the disciplines of medical anthropology, epidemiology and bio-statistics, qualitative and quantitative research methods, health system management, health economics and health care financing, and environment and health.

**Block II** lasts for three and half months and deals with public health practice during which several short courses are offered, covering specific areas of public health practice: epidemiology and control of infectious diseases, public health nutrition, ageing and health, reproductive health, health communication, sexual health, and monitoring and evaluation of public health programmes.

**Block III** lasts for two and a half months and consists of an independent field study in a chosen public health programme or problem that students carry out. The primary objective of this portion is of the program is to enable students demonstrate ability to synthesize and integrate knowledge gained in course work and other learning experiences through a culminating field work studying a public health program or activity. The outcome will be a dissertation to be submitted in partial fulfillment for the MPH degree.

#### **Field Visits**

Fieldwork is a critical and integral component of the MPH Programme. The students spend considerable time visiting a number of field sites in Savar and Dhaka. During the course of the MPH Programme, numerous sites were visited including urban slums, health facilities, hospital wards, pharmacies, various arsenic intervention sites, and different health organizations.

## BRAC Development Institute

BRAC Development Institute (BDI), at BRAC University, promotes research and builds knowledge on practical solutions to problems of the poor in the global South. It takes as its starting point the hugely successful and massively scaled up development interventions of BRAC, Grameen Bank, Gonoshasthaya Kendra, and many others in immunization, oral rehydration therapy, family planning, health awareness, non-formal primary schooling, microfinance, etc. BDI intends to build knowledge around such exciting initiatives in the South, develop new ideas and strategies, pilot test these and furnish practitioners, policy makers, and funders with important good practice lessons. Its core functions include:

- creating knowledge* : highlighting the innovative development experiences in the South and ensuring their visibility and voice in the global development discourse.
- convening experts* : providing a space for practitioners, academics and policy makers to come together to focus on specific problems of the poor and develop new strategies and pathways
- incubating ideas* : field testing specific ideas through pilots and distilling good practice lessons for adaptation and scale up
- advocating policy* : interfacing with policy makers to adopt pro-poor development strategies

### **BDI offers the following degree and certificate courses:**

- Master of Development Studies (MDS)
- Management of Land Acquisition, Resettlement and Rehabilitation (MLARR)
- An Introduction to Financial Services for the Poor

### **BDI also conducts research on following themes:**

- Economic Transformation
- Empowerment of Women
- Urban Poverty
- Democracy and Governance

## **Description of Degree & Certificate Courses and Research Themes**

### 1. Degree & Certificate Courses

#### **Master of Development Studies (MDS)**

##### **Introduction**

BRAC, the largest national development organization in Bangladesh and founder of BRAC University, has been active both in development operations in the field and in research since 1972. BRAC University shares the concern of BRAC for development and contributes to its effort by offering academic programs. Master of Development Studies is the most prominent academic program to this end. Development academics and professionals from home and abroad constitute the faculty members of MDS. Moreover, MDS frequently draws upon the vast human and field resources of BRAC for its courses.

## Objectives of the Program

The Masters in Development Studies (MDS) seeks to create professionals who have the conceptual clarity, analytical skills and academic knowledge to effectively address strategic and practical challenges in development. The program is designed to provide a rigorous and critical understanding of development theory and practice from a broad inter-disciplinary perspective. On satisfactory completion of the program, students will be able to approach and analyze development issues in the context of globalization, economic transformation, and social, cultural and political changes.

## The Students

As the program is a multi-disciplinary one, students are selected from different disciplines.

The student body includes:

1. Graduates and post-graduate diploma holders in development or related studies who want to deepen their understanding of the subject
2. Social science and other graduates who want to specialize in development studies
3. Professionals who are working in NGOs, development organizations or in the private sector with a development focus
4. Academics and researchers who want to refine their knowledge and research skills in development issues.

## Degree Requirements

The MDS degree requires:

1. Completion of three foundation courses;
2. Completion of six compulsory core courses totaling 18 credits;
3. Completion of at least three elective courses totaling 9 credits;
4. Completion of Research Concepts, Methods and Application courses of 9 credits;
5. Earning a CGPA of 2.5.
6. Maintaining a satisfactory record of conduct and behaviour.

## Structure of the Program

The Master of Development Studies (MDS) is a postgraduate program of 45 compulsory and 3 optional (thesis) credits. It consists of 3 Foundation courses (9 credits), 6 core courses (18 credits), 3 elective courses (9 credits), comprehensive courses on Research Concepts, Methods and Application (9 credits) and a thesis (optional). All MDS courses are three credit hour courses. In addition, a student may be required to take one or more preparatory courses if his/her undergraduate preparation is not deemed adequate for the program.

Following is the structure of the program:

Course Type	No. of courses	Credits
Foundation/Prerequisite courses	3	9
Core courses	6	18
Research Concepts, Methods and Application	3	9
Electives courses	3	9
Thesis (optional)	-	3
<b>Total</b>		<b>48</b>

## List of Courses

### Foundation Courses

The foundation courses are designed to build the basic multi-disciplinary knowledge base for the core courses. The current foundation courses are:

- DEV 300: Economics and Development
- DEV 301: Fundamentals of Social Science I- Sociology and Anthropology of Development
- DEV 302: Fundamentals of Social Science II- Politics, Political Economy and Government in Bangladesh

### Core Courses

These courses are designed to provide a thorough understanding of some of the core issues of development studies. Each course carries 3 credits and all the courses are compulsory:

- DEV 501: Development Perspectives
- DEV 502: Poverty-Concept, Measurement and Policy
- DEV 503: Global Dimensions of Development
- DEV 504: Rural Development
- DEV 505: Gender and Development
- DEV 506: Monitoring and Evaluation of Development Programs

### Research Concepts, Methods and Application

Each student will be required to take 3 courses on research concepts, methods and application each containing 3 credits. These courses will concentrate on concepts, methods and techniques of social science research. Students will get the first hand opportunity to apply the research tools and techniques. Each student will produce a research proposal and an extended essay on a chosen topic under the supervision of a Research Guide. The student will present and defend the proposal before a committee. A student maintaining a CGPA of 3.5 may choose to write a thesis (optional) if the proposal is satisfactory. The courses are as follows:

- DEV690: Research Methods and Concepts
- DEV 691: Statistics and Computer skill development
- DEV 692: Research Design and Proposal Writing
- DEV 693: Thesis (optional)

### Elective Courses

Each course carries 3 credits. At least 3 elective courses totaling 9 credits must be studied. A student may choose to concentrate in a specific area of study by opting for appropriate elective courses in consultation with his/her academic advisor. The elective courses are:

- DEV 601: Comparative Development Experience
- DEV 602: Development Informatics
- DEV 603: Education and Development
- DEV 604: Environment and Development
- DEV 605: Governance and Development
- DEV 606: Health and Development
- DEV 607: Indigenous Knowledge in Development
- DEV 608: Microfinance and Development
- DEV 609: Nationalism, Identity Politics and Development
- DEV 610: NGOs and Social Entrepreneurship
- DEV 611: Population and Development
- DEV 612: Project Appraisal and Management

DEV 613: The Rights based Approach to Development  
DEV 614: Technology and Development  
DEV 615: Urban Development  
DEV 616: Financial Management  
DEV 617: Law and Development  
DEV 618: Social Communication

### **Duration of the Program**

The duration of the program will vary depending upon the number of credits a student registers for. If a student registers for 12 credits every semester, the duration for him/her will be 4 semesters or sixteen months.

### **1.2 Postgraduate Certificate Course on Management of Land Acquisition Resettlement and Rehabilitation (MLARR)**

MLARR is a three-month postgraduate certificate course for government officials, private and public sector land developers, development practitioners and interested postgraduate students to build their skills and acquire training in land acquisition and resettlement to minimize social and environmental risks and better meet the needs of development affected people. MLARR ensures course participants can design, implement and develop resettlement and rehabilitation strategies based on global best practices. Students will acquire the necessary tools and techniques for carrying out complex development projects, including the communication skills required to manage project affected people within the existing legal frameworks and international standards.

### **Structure and Description of the Certificate Course**

The certificate course will be delivered in one semester, following the BRAC University academic calendar. The overall course duration is for 14 weeks, including project work, exams, and final evaluations. Moreover the certificate course will be delivered in the form of 7 thematic modules, each of which addresses specific issues of the land acquisition and resettlement practice and project cycle.

Module 1: Understanding displacement and sustainable development

Module 2: Policies and Law

Module 3: Consultation and Communication

Module 4: Social Impact Assessment

Module 5: Building a resettlement Action Plan

Module 6: Management of resettlement and rehabilitation projects

Module 7: Data management, monitoring and evaluation

### **1.3 An Introduction to Financial Services for the Poor**

This two week introductory course on financial services for the poor is targeted to those with little or no knowledge of microfinance. It is grounded in the experience of Bangladesh but provides a broad global picture of the state of microfinance, its emergence and challenges, the diversity of financial products on offer and the need to have a strong poverty focus. It is team taught, using different pedagogical methods, and includes extensive field visits.

### **Course Outline**

1. The emergence of microfinance: Bangladesh and Bolivia.
2. Financial inclusion and exclusion and the range of delivery models: NGO, credit unions, cooperatives, state and rural banks, specialized financial institutions, commercial banks, etc.

3. Sustainability and reaching the poor: balancing the twin objectives.
4. Operations of a microfinance institution
  - disbursement & collections
  - MIS systems
  - setting interest rates
  - planning for growth
5. The range of financial products: savings, credit, insurance, pension, money transfers, etc.
6. Microfinance impacts: household and macro level; how do MFI clients fare in the current global financial crisis.
7. The regulatory framework: how governments set microfinance policy and supervise MFIs.
8. Funding microfinance: donors, governments, social investors and the private commercial sector.
9. The future of microfinance: commercial players, branchless banking and the integration of the financial sector.

## **2. Description of Research Themes**

### **2.1 Improvements in Economic Conditions of the Poor**

A core area of BDI research will be on economic transformations. This will include setting up pilots in different countries to test out new models and new ideas. It will include dissemination of successful interventions at BRAC (especially BRAC's ultra poor program) and elsewhere. It will also include advocacy with policy makers and donors to adopt good practice lessons from successful programs. The following projects are starting:

- Graduating the poorest out of extreme poverty through linking social protection programs with access to financial services
- Building markets for the poor by creating effective value chains
- Extending appropriate financial services to the poorest
- Publishing an annual "State of Microfinance Report"

### **2.2 Empowerment of Women**

The core objective of the research is to understand what enables women to empower themselves and sustain changes in gendered power relations. The research concentrates on three themes – voice, work, and bodily integrity –to determine the processes and conditions that allow women to challenge inequality and identify and make visible previously unobserved processes of change in different countries. The research will also map out the social changes and transformations that have gone into the make up of the 21<sup>st</sup> century women in South Asia.

### **2.3 Urban Poverty**

BRAC Development Institute (BDI) has identified urban poverty and practical solutions to urban poverty as a critical element of its agenda. BDI has initiated an action research to pilot an integrated approach to poverty reduction and community engagement through research, action, learning, and partnership and participation.

The action research involving the Department of Architecture, BRAC University, NGOs and community groups, is focusing on building infrastructure such as drainage, roads, water supply, street lighting, etc, providing access to finance and livelihood opportunities, promoting housing and tenancy rights and ensuring good governance. BDI is also researching the links between climate change and urban poverty to ensure increased climatic resilience of urban poor.

## **2.4 Democracy and Governance**

Democracy and governance research attempts to understand how best to create and implement mechanisms that lead to effective citizen engagement (specifically of the poor, of women and the marginalized) in local government, increased accountability over its resources and improved performance of Union Parishads. It also explores the mobilizing and mediating practices of grassroots development organizations to better understand how people gain citizenship and strengthen their engagement with the state.



## **Institute of Educational Development (IED-BRACU)**

The Institute of Educational Development, BRAC University (IED-BRACU) was established in July 2004 with the goal of developing professional capacities to support much needed changes in the education sector in Bangladesh and in the region. IED-BRACU, with its goal to contribute to the improvement of quality, equity and efficiency in the education system of Bangladesh, is focused on strengthening the knowledge base, and promoting the application of these to educational development in Bangladesh, through its academic and training, research and development and advocacy programmes.

IED-BRACU offers degrees on:

**Postgraduate Certificate, Diploma & Masters in Early Childhood Development**

**Masters (MEd)/Postgraduate Diploma (PGD) in Educational Leadership, Planning and Management**

IED-BRACU has the first and only academic centre in Bangladesh at present working in the field of Early Childhood Development. The *Postgraduate Certificate, Diploma & Masters in Early Childhood Development* has been introduced since there is an enormous need of skilled professionals in the field of ECD in Bangladesh. The MEd/PGD in *Educational Leadership, Planning and Management* aims to build professional capacity in the national education system, particularly in primary and secondary education. Better educational leadership has become a key issue throughout the world. In Bangladesh, we need educational leaders who will lead organisations that can respond to the challenges of today's world. IED-BRACU has developed the courses with the help of national and international faculties from Columbia University, Victoria University, Yale University, Portland State University, University of Manchester, George Washington University and University of Massachusetts. Individuals involved with the public sector are especially encouraged to apply.

### DESCRIPTION OF THE PROGRAMS

#### **POSTGRADUATE CERTIFICATE, DIPLOMA & MASTERS IN EARLY CHILDHOOD DEVELOPMENT**

Those working research, development, pedagogy and management in the field of early childhood education, will benefit from this program. This Academic degree program is a joint collaborative initiative of IED, BRAC University, Open Society Institute (OSI) UK and Columbia University, USA. The course combines a Postgraduate Certificate, a Postgraduate Diploma and a dissertation. Successful completion of all these leads to a Master Degree in ECD. A team of national and international faculty have worked together to design the curriculum combining theory, practice, research and national and international perspectives.

#### **Admission /Entry Requirements**

The minimum academic requirement for all applicants is a bachelor degree in education, health or a related social science from a recognized university. Since English is the medium of instruction, all applicants must also take an English placement test for their application to be considered. Applicants will be selected based upon an interview process including a review of both academic and professional experience. It is desirable that applicants have at least 3 years of relevant work experience.

## Structure of the programme

The Postgraduate Certificate Programme is six-months long and consists of 15 credits. It offers 5 courses and each course is of 42 credit hours of class room activities and 66 credit hours of field work and assignments. Classes are held in the evening. After completing the certificate program, students may apply for the Postgraduate Diploma Programme which is five months long and consists of 12 credits. It offers 4 courses and each course is of 42 credit hours of classroom activities and 66 credit hours of field work and assignment. It will be an evening programme. After the completion of the Postgraduate Certificate and Diploma Programmes, those wishing to acquire the Masters in Early Childhood Development will take an additional course and submit a dissertation.

Course no.	Course title	Credits	PGC	PGD	MA
ECD 521	Foundations of Child Development	3			
ECD 522	A Framework for Designing Early Childhood Programmes	3			
ECD 523	Play and Creativity	3			
ECD 524	School Readiness	3			
ECD 525	Working with the Families	3			
ECD 526	Contemporary Issues in Child Development	3	×		
ECD 527	Individualized Teaching and Learning	3	×		
ECD 528	Policy Development and Advocacy	3	×		
ECD 529	Research Methods: An introduction to Basic Principles	3	×		
ECD 530	Research Method: Advanced Seminar	3	×	×	
×	Masters Dissertation	9	×	×	
<b>Total credits to be completed</b>			<b>15</b>	<b>27</b>	<b>39</b>

## Dissertation

Each Master level student will be assigned a dissertation supervisor. Working with a supervisor is an important element of the dissertation process. Initial guidance on the selection of a dissertation topic and a supervisor will occur during the Advance Research Seminar.

## Teaching Methods

Each course is a combination of classroom instruction complemented by several assignments, independent and supervised self-study. In class instruction is active and participatory using a wide range of interactive teaching methods including presentations, debates, case studies, critical analysis and reflection. The self-study component includes readings and short papers, design and application of learning materials, site visits to children centers and programmes. Depending on student interest, the self study can be tailored to address particular areas of interest and study. The international faculties in this program are known worldwide for their contribution in the field of ECD and have vast experience in using interactive and participatory method of teaching and learning.

## **MASTERS (MEd) AND POSTGRADUATE DIPLOMA (PGD) IN EDUCATIONAL LEADERSHIP PLANNING AND MANAGEMENT**

MEd and PGD is offered as a joint programme. This course is contextualized to the Bangladesh situation with special emphasis on education development efforts and reforms, and increasing efficiency and performance of the system. The programme aims at enhancing the capacity of mid-career, working professionals by developing their competencies in a variety of areas, including leadership and management, academic and research, pedagogical knowledge. It hopes to enhance the students current positions and/or assist them in moving onto other leadership positions with their newly developed knowledge and skills offered by the programme.

### **Admission / Entry Requirements**

All applicants must hold at minimum a bachelor degree from an accredited institution. They must possess fluency in written and spoken English. Proof of professional experience, a statement of purpose specifying why the applicant seeks admission to the programme and also the supply of two satisfactory references is required. Applicants will also have to agree to a programme specific interview.

### **Structure of the programme**

The MEd/PGD programme is designed in a flexible, modular delivery mode, each course following sequentially and concluding before the start of the next course. The instruction time for each course is based on its credit hours with 14 hours per credit. For administrative purposes, the courses have been grouped into three semester periods. Each course will be taught through a span of 3-5 weeks. Nine core courses for 24 credits is a basic requirement for both MEd and PGD students. For obtaining the MEd degree, a participant has to undertake an additional 12 credits with a research course and a masters thesis, thereby completing 36 credits. PGD requires a participant to complete 27 credits, including a school placement case study, to obtain the diploma. One year is required for completing the MEd, while nine months is required for the PGD.

<b>Course no.</b>	<b>Course Title</b>	<b>Credits</b>	<b>Med</b>	<b>PGD</b>
EDU 501	Educational Theories and Practices: A critique	2		
EDU 502	Leading Improvements in Education: Ongoing Work in Bangladesh	2		
EDU 503	Creating Learning Organizations: Leadership, Planning and Management	3		
EDU 504	Research Methods 1: Reading Research and Writing Reports	4		
EDU 505	Principles of Curriculum and the Development of Learning Materials	2		
EDU 506	Leaders as Learners: Leading People in Educational Institutions	3		
EDU 507	Leaders as Learners: How Children and Adults Learn	2		
EDU 508	Educational Measurement and Evaluation	3		
EDU 509	Whole School Improvement Approach: How Can We Make It Work?	3		
EDU 601	Improving Outcomes in Bangladeshi Schools: A Case Study	3	x	
EDU 602	Research Methods 2: Planning and Preparing Research	3		x
EDU 603	Masters Thesis	9		x
<b>Total credits to be completed</b>			<b>36</b>	<b>27</b>

### **Teaching Methods**

"Learning by doing" is at the core of the teaching-learning approach of the programme. It combines face-to-face sessions with individual study, preparatory time and assignments. Debates, group discussions and dialogue will also play a prominent role. The students shall also attend workshops, presentations and field trips. IED-BRACU has brought together a team of highly qualified and well-reputed national and international faculty members and resource persons, adding diversity and richness to the learning environment.

## **Institute of Governance Studies**

The twenty-first century poses new promises as well as threats to the developing world. Not only is an understanding of changes in globalization necessary, but the state must be effective in ensuring good governance as an essential prerequisite for sustainable development. In the context of Bangladesh, the discourse on governance is not merely an academic exercise but a means to understanding if and how the openness, transparency and accountability of the system will impact on the effectiveness of services delivered to the poor and marginalised. The Institute of Governance Studies at BRAC University (formerly known as Centre for Governance Studies) was established in 2005.

The mission of the Institute is to promote and support effective, transparent, accountable, equitable, and citizen friendly government in Bangladesh. In pursuit of this mission, the Institute is dedicated to understanding the strengths and weaknesses of governance in Bangladesh through research and academic pursuit. The Institute aims at 'bringing value to public life' through excellence in research, innovative training and teaching.

### **Core Programmes**

#### **Graduate Studies**

MA in Governance and Development (MAGD)

#### **Research**

Publication of annual 'The State of Governance in Bangladesh' reports

Public Policy Papers

Compliance and Gap Analysis of the United Nations Conventions Against Corruption (UNCAC)

National Integrity Strategy

#### **Projects**

Journalism, Training and Research Initiative s(JATRI)

Affiliated Network on Social Accountability, South Asia (ANSA-SA)

#### **Training**

Executive Training

#### **Postgraduate Studies**

##### **MA in Governance and Development (MAGD)**

This one-year residential post-graduate programme is designed to improve academic qualifications and build a constituency for good governance among the future leaders of Bangladesh. In an attempt to develop the future leaders of Bangladesh and transform them into advocates and catalytic agents of change the programme adopts a multi-disciplinary curriculum with courses drawn from a wide range of disciplines.

#### **The Students**

The MA in Governance and Development programme is offered to government officers/civil servants but is open to participation by executives from industry, NGOs, the media, and civil society in the future. IGS hopes to enhance their knowledge and capacity to contribute towards better governance in the country.

## Objectives

The MAGD programme prepares the students to confront the complexity of governance and development. On satisfactory completion of the programme, they will acquire the analytical capacity to examine issues of governance from a broad interdisciplinary perspective in the local and global context. Students will learn to articulate their views in an effective manner and to apply their knowledge to real world challenges. In addition to its core content, the programme offers a number of elective courses so that students can pursue their interests in accordance with their career objectives.

## Teaching Method

The programme emphasises participatory methods of learning like case studies, field visits, and interaction with experts and practitioners. Given the variety of courses offered, the programme also utilises lectures and discussions, panel sessions, debates, seminars, role-playing, project/group work, and independent research.

The faculty carefully selects the methods appropriate for the course objectives. As most current students come from active service within the public sector, emphasis is given to methods that help students think analytically and apply their knowledge in practice.

## Faculty

Qualified faculty from BRAC University and a number of partner institutions from home and abroad will teach the courses. Team-teaching may be used for multi-disciplinary courses or courses requiring both theoretical analysis and practical experience.

## Partnership with Institutions of Excellence

A number of world reputed academic institutions have been lined up for specific inputs in the form of faculty for the programme. The Institutions are: Kennedy School of Government (KSG) in Harvard University, Monash University in Australia, Key Centre of the University of Griffith in Australia, George Mason University of USA, Korean Development Institute School of Public Policy and Management, Seoul, Korea, University of Manitoba, Canada, and the University of Ulster, UK.

Foreign faculty from these institutions come to IGS to offer selected courses in the area of their expertise. The purpose of involving foreign faculty is to expose students to cutting-edge curriculum around which students will be encouraged to develop case studies on Bangladesh.

## Structure

The MA in Governance & Development programme, residential in nature, comprises of 36 credits to be completed in 3 full semesters in 12 calendar months. It consists of 5 Core Courses (15 credits, 3 credits each), 4-6 Elective Courses (12 credits, 2-3 credits each), and a Dissertation of 9 credits. In addition, students have to take non-credit preparatory courses in Principles of Economics and Basic Course in Computing.

Course Type	No of Courses	Credits
Preparatory	2	0
Core	5	15
Elective	4-6	12
Dissertation	1	9
<b>Total</b>		<b>36</b>

The Core Courses are:

- Introduction to Governance
- Economics for Public Leadership
- Strategic Management
- Lessons in Development
- Leading Issues in Governance in Bangladesh

The Elective Courses are grouped into the following Clusters:

- Global Policy Framework
- Enhancing Performance
- Building Partnership
- Accountability
- Inclusive Citizenship & Innovations

The Dissertation containing 9 credits will span all the three semesters. In the first semester, each student will be required to choose a topic for dissertation, get trained in writing skills in English, computer literacy and research methodology, write a research proposal and defend it before a Committee. In the second semester, a student will study relevant literature, write the survey chapter, the theoretical/methodology chapter and research design for collection of data. In the third semester, the student will collect, collate and analyze data, and complete a 30-40-page dissertation.

### **Academic System**

BRAC University follows a model of higher education consisting of semesters, courses, credit hours, continuous evaluation and letter grading.

### **Semester and Class Schedules**

There will be three regular semesters covering a period of one year. Each credit hour means one-hour class per week. Classes are held Sunday through Thursday. The duration of a class will usually be 90 minutes. Moreover, seminars/workshops/debates could also be held. The programme is a full time one and residential. If BRAC University authorities deem it necessary, part of the programme may be non-residential.

### **Course Numbering System**

Courses will be numbered in two parts: first part with alphabets GOV representing Governance, the central piece of the programme, and second part refers to the level of the course. Preparatory courses are numbered at 100 levels, core courses 500 levels and elective courses 600 levels, and Dissertation as 699.

### **Performance Evaluation**

The performance of the students will be evaluated throughout the semester by class tests, quizzes, and assignments: including group works and project report. Similarly participatory performance in the class will also be evaluated and marks assigned. Mid-term examination and Final examination will be held on pre-announced dates. Evaluation will also include term papers/project reports.

Numerical scores earned by students in tests, exams, assignments are cumulated and turned into letter grades at the end of the semester.

## **POSTGRADUATE PROGRAMS IN DISASTER MANAGEMENT (PPDM)**

### **Introduction**

It is well known that Bangladesh is a highly disaster-prone country and particularly in this context of widespread poverty, disasters often assume great proportions; both risk and vulnerability to various disasters are extensive. Some disasters, such as floods and drought, are annual and cause national loss at a regular frequency. Others, such as cyclones and earthquakes, are waiting in the offing, and it is not hard to imagine the destruction that could occur in a severe earthquake in the rapidly growing and densely populated urban areas. There is thus an important need for disaster management in this context where disasters are a part of life.

The Postgraduate Programs in Disaster Management comprise of certificate, diploma and master's degree programs. It runs as a semi-autonomous program within BRAC University under the Department of Architecture. The certificate is a 1-semester course; by completion of another semester a diploma is obtained. There is also the option of obtaining a master's degree by completing a dissertation in an additional 1-2 semesters.

### **Objectives**

This postgraduate programs targeted for active professionals allow contributing to this nationally significant practice-oriented field. Such a course to supplement profession-based education of graduates of various disciplines also serves to further post-professional qualification and allows career development. Because this course is largely targeted for development organizations, it is relevant within the BRAC organizational framework.

### **Student Composition**

The programs satisfy the need for training staff members of national and international NGOs involved in disaster management. Other sources of students are government departments relating to disaster management.

Because the programs are multi-disciplinary in nature, students are drawn from a broad range of disciplines that produce graduates working in the field of disaster management in various capacities and roles, including the social sciences, public administration, armed forces, law, engineering, architecture, planning, geology, geography and meteorology. Additionally, as the course is practice-oriented, in lieu of academic qualifications, professional and practical experience of prospective students is taken into consideration for admission.

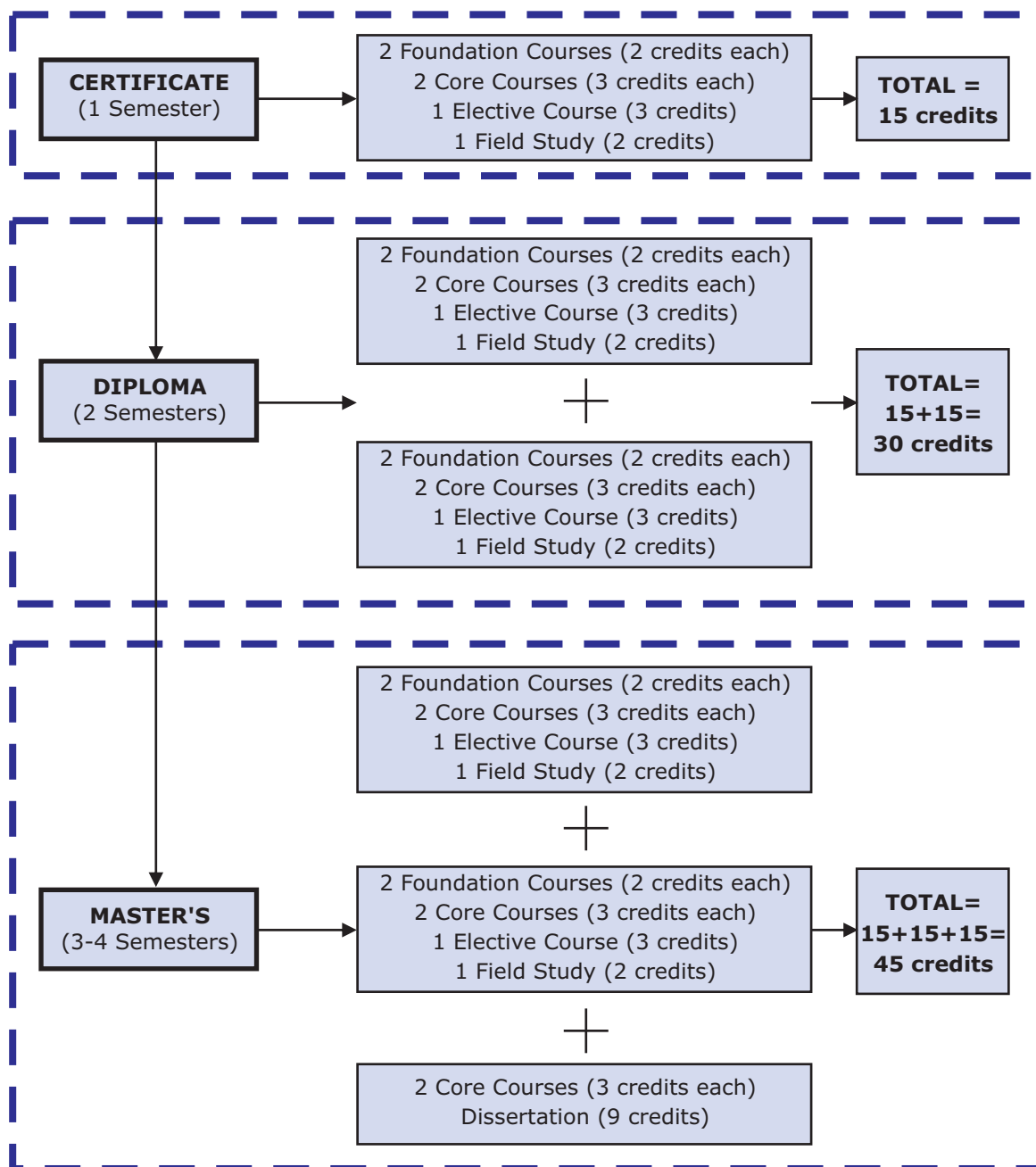
### **Program Structure**

Semester 01 consists of 15 credits comprised of 2 foundation courses (4 credits), 2 core courses (6 credits), 1 elective course (3 credits) and 1 field study (2 credits). At this level, field-oriented and applied aspects of disaster management are emphasized. For those leaving after Semester 01, a Certificate is awarded. For those students continuing for a Diploma, in Semester 02, they are required to complete another 15 credits comprised of 2 foundation courses (4 credits), 2 core courses (6 credits), 1 elective course (3 credits) and 1 field study (2 credits). At this level, a wider choice of electives is offered to take into account advancement of knowledge of the students. A greater emphasis on theoretical aspects is given in comparison to the previous semester. If the program is extended to a Master's degree, a student is required to complete another 15 credits comprised of 2 core courses (6 credits) and a dissertation (9 credits) under the supervision of a suitable advisor. At the Master's level, the student obtains a solid grasp of both theoretical and



field-oriented aspects of the subject, as well as developing capacity for independent thinking. For students who are assessed to require them, non-credit preparatory courses are provided.

Level	Duration	No. of courses	Credits
Certificate: Semester 01	14 weeks	6	15
Diploma: Semester 02	14 weeks	6	15
Master's	14-28 weeks	2	6
Dissertation			9
<b>TOTAL</b>			<b>45</b>



## Schedule

At the certificate and diploma levels, for each 15-week semester there are 13 contact hours per week. Classes are held in the evening for the convenience of active professionals for whom this course is primarily targeted. For the 2-credit field study modules, contact hours are based on field visits. For students undertaking dissertation at the master's level, the schedule consists of personal tutorials with supervisor, attending core courses and working outside class.

## Courses Offered

The following list shows courses that are offered. Course numbers and descriptions are provided in a later section.

### Preparatory Courses

	Credits Equivalent
Foundation Course in English Language	3
Basic Course in Computing	1.5

### Foundation Courses (Each course carries 2 credits and is compulsory)

- Introduction to Hazards and Disasters
- Fundamentals of Disaster Risk Management
- Organizational and Policy Context of Disaster Risk Management
- Research and Analytical Methods

### Core Courses (Each course carries 3 credits and is compulsory)

- Disaster Response and Recovery Strategies
- Disaster Preparedness and Vulnerability Reduction
- Assessment of Risk, Vulnerability and Capacity
- Independent Study in Disaster Management I
- Independent Study in Disaster Management II
- Dissertation Seminars

### Elective Courses (Each course carries 3 credits and at least 2 elective courses must be completed. A student may focus on a specific field of interest by selecting the relevant elective courses)

- Riverine Disaster Risk Management
- Cyclone and Tornado Preparedness and Rehabilitation
- Earthquake Vulnerability Reduction
- Community Based Approaches to Disaster Management
- GIS and Remote Sensing Techniques in Disaster Management.
- Building Design and Construction in Disaster-Prone Areas
- Urbanization and Disasters
- Risk Communication, Training and Public Awareness
- Gender Issues in Disaster Management
- Disaster Risk Reduction and Development Planning

## Dissertation

All students continuing to the master's level are required to complete a dissertation (maximum 20,000 words, minimum 15,000 words) on a topic related to disaster management and agreed with their supervisor(s). The core course 'Dissertation Seminars' has to be taken during this stage to supplement dissertation writing skills and techniques. The dissertation is presented and defended at a committee composed of at least two faculty members and one external examiner.

## Course Composition

### Certificate: Semester 01

- A) Foundation Courses (2 credits each):
  - Introduction to Hazards and Disasters
  - Fundamentals of Disaster Management
- B) Core Courses (3 credits each):
  - Disaster Response and Recovery Strategies
  - Independent Study in Disaster Management I
- C) Elective Courses (3 credits) (any one of the following):
  - Riverine Disaster Management
  - Cyclone and Tornado Preparedness and Rehabilitation
  - Earthquake Vulnerability Reduction
  - Community-Based Approaches to Disaster Management
- D) Field Study I (2 credits)

### Diploma: Semester 02

- A) Foundation Courses (2 credits each):
  - Organizational and Policy Context of Disaster Management
  - Research and Analytical Methods
- B) Core Courses (3 credits each):
  - Disaster Preparedness and Vulnerability Reduction
  - Independent Study in Disaster Management II
- C) Elective Courses (3 credits) (any one of the following)
  - GIS and Remote Sensing Techniques in Disaster Management
  - Building Design and Construction in Disaster-Prone Areas
  - Urbanization and Disasters
  - Risk Communication, Training and Public Awareness
  - Gender Issues in Disaster Management
  - Disaster Risk Reduction and Development Planning
- D) Field Study II (2 credits)
- E) Preparatory Course (if required)

### Master's Program: Semester 3

- A) Core Courses (3 credits each):
  - Assessment of Risk, Vulnerability and Capacity
  - Dissertation Seminars
- B) Dissertation (9 credits): Semester 4



# **Postgraduate Course Descriptions**



## DESCRIPTION OF COURSES

### MASTER OF ARTS (MA) IN ENGLISH

#### CONCENTRATION IN LITERATURE

##### **ENG 604: Research Methodology 3 Credits**

This course will introduce students to the basic ways of writing a research paper or thesis. Beginning with conceptual clarity, the course will introduce students to methods of library research, including on the Internet and the use of primary and secondary materials. Students will be taught how to pose research questions, the use of annotations, bibliography and the basic tenets of literary and cultural research.

##### **ENG 605: Contemporary Literature in English 3 Credits**

Literature of the late 20<sup>th</sup> century and the first decade of the 21<sup>st</sup> century will be looked at in this course. This will cover a wide span including writing from the UK and the USA, but other Anglophone literatures as well, showing how English is a global language and the many varieties of English writing prevalent in the world today. Postcolonial and postmodern approaches to literature will be emphasized in this course.

##### **ENG 611: Basic Readings in Feminist Literary Criticism 3 Credits**

This course will take students through the main writings of western literary tradition from the 'first' to the 'second' wave. As part of the reading of the 'third' wave of feminist literary criticism, which critiques the 'eurocentricism' of the previous writers, the course will concentrate on writing from South Asia. Virginia Woolf, Simone de Beauvoir, Kate Millett will form the first part of this course. The second part will look at the writings of Elaine Showalter, Ellen Moers and Tillie Olsen. The third part of the course will look at Cora Kaplan, Gayatri Spivak and selected writings by Terry Lovell, Toril Moi and Mary Jacobus. The course will end by concentrating on the Indian subcontinent looking at the critical writings of Susie Tharu, Kumkum Sangari, Niaz Zaman and Firdous Azim.

##### **ENG 612: Basic Readings in Postcolonial Literary Criticism 3 Credits**

Beginning from the writings of Edward Said, the course will look at the later developments of postcolonial theory as represented by Homi Bhabha and Gayatri Spivak. Once the field is laid out, we will look at writers from Africa and the Caribbean, such as Franz Fanon, Leopold Senghor or Ngugi wa Thiongo to widen the scope of postcolonial responses to literature. Contemporary postcolonial critics such as Ania Loomba, Robert Young and Alta Aima will be included as part of the reading list.

##### **ENG 613: Basic Readings in Postmodern Literary Criticism 3 Credits**

With the deconstructionist moment inaugurated by Jacques Derrida, the approaches to western intellectual thought underwent a complete transformation. We will look at the development of postmodernist thought through the writings of Derrida, Lyotard, Jameson and Baumann to see how this transformation has worked. Postmodernism also introduces students to the new forms of culture and the relationship between technological transformations and critical thought.

##### **ENG 614: World Literature in Translation 3 Credits**

Modern prose texts from different non-Western cultures in English translation will be studied in this course. Students will be encouraged to apply the different critical methodologies they have learnt at undergraduate level as well as the ones they are being introduced to at MA level, to elucidate the texts.

##### **ENG 615: Nationalism and Literature 3 Credits**

Fredric Jameson has called 'third-world' literatures a process of nation-making. Aijaz Ahmed

has critiqued this concept, seeing it as yet another example of Eurocentric ways of looking at 'other' cultures. This course will look at 'founding' texts from 'third-world' nations, to see to what extent they are a narration of nation making. Examples of readings include the novels of Bankim and Tagore, or the new African writings by Ngugi wa Thiongo or Chinua Achebe.

**ENG 616: Classical Literary Theories of the Eastern and Western Traditions 3 Credits**

This course will look at the classical literary theory of ancient Greece, concentrating on Aristotle, Plato and Longinus. From the Indian tradition we will look at the place of the *rasas* and the *Natyasastra* to understand how literature was thought of in our own culture. From the Arabo/Persian tradition, we will look at writings on the *qasida* and on poetic forms to see how Persian poetry was written and discussed.

**ENG 617: Literature and Popular Media 3 Credits**

Literature is normally placed in what has come to be known as 'high' culture. But literature can also be popular culture as is seen by the best selling status of many a literary work, as well as the cult status enjoyed by some writers. This course will look at the interconnection between literature and popular culture, as well as the place of literature in media such as film and TV.

**ENG 618: Tracing a Feminist Tradition: 18<sup>th</sup> and 19<sup>th</sup> century women's writing 3 Credits**

Is there a feminist or woman's tradition? This tradition can be traced from the 18<sup>th</sup> century writings of Mary Wollstonecraft, to the rise of the Gothic in the 18<sup>th</sup> century, the great realist novels of the 19<sup>th</sup> century including writers like Charlotte Bronte and George Eliot. This course will look at this body of writing critically to question the notion of a 'tradition' of writing, and to see how the 19<sup>th</sup> century 'woman question' is reflected in its literature.

**ENG 619: 20<sup>th</sup> Century Feminist Readings of Literature 3 Credits**

Women continued their expansion into the realms of literature in the twentieth century. Beginning with Woolf's *A Room of One's Own*, this course will follow this expansion by examining feminist developments in English criticism. We will use the literary criticism of Kate Millet and 1960s criticism, to analyse texts from a radical feminist perspective. Stemming from this review we will use Elaine Showalter's tracing of a woman's tradition, and we will see how this is linked to other readings of literature such as those done by Cora Kaplan and the socialist feminist stream. Finally we will delve into the realm of 'other' women's voices through black feminist literary criticism as well as critical readings of Native American female writers.

**ENG 620: Transnational Feminism: Reading Literature Inter-culturally 3 Credits**

The main objective of this course is to acquaint students with the universal nature of feminism. This course focuses on issues relating to women's diversity through different genres of literature by women writers. It includes texts written from and addressing a variety of viewpoints, identity and experiences, which are shaped not only by societal definitions of gender, but also by constructions of race, sexuality and class.

Beginning with the Introduction of Inderpal Grewal and Caren Kaplan's *Scattered Hegemonies: Postmodernity and Transnational Feminist Practices*, this course critically examines the tradition in women's writing, deconstructs the pervasive images of women in literature, and analyses the way in which women use language to define their experiences. A variety of works by Bangladeshi, Indian, Pakistani, Egyptian, Latin American, African, British, and American women will be studied, including novels like *Sultana's Dream*, *Map of Love*, *Ice-Candy-Man*, *Jays of Motherhood*, *The House of Spirits*, *Sexing the Cherry*, *Their Eyes Were Watching God* and *The Raven* a play by Caryl Churchill; poetry by Kamala Das, Sappho, Adrienne Rich, Sylvia Plath; and essays by Arundhati Roy.

**ENG 621: Gender Theories and Feminist Readings of Literature 3 Credits**

Is there any distinction between sex and gender? How are gender stereotypes created? Do



male authors write differently from female authors? Do men and women read differently? What does it mean to define a particular piece of writing as 'feminist'? Women and literature is the subject that draws a direct connection between life and literature. This course examines the cultural and social construction of gender and debates on gender in literature through the lens of gender and feminist theories. It aims to concern itself with sexual difference, images of men and women in literature, the biological, social, and cultural construction of femininity and masculinity, as well as how gender intersects with age, race, class, ethnicity, and sexual orientation. This course will look at the writings of Virginia Woolf and Simone de Beauvoir to see how the realist novel in English can be read. It will proceed to look at feminist analyses by Kaplan, Spivak and Judith Butler to look at contemporary writings and critically analyse the literary representation of women.

**ENG 622: Reading English Literature Post Colonially: From Shakespeare to Defoe** **3 Credits**

Post-colonial re-readings of literature have proceeded through a re-examination of the English literary canon. This course will look at early English literature, from the plays of Shakespeare to the novels of Defoe to see how the colonial theme and depictions of the other occur in the English writing of the period of exploration and the beginnings of empire.

**ENG 623: Postcolonialism and Literature: The Nineteenth Century** **3 Credits**

This course will involve a re-reading of the nineteenth-century novel post-colonially. Students are expected to read novelists from Charlotte Bronte of the early nineteenth century to Rudyard Kipling of the late nineteenth century. This course will also look at the response from the colonized world, and will read the English writings of the Bengal Renaissance, with authors such as Michael Madhusudan Dutt or Bankim Chandra Chatterjee to see how nineteenth-century colonialism influenced the growth and development of literature.

**ENG 624: Postcolonialism and the Contemporary World: Reading "Other" Englishes** **3 Credits**

English as a world language has implications for its literature. English writing from other sites, such as the Caribbean, the African continent and South Asia are witness to this international status of English. From its initial nomenclature as Commonwealth writing to its present day status as postcolonial writing in English, this body of texts represents a rich tapestry of writing.

**ENG 625: Translation and the Study of Literature** **3 Credits**

Cultural and literary transactions globally require a process of translation, not only from one language to another, but often from one medium to another. This course will look at translation not between languages alone, especially between English and Bangla, but will also see how literature translates into other cultural media, notably film and television.

**ENG 626: Postmodernist American Literature: from the 1960's to the present** **3 Credits**

This course will cover the writers of the Beat Generation of the 1950's including Burroughs and Ginsberg to the writings of Vonnegut and Pynchon to see how postmodernism has a direct influence on the representation of American culture and society.

**ENG 627: Post Modernist British Literature: from the 1980's to the present** **3 Credits**

Salman Rushdie is perhaps the iconic writer of contemporary Britain, mixing as he does the post-colonial with the post-modern. Other contemporary writers such as Ian McEwan will be looked at to see how the realist tradition continues in England, especially with the invention of such forms as the docu-novel. 'Other' Englishes also form a part of this course looking at the writings of Hanif Kureishi or Zadie Smith.

**ENG 628: Postmodernism in translation: Spanish and French traditions** **3 Credits**

This course will look at the relationship between modernism and post-modernism. The French tradition will be represented by the writings of Robbe-Grillet, Marguerite Duras as well as Monique Wittig. The Spanish tradition will start with Cervantes, go on to the new world, looking at the writings of Gabriel Garcia Marques and Mario Vargas Llosa.

**ENG 629: Postmodernism and the visual media** **3 Credits**

Post-modernist theories are concerned with the creation of meaning as well as the instability of meaning. Post-modernism has blended with cultural studies to analyse the contemporary visual media including television and film, the Internet, billboards and advertisements. This course will look at the visual media as the meeting-point between commerce and cultural production, and analyse the creation of images and their impact on our cultural lives.

**ENG 671: Cultural and Media Studies** **3 Credits**

This course will look at contemporary popular culture as well as the audio-visual media. It will look at cultural theory to understand the workings of ideology, and how they get reflected in literature. As literary writing is giving way to the audio-visual media in contemporary times, this course will also look at film texts, TV and the Internet to see how cultural attitudes are formed and disseminated in postmodern times.

**ENG 699: Thesis** **12 Credits**

Students in the Literature concentration are required to complete a thesis of 15,000 to 20,000 words on a topic of their choice and approved by their thesis advisor. ENG 699 (Thesis) will have to be taken during Semester III, and the student will be guided by a thesis advisor. The thesis will have to be presented and defended in front of a committee composed of at least two faculty members and one external examiner.

**CONCENTRATION IN ELT & APPLIED LINGUISTICS****ENG 601: Advanced Writing Skills** **3 Credits**

The course will provide students with practice in skills and techniques needed at each stage of the writing process: brainstorming, mind mapping, drafting, revising and editing. Students will also study the language of academic writing (grammar and sentence structure, academic style and vocabulary), and the different genres (essays, articles, reports, response and research papers) of writing. The program integrates academic writing with creative writing (fiction and nonfiction) and journalism.

**ENG 603: Teaching Reading and Writing Skills** **3 Credits**

This course will equip students with knowledge and understanding of the principles, design and procedure underlying the teaching of reading and writing skills. The writing component will involve a critical examination of both process writing and genre-based approaches and relate these theories to the teaching of writing. In teaching reading skills, critical issues like role of the reader's prior knowledge, cultural background and interest, and text features (text structure, signalling) will be examined. A variety of reading genres, textbooks, journal articles, online sources, newspapers, magazines and literary texts will be used for the purpose. Following contemporary approaches (content-based, task-based, etc.), students will be trained to select appropriate content and design meaningful tasks to teach and test the two skills.

**ENG 604: Research Methodology** **3 Credits**

This course will introduce students to the basic ways of writing a research paper or thesis. Beginning with conceptual clarity, the course will introduce students to methods of library research, including on the Internet and the use of primary and secondary materials. Students will be taught how to pose research questions, the use of annotations, bibliography and the basic tenets of literary and cultural research.

**ENG 609: Aspects of Language****3 Credits**

In this course students will explore the nature of language, its complexity and its diversity. It will equip students with the knowledge of linguistic concepts and principles of linguistic analysis with English as the primary source of data. The first part of the course will focus on the core areas of language study: phonetics, phonology, morphology, syntax, and semantics. The second part of the course will focus on the sociological and psychological aspects of language.

**ENG 641: Methods and Techniques in ELT****3 Credits**

This course will take students through the history of English language teaching from grammar translation to communicative language teaching and other current communicative approaches. Students will have the chance to discuss and practice a range of different teaching methods and techniques. The emphasis of the course will be on the principles and techniques of teaching the four skills, as well as grammar and vocabulary.

**ENG 642: English as a Second Language: Theory and Practice****3 Credits**

The course examines the process of acquiring a second or additional language. The aim of this module is to introduce students to the psycholinguistic approaches related to second language acquisition including comprehension and production of language, learner characteristics (attitude, aptitude, motivation etc.), cognitive and metacognitive learning strategies, interlanguage and other theories of second language acquisition (Monitor model Acculturation, Accommodation etc). The course will also include a study of the pedagogical implication of SLA research.

**ENG 643: Sociolinguistics and Psycholinguistics****3 Credits**

This course introduces the students to the sociological and psychological aspects of language. The sociological aspects will comprise language variation and change, language and gender, language and culture, language policy and planning and world Englishes including Pidgin and Creole. The psychological aspects will include perception, production and comprehension of speech in first language acquisition. Examples will be drawn both from Bangla and English languages. The course will also include a study of the various theories of first language acquisition: Behaviourism, Cognitivism, Innatism etc.

**ENG 644: Approaches to Teaching Grammar****3 Credits**

The essential aim of this course is to increase students' explicit knowledge of selected aspects of English grammar and their pedagogical applications with respect to the needs of learners of English as a foreign/second language.

**ENG 645: Discourse Analysis****3 Credits**

The course will explore the relationship between the use of language and its social context. It will include the study of the functions of language, rules and procedures of discourse analysis, analysis of spoken and written discourse through an understanding of the role of context, cohesion, coherence, speech acts, cooperative principles etc. The focus will be on the methods of discourse analysis and how to work with various kinds of research data, including official documents, conversations, interviews and literary discourse.

**ENG 646: Computer Assisted Language Learning****3 Credits**

The course will equip students with the tools to integrate computer technology appropriately into language teaching and learning. It will provide an overview of different types of programs and approaches to using CALL software in the language classroom. Basic training in computer technology, and software related to language teaching and learning will be an integral part of the course.

**ENG 647: World Englishes****3 Credits**

The course surveys the social and linguistic characteristics and roles of English in societies

around the world. It will attempt to examine the differences in the status of English in different countries of the world and their sociopolitical and educational implications. Topics will include: spread of English in the world; functions and statuses of Englishes world-wide; the three varieties of English; British and American English; English in South Asia (with special emphasis on Bangladesh) and the characteristics of New Englishes. There will be opportunity to compare the different functions of English language in postcolonial nations and the extent and nature of nativized varieties, which have developed.

**ENG 648: Teacher Education**

**3 Credits**

This module is designed for students to get acquainted with various issues involved in their professional development. It will include understanding of the theories and principles of teacher education, lesson plan and evaluation, classroom observation, modes of teaching and learning, micro-teaching, counselling and feedback. A major concern of the module will be to familiarize students with current research and methodologies pertaining to teaching and learning.

**ENG 649: Material Design and Evaluation**

**3 Credits**

The course will aim at developing students' understanding of the theories and principles of effective material design. It will include evaluation, selection and adaptation of existing materials. It will provide students with the tools for designing materials for the ELT curriculum.

**ENG 650: Teaching English for Specific Purposes**

**3 Credits**

This course will expose students to the theory and practice of teaching English for specific purposes. It will train students to identify the language needs of specific disciplines, examine and assess suitable teaching materials, and design appropriate and meaningful activities for various occupational and educational purposes. The course will also include a study of the current issues, trends and research methods in ESP.

**ENG 651: Testing and Evaluation**

**3 Credits**

This course goes through the basic concepts in testing, such as, purposes, kinds and basic requirements of tests. The course also looks at test formats, testing and assessment of different skills, test construction and development, approaches to scoring and marking and test administration.

**ENG 652: Curriculum and Syllabus Design**

**3 Credits**

This course studies the background of the language syllabus design; various types of syllabi; needs analysis and the problems faced by syllabus designers. It also investigates the decision-making process that involves planning, developing, implementing, evaluating and modifying syllabi.

**ENG 653: Teaching Practicum**

**3 Credits**

The overall aim of the course is to make the students develop effective teaching skills. Students will be required to teach English language to various levels of students ranging from primary to tertiary at different educational institutions. The teaching will also comprise the teacher's observation of students' performance to be followed by a process of feedback on students' teaching performance.

**ENG 654: Phonetics and Phonology**

**3 Credits**

This course is designed to provide a basic understanding of general phonetics and a basic knowledge of the phonology of English. It will include aspects like articulation and description of speech sound, speech mechanism, consonants, vowels, syllable structure and prosodic features such as stress, rhythm and intonation. The secondary aim of the course is to introduce students to pronunciation pedagogy, focusing on how to develop pronunciation activities for Bangladeshi students acquiring English pronunciation.

**ENG 699: Thesis/Internship****12 Credits**

Students in the Applied Linguistics and ELT concentration also have to take ENG 699 (Thesis) in their final semester. They may write a thesis (of 15,000 to 20,000 words) on a topic of their choice and approved by their thesis advisor; or they may complete a semester-long internship in lieu of the thesis. If they take the second option, they must write a report based on their internship, which then has to be presented and defended in front of a committee composed of at least two faculty members and one external examiner.

## Department of Economics and Social Sciences (ESS)

### DESCRIPTION OF COURSES

#### MASTER OF SCIENCE IN APPLIED ECONOMICS (MSAE)

##### **ECO 511: Principles of Quantitative Analysis**

**3 Credits**

Objectives: To provide a thorough grounding in the methods and strategy of quantitative analysis and to ensure a broad perspective on the diversity of analytical methods.

Topics: Review of linear algebra, calculus, statistics and the philosophical bases of induction, deduction and hypothesis testing. Survey of techniques of optimization: linear, non-linear, quadratic and integer programming. Survey of econometric methods: time series, VAR, and limited dependent variable, structural, and panel models. Survey of stochastic processes and applications: queues, inventories, and Markov processes. Survey of problems in inference and interpretation: Duhem- Quine problem, causality, identification, and model selection.  
*Prerequisite: Permission of Instructor*

##### **ECO 512: Microeconomic Theory and Applications I**

**3 Credits**

Objectives: To study advanced microeconomic theory concerning individual decision making, game theory and the analysis of markets together with applications thereof.

Topics: Preference and Choice; Consumer Choice; Classical Demand Theory; Aggregate Demand; Production; Choice under Uncertainty; Non-cooperative Games; Simultaneous-Move Games; Dynamic Games; Competitive Markets; Externalities and Public Goods; Market Power; Adverse Selection, Signalling and Screening; Principal-Agent Problems. *Prerequisite: Permission of Instructor*

##### **ECO 513: Macroeconomic Theory and Applications**

**3 Credits**

Objectives: This course covers various topics in macroeconomics at the graduate level. The course is divided into four broad areas covering macroeconomic growth models, business cycles, consumption-investment-asset pricing, and new Keynesian models of imperfection.

Topics: Growth theory: Neoclassical and optimal growth models; Technological progress and human capital. Models of Fluctuation: Basic model business cycle-Consumption and saving choice; RBC models-Labour and leisure choice. Theory of Consumption, Investments and Asset Prices: Alternative theories of consumption; Risk, uncertainty and risk sharing; Asset pricing, arbitrage, state prices CAPM; Investment with adjustment costs and q-theory of investment. Market imperfections and Rigidities: Labour market-Efficiency wage, Implicit contract, Search models; Credit market- Amplifications, persistence, bank-crunch, bubbles; Goods market-Markups, complementarities, adjustment costs. *Prerequisite: Permission of the Instructor*

##### **ECO 514: Microeconomic Theory and Applications II**

**3 Credits**

Objectives: To study the microeconomic theory concerning general equilibrium, uncertainty, intertemporal utility, social choice and mechanism design, and to utilise the theoretical knowledge to gain a deeper understanding of practical economic issues.

Topics: Examples of General Equilibrium Theory; Equilibrium and Basic Welfare Properties; Walrasian Equilibrium and Existence; Core and Equilibria; General Equilibria under Uncertainty; Arrow-Debreu; Intertemporal Utility; Social Choice Theory; Axiomatic Bargaining; Incentives and Mechanism Design. *Prerequisite: ECO 512*

##### **ECO 515: Advanced Econometrics**

**3 Credits**

Objectives: This course aims to equip the students with the advanced tools and techniques in

econometric data analysis. The course covers a wide range of topics in econometrics at the graduate level. Proficiency in at least one or more statistical software package such as SAS, RATS, STATA, EViews and Microfit is expected or required to be acquired. The student must also prepare a term paper or project report using a data set and appropriate software which would demonstrate his/her analytical ability and the extent to which learning goals have been met.

Topics: Review of least squares methods using matrix approach; Small and large sample properties of OLS estimates; Inference and prediction; Alternative functional forms; Model selection criteria; Violation of OLS assumptions and GLS estimation; System of regression equation and simultaneous equation models; Alternative estimation frameworks-Parametric and Non-parametric estimation, ML estimation, GMM estimation. Elements of Structural Modelling and Time series Analysis; VAR; Unit Roots; Weiner Processes; Deterministic Trends; Variance Ratio Tests; Stochastic Processes, Integrated Variables and Cointegration; Bayesian Analysis of Stochastic Trends; Tests for Structural Change, Regime Switching, Markov Switching, Kalman Filtering, Structural Time Series Models. Limited dependant variables. *Prerequisite: Permission of Instructor*

### **ECO 611: Time Series Analysis and Forecasting**

**3 Credits**

Objectives: To provide a thorough review of modern time series econometrics with an emphasis on empirical applications of time series and forecasting techniques in economics and finance. The contents of the course builds upon the time series related topics covered in ECO 505. A term paper / empirical project report is required.

Topics: Univariate Time Series Models and their Applications: ARMA, ARIMA, ARCH, GARCH and ACD processes; Spectral Analysis and Filtering; Multivariate Linear Time Series Models and Stationary Vector Autoregressions: VAR models, Forecasting from VAR models, Structural VAR, Bayesian VAR, Bootstrapping; Unit-Roots and Co-integrated Processes; Introduction to Linear and Non-Linear State Space Models. *Prerequisite: ECO 515*

### **ECO 612: Models of Qualitative Choice**

**3 Credits**

Objectives: A broad and in-depth study of the econometric analysis of single-equation and simultaneous-equation models in which the jointly dependent variables can be continuous, categorical or truncated as opposed to continuous. A term paper / empirical project report is required.

Topics: Discrete Regression Models; Probabilistic Choice Models: Logit, Probit, Tobit; Discriminant Analysis; Multivariate Qualitative Variables; Censored and Truncated Regression Models; Self-Selection Models; Maximum Likelihood Models. *Prerequisite: ECO 515*

### **ECO 613: Econometric Analysis of Panel Data**

**3 Credits**

Objectives: An in-depth study of up to up to date Panel Data techniques for use in quantitative and qualitative analyses of economic and socio-economic situations. A term paper / empirical project report is required.

Topics: One-Way and Two-Way Error Component Regression Models; Tests of Hypotheses with Panel Data; Heteroskedasticity and Serial Correlation in Error Component Models; SUR Models with Error Components; Simultaneous Equations with Error Components; Dynamic and Unbalanced Panel Data Models; Limited Dependent Variables and Panel Data; Non-Stationary Panels. *Prerequisite: ECO 515*

### **ECO 614: Topics in Econometric Analysis**

**3 Credits**

Objectives: To cover recent developments and applications in econometric analysis.

Topics: Will depend on the expertise of the instructor and interest of the students. *Prerequisite: ECO 515*

**ECO 621: Corporate Finance and Economic Analysis****3 Credits**

Objectives: To provide an introduction to the theory and practical applications of modern Corporate Finance within the broader purview of the macro-economy.

Topics: Overview of Financial Markets, Financial Markets and the Economy at large, Risk and Hurdle Rates, Measuring Returns, Optimal Financing Mix, Appropriate Debt, Return to Ownership, Cash Returns, Valuation and Financial Decision Making. *Prerequisites: ECO 511*

**ECO 622: Capital Markets and Investment Strategy****3 Credits**

Objectives: To provide a theoretical and practical background in the field of investments and its relationship to capital markets.

Topics: The Investment Environment; Optimal Risky Portfolios; Equilibrium in Capital Markets; Arbitrage Pricing Theory; Empirical Evidence on Security Returns; Mutual Funds and other Investment Companies; Portfolio Performance Evaluation; Bond Prices and Yields; Term Structure of Interest Rates; Managing Bond Portfolios; Fixed-Income Derivatives; Options Markets; Option Valuation; Futures Markets. *Prerequisite: ECO 621*

**ECO 623: Asset Pricing and Financial Derivatives****3 credits**

Objectives: An introduction to the pricing of Assets. Coverage of the mathematical methods used to derive pricing formulae including those of options and other derivatives.

Topics: Introduction to Various Derivatives; Present Value; Risk Aversion; Arbitrage; Forward and Futures Prices; Hedging using Futures; Interest Rates, Basics of Options and Trading Strategies; Binomial Trees; Elements of Asset Pricing (Stochastic Differentiation, Weiner and Poisson processes, Ito's Lemma); Black-Scholes; Implied Volatility; Hedging; Capital Asset Pricing Model and Portfolio Management; Value-at-Risk; Estimating Volatilities and Correlations; Credit Risk, Real Options and Insurance; Weather and Energy Derivatives. *Prerequisites: ECO 622.*

**ECO 624: Risks, Uncertainty and Insurance****3 Credits**

Objectives: An introduction to the analysis of uncertainty, insurance markets and the management of risk including decision making under uncertainty, Pareto-optimal risk allocation, equilibrium analysis of risk exchange and informational asymmetries.

Topics: Choice under Uncertainty; Expected Utility Theory; Risk Aversion; Change in Risk; Insurance Demand; Single Risk; Multiple Risks; Calculus of Variations and Optimal Control Theory; Optimal Risk Sharing; Pareto Optimal Allocations; Equilibrium Analysis; Asymmetric Information; Moral Hazard; Adverse Selection; The Theory of Risk Classification; Economic Analysis of Insurance Fraud; Organizational Forms within the Insurance Industry; Insurance Capacity and Cycles; Corporate Risk Management. *Prerequisites: ECO 511, ECO 512, ECO 514*

**ECO 625: Managerial Economics****3 Credits**

Objectives: This course is designed to provide students with a sound understanding of how various economic concepts and economic tools are used in managerial decision-making. The intent is to integrate theory and application. Topics to be covered in the course include demand analysis and estimation, production theory and cost analysis, market structure, pricing techniques, and risk analysis.

Topics: Market Forces, Demand and Consumer Behaviour, Production Analysis and Costs, Market Structure and Competition, Pricing Strategies, Risk Analysis, Moral Hazard, Incentives and Mechanism Design, Interface of Government and Business. *Prerequisites: ECO 511, ECO 512*

**ECO 626: Topics in Financial Economics****3 credits**

Objectives: The course is designed to cover various recent developments and advanced topics in applied financial economics. *Prerequisite: ECO 621*



**ECO 631: Public Economics****3 Credits**

Objectives: To examine contemporary theories, techniques, and issues in public economics.

Topics: The state in economic theory. Public, private and club goods; externalities; market failure and government failure. Public expenditure analysis. Redistribution and social insurance programs; Stateowned enterprises: privatization, regulation and Ramsey pricing. Fiscal theory and practice; optimal taxation; tax evasion and household production. General equilibrium simulation. *Prerequisites: ECO 511, ECO 512, ECO 514*

**ECO 632: Project Appraisal and Management****3 Credits**

Objectives: To gain experience in the application of project and investment analysis methods. To examine the economic theory underlying project analysis.

Topics: Review of welfare economics. Multiple objectives and value metrics; valuation of intangibles, external and indirect effects. Discounting in theory and practice. The theory of distortions and shadow pricing. Scale problems: fixed and endogenous prices. Risk analysis. Sensitivity analysis. Finance and capital budgeting problems. Public sector projects: transportation and road projects; accounting and transparency. Environmental and regional impacts; problems with multiplier analysis. *Prerequisite: ECO 631*

**ECO 633: Resource and Environmental Economics****3 Credits**

Objectives: The course introduces the analytical and policy challenges posed by natural resources and environmental externalities and surveys classic and contemporary approaches to measurement and analysis.

Topics: Resource economics concerns the market structure, pricing, and intertemporal use of natural resources (renewable and nonrenewable). Regulatory and institutional means for managing resources; evaluation of incentive-based and command-based approaches; mechanism design for common property governance. Option value and existence value problems. Environmental economics concerns amenities and disamenities not traded in markets or that are jointly produced or consumed with other goods. The course examines mechanisms for improving the allocation of environmental amenities Pigovian taxes, regulation, tradable permits and methods of valuing them contingent valuation, hedonics, and other indirect market-based measures. Finally, international treaties and cross-border resource and environmental issues are surveyed. *Prerequisites: ECO 632*

**ECO 634: Trade Policies and Development****3 credits**

Objectives: The analysis of trade policies, trade agreements, bi-lateral and multi-lateral trade negotiations and the resolution of trade disputes. The course links recent advances in trade theory to contemporary issues in trade and development policies. Issues in international finance, especially the transmission of international financial crises and the role and capacity of international financial institutions such as the IMF or BIS to manage or limit such crises will also be examined.

Topics: Survey of recent advances in the trade theory: new approaches to comparative advantage, market structure, factor measurement, factor productivity and total factor productivity; the problem of factor and product price equalization; geography and agglomeration economics; knowledge, human capital and endogenous growth. Case studies of selected WTO issues negotiations and disputes and, if relevant, SAFTA/SAARC issues. International movements of financial capital; origin, transmission, impact and resolution of recent financial crises and the role of international financial institutions. *Prerequisites: ECO 512, ECO 514*

**ECO 635: Economic Development Policies in Bangladesh****3 credits**

Objectives: An in-depth examination of the Bangladeshi development experience.

Topics: Sectoral Development and Sectoral Analysis in a General Equilibrium Framework; Agriculture, Industry and Service Sectors of Bangladesh; Foreign Trade, Foreign Aid and FDI; Financial Institutions, Monetary Management and Fiscal Policy; Technology and Human Resource Development; Role of NGOs; Long Term Economic Prospects. *Prerequisite: ECO 631*

**ECO 636: Topics in Economic Policy Analysis**

**3 credits**

Objectives: to examine, in depth and empirically, specific policy issues with an emphasis on the application of analytical methods.

Topics: The specific content of the course will depend on the expertise of the instructor and the interests of students. *Prerequisites: ECO 631, ECO 632*

## Department of Mathematics and Natural Sciences

Contents of the courses for MS in Biotechnology and other postgraduate courses in mathematics and statistics are given in the following:

### Course Descriptions

#### **BTC 501 Plant Biotechnology**

**3 Credits**

The plant biotechnology course covers principles and different aspects of plant biotechnology.

Topics include:

- Plant cell cultures; growing tissue-, axillary bud, root- and meristem cultures
- Protoplast culture, somatic hybridisation and importance, cybridization
- Application of mass propagation (micropropagation) for virus-free vegetatively propagated crops such as potatoes, ornamentals, forest trees and medicinal plants
- Plant growth regulators: auxin, cytokinin, gibberellin, zeatin, 2iP and their role and putative mode of action
- Regeneration pathways: organogenesis vs somatic embryogenesis; concepts and applications
- Plant transformation- application of the technique in transferring useful genes such as genes for disease-, insect resistance, those that add nutritional values to the crops of interest across wide genetic barriers
- Production of genetically modified (transgenic) plants: indirect and direct methods, selectable markers, transient and stable expression, merits and demerits of the respective methods
- A critical assessment of GM crops containing genes for herbicide-, virus-, bacterial-, fungal-, nematode- and insect pests resistance. evaluation of GM crops for their adoption in developing countries
- Germplasm preservation-ex situ and in situ preservation; gene bank
- Plant secondary metabolites of medicinal importance
- Commercial exploitation of plant tissue culture and possibilities in Bangladesh

#### **BTC 502 Plant Biotechnology (Lab)**

**3 Credits**

The Plant Biotechnology (Lab) course will cover the following experiments:

- Setting up tissue culture experiments for callusing
- Differentiation as well as different aspects of molecular biology beginning from DNA and RNA isolation, running them in gel for their characterization based on their kb length
- Use of restriction enzymes for DNA and RNA fragmentation at predetermined sites
- Ligation of different pieces of DNA in a suitable plasmid vector such as *pBluescripts*
- Plant cell cultures; media: sterilization techniques
- Initiation of primary cultures; morphogenesis and phytohormones
- DNA extraction from *E. coli* plasmids, total RNA isolation from model plants
- Construction of cDNA library and isolating cDNA clones; minipreparation of plasmid DNA
- Computer analysis of DNA and protein sequence
- Plant genomic DNA isolation
- Restriction digestion of DNA and Southern transfer; RNA gel electrophoresis and Northern transfer; non-radioactive hybridisation of Southern and Northern Blots.
- *Agrobacterium*-mediated gene transfer (vector construction, co-cultivation); RAPD and microsatellite analyses for confirmation of hybridity/ DNA fingerprinting, biolistics, analyses of transgenic plants (PCR and RT-PCR)
- Southern analyses, chromosome preparations and physiological analyses of transgenic plants

### **BTC 503 Animal Tissue Culture Techniques and Applications**

**3 Credits**

The course has been designed to impart basic knowledge in animal biotechnology so that students may take up a topic on animal biotechnology leading to cloning of useful genes from important animals such as cattle in Bangladesh.

Topics include:

- Definition, principle and significance of animal tissue culture, basic differences between plant and animal cell cultures
- Mycoplasma and viral contaminants of animal cell culture; maintenance of sterility and use of antibiotics
- Various systems of tissue culture: their distinguishing features, advantages and limitations
- Culture medium: logic of formulation (natural media, synthetic media and sera)
- Methodology- i) primary culture: behavior of cells, properties, utility ii) explant culture iii) suspension culture
- Nutrient media: obligatory and optional constituents
- Incubation systems: static agitated culture systems
- Hormone signaling and mechanisms of signal transduction, fertilization, early embryogenesis
- Applications of gamete and embryo manipulations for biomedical purposes, tissue-specific gene expression and tumorigenesis
- Development and preparation of vaccines against infecting organisms
- Artificial animal breeding; *in vitro* fertilization
- Cloning: techniques and technologies; Dolly, the cloned sheep
- Mutant cell lines: significance in biomedical research, identification and isolation of mutants
- Application of genetic manipulation, medicinally important compounds; screening of cell lines for novel variations: disease resistance, stress tolerance
- Gene transfer to animal cell, viral vector (development and use), gene therapy; transgenic animal
- Cytotoxicity and diagnostic tests; development and preparation of vaccines against infecting organisms

### **BTC 504 Fermentation and Industrial Biotechnology**

**3 Credits**

The course outlines the process of fermentation and industrial biotechnology from organism and environmental points of view.

Topics include:

- Industrially important microorganisms-bacteria, fungi, actinomycetes and yeasts
- Major classes of microbial products and processes
- Growth of microorganisms in batch, semibatch and continuous culture
- Microbial growth kinetics for primary and secondary metabolites in batch and continuous culture
- Industrial applications of continuous culture-potentials and limitations
- Upstream and downstream processing of microbial fermentations
- Twin faceted core of industrial biotechnology- genetic manipulation including application of genetic engineering techniques for microbial strain improvement
- Optimization of media and fermentation conditions for maximizing productivity
- Scale up of fermentation processes; criteria for scale up; physical, chemical and sterilization factors
- Bioreactor design-batch, semi-batch and continuous bioreactor operations
- Aeration and agitation; sterilization: batch and continuous
- Process monitoring- off line and on-line sensors; and process control
- Unit operations in product recovery and purification
- Principles and methods of cell immobilization and their industrial applications
- Biotechnological production of representative metabolites: organic acid, amino acids, alcohol, industrial enzymes, antibiotics, recombinant proteins; biopharmaceuticals and vaccines
- Anaerobic fermentations- industrial production of alcohol, acetone, butanol etc.
- Scope of industrial biotechnology in Bangladesh

**BTC 505 Environmental Biotechnology****3 Credits**

This course details the dangers of pollution; how the environment is rapidly being polluted due to setting up of industries all over the world and in Bangladesh as well; how the effluents from factories along the shores of rivers and water bodies are killing the aquatic life in and around the cities and possible remedial measures.

Topics include:

- Microbes and metabolism; genetic blueprint for metabolic capability; metabolic pathways of particular relevance to environmental biotechnology
- Fundamentals of biological interventions: extremophiles with diverse degradative capabilities;
- Pollution and pollution control biotechnology: types of pollution and pollution control strategies and available technologies
- Contaminated land and in situ and ex situ techniques for remediation
- Aerobes and effluents-sewage treatment tank; activated sludge systems; oxidation ditch; membrane bioreactors
- Phytotechnology- metal phytoremediation, rhizofiltration; organic phytoremediation; algal treatment systems
- Biotechnology of wastes- composition of wastes; biological waste treatment; composting and application in waste treatment; anaerobic digestion; biogas and other technologies
- Bioremediation; suitability and factors affecting bioremediation; essential features of biological treatment systems
- Environmentally transmitted pathogens; risk assessment; microorganisms and metal pollutants
- Biosensors
- Concept of viable but non-culturable cells (VBNC); present status of VBNC; molecular genetic methods for detection and identification of VBNC; implication and significance of VBNC in environment and health
- Use of commercial blends of micro-organisms and enzymes in wastewater treatment; immobilized cells in the waste treatment; potential application of recombinant DNA technology in waste treatment
- Xenobiotic degrading bacteria and their catabolic genes in bioremediation: in situ analysis of microbial community and activity in bioremediation, DNA- and RNA-based methods; genetic finger printing techniques; recent powerful sensitive techniques for detection of specific compounds
- Integrated approaches in environmental biotechnology

**BTC 506 Research Project Preparation****3 Credits**

This course gives research orientation to students so that they can carry out research projects with efficiency and confidence.

Topics include:

- Project design, planning, implementation and evaluation: writing project proposals; essential components of a project- overall development objectives, specific objectives, output, verifiable indicators, means of verification, assumptions; logical framework matrix; project monitoring and evaluation methods
- Research project planning: literature review through search engines, such as Google, HINRARI, Altavista, PubMed, and other online literature survey to dig out information relevant to a research project
- Design of methodology and experiments supported by knowledge in biostatistics, record observations, interpret results
- Writing a scientific paper following the format of a particular journal including bibliography
- Use of search engines to be up to date in the line of research
- Selection of a suitable research topic, steps to be followed-idea and concept, objective analysis, theme development and chronological design of different plans of activities

- Selection of a suitable guide for research; communication skill for interacting with the guide at different stages of work
- Writing a thesis- different components to be included; relevance of objectives to literature review, methodology, overview of study design and results, comparative analysis with the existing information in the selected project; analysis of uniqueness of findings; discussion and interpretation
- Writing a research paper for journal publication, structure of a scientific paper- the IMRAD format- selection of suitable title, key words, abstract , introduction materials and methods, arrangements of tables and figures in a self-explanatory way, results and discussion and references all based on thematic approach
- Convenient order of reading or writing a paper; modern methods of communication- electronic submission, e- journals etc.
- Presentation of paper- oral presentation, poster presentation; logical organization of power point presentation-structuring the presentation largely as a story

### **BTC 507 Biostatistics and Experimental Design (Theory and Lab)**

**3 Credits**

This course has been tailored to the need of molecular biologists who are often confronted with the problem of making a valid conclusion for want of properly organized experimental layout.

Topics include:

- Definition and scope of biostatistics, measures of central value; mean, median, mode, measures of dispersion, range, quartile deviation, mean deviation, variance, standard deviation, standard error, coefficient of variation
- Sampling distribution, confidence limit; correlation and regression: calculation of correlation coefficient and test for its significance, regression coefficient, regression line, multiple regressions
- Concept of probability, probability rules, conditional probability and independence
- Probability distributions: binomial, Poisson and normal distributions and their applications; hypothesis testing, null hypothesis; level of significance; comparison of two means, t-test, t-tests for small and large samples, paired t-test, chi-squared test, goodness of fit test, test of independence, contingency tables
- Analysis of variance; one-way and two-way classifications, comparison of three or more samples, F-test; concepts of experimental design, principles of experimental design, completely randomized design (CRD), randomized block design (RBD), latin square design, factorial experiments, split-plot design
- Multiple comparisons, least significant difference test (LSD test), Duncun's multiple range test

### **BTC 508: Seminar**

**3 Credits**

The course aims at development of presentation skill of the students about topics chosen from literatures and their own findings

Topics include:

- Presentation of the contents of a complex article in a short, concise and comprehensive form
- General structure of a seminar talk: title, list of contents, conceptual background as to why the topic is interesting, hypothesis or research objectives, presentation of materials and methods to depict only what is needed to understand the results (short), presentation of results preferably with clearly understood more figures and less tables (little long), discussion to explain if the objectives of the study have been achieved, what are the alternative explanations or whether are more experiments are needed (little long), summary containing the most interesting part to attract the audience
- Seminar talk on the selected published paper keeping in mind the following pertinent points:
- problem investigated; research question answered; primary motivation for investigating the problem; background information (context); relevance to understanding the problem; key points of the paper; method(s) or experimental design used; results reported in the paper; unexpected results, if any and if so whether such results are explained sufficiently

- The paper's conclusions, implications of the investigation, how does the investigation influence future work?
- Weaknesses if any of the paper, personal evaluation
- Points to consider about the audience: why the audience should be interested in this particular topic; what they already know about it; what terms or definitions are new to them; which key points or concepts will be the most interesting and which ones will be difficult for them to grasp

### **BTC 509 Genomics (Bioinformatics)**

**3 Credits**

The course outlines a number of software tools used for characterizing an unknown gene or a part of it on the basis of stored data of DNA base sequences of a similar gene.

Topics include:

- Web based methods in molecular genetics, computer aided analysis of genetic sequences
- Genome analysis, identification and characterization of important functional genes with the help of NCBI data base and suitable software
- Modern applications of genetic mapping and importance of genome synteny between species revealing their relationship on phylogenetic trees
- Current research in molecular genetics and genome analysis, with particular emphasis on modern applications of genetic mapping and the importance of genomic synteny between species
- Gene tagging, plant transposons, gene banks and genome databases
- Gene cloning based on genome maps, sequencing programs and protein sequence motifs
- Principles of algorithms and software for sequence alignment, similarity search of biological databases and DNA sequence analysis
- Motif discovery, estimation of molecular phylogenetic trees
- Structural prediction and functional inference; predicting the structure and evolution of macromolecules

### **BTC 510 Fundamental and Applied Aspects of Plant Genetic Manipulation**

**3 Credits**

The course aims at giving biotech students an in-depth knowledge in fundamental and applied aspects of plant genetic manipulation.

Topics include:

- Introduction to plant genetic manipulation
- Plant tissue culture, transgenic plant production (factors and elements)
- GM technologies and GMOs: recent development and future trends
- Agrobacterium-mediated transformation
- Chloroplast transformation method
- Biotic stress resistance transformation- resistant molecules
- Fungus resistant transgenic plant production
- Abiotic stress resistant transgenic plant production
- Innovative techniques for genetic manipulation of plants against a background of a continuing need for plant improvement in agriculture, horticulture and forestry
- Cell fusion technology for novel somatic hybrid production
- Development of plant transformation systems comprising Agrobacterium-mediated gene delivery, direct DNA uptake and biolistics; vector design; molecular methods in crop improvement alongside the value of gene mapping and genetic fingerprinting for germplasm evaluation
- Biopharming
- Biofuel

### **BTC 511 Commercial Production of Horticultural and**

**3 Credits**

Ornamental Plants: This course has been designed to train students to work in biotech farms dedicated to commercial production of horticultural, ornamental, timber and medicinal plants through tissue culture techniques.

Topics include:

- Cost saving devices in tissue culture: used glass jars from hotels, locally made unscrewed plastic caps to replace cotton plugs, preparation of distilled, deionized water, making of various kinds of culture media under sterile conditions
- Adoption of extra precautionary measures to eliminate bacterial and fungal contamination
- Different techniques used for preparing explants for callusing and differentiation, procedure for hardening plantlets after they are taken out of culture bottles
- Maintenance of plants inside the greenhouse in accordance with their requirements for light, temperature and moisture
- Lessons on construction of greenhouses creating microclimate for the growth of different types of horticultural plants, installation of misting and ventilation system including the cost involved
- Packing of tissue culture derived material for marketing, without damage during the transport of the material
- Status of commercial production of horticultural and ornamental plants in Bangladesh and other neighbouring countries
- Potentials of tissue culture technology

### **BTC 512 Sex, Flowers and Biotechnology**

**3 Credits**

The course will outline floral development, senescence and incompatibility status.

Topics include:

- Introduction to plant alternation of generation
- Reproduction and senescence
- Haploid production through tissue culture
- In vitro pollination and fertilization
- Embryo culture under in vitro condition
- Flower color modification through genetic manipulation
- Terminator seed technology
- RNAi and PTGS
- Gene silencing for the crop improvement
- Hybrid seed technology
- Methods and achievements in the genetic engineering of crops by modifying floral development
- Reproduction in higher plants and the implications for horticulture and crop production
- Genetic control of floral development; applied aspects of flowering and reproduction
- Molecular basis of self incompatibility, floral senescence, seed storage proteins and the physiology
- Biochemistry and molecular biology of fruit ripening

### **BTC 513 Gene Function and Its Regulation**

**3 Credits**

This course will give the students an in depth knowledge about how a gene controls different steps in a biochemical pathway leading to the formation of an end product.

Topics include:

- Molecular structure of gene and chromosomes, mobile DNA
- Chromosomal DNA: functional rearrangements and organelle DNAs
- Regulation of gene expression: prokaryotic system
- Prokaryotic gene expression regulation-II and eukaryotic gene expression regulation
- Transcription control at termination and RNA processing step
- Gene expression fidelity and cancer
- Environmental effect and gene expression
- Mutation and repair of DNA, DNA damage and repair regulations
- Modern concept of homologous recombination
- Operon model; signal transduction, cyclic nucleotides and hormones in gene regulation
- Genetic recombination in vivo, homologous recombination by hybrid DNA formation



- Site-specific recombination
- Transposons and non-homologous recombination, retro-transposons
- Mutation: site-directed mutagenesis and 'protein engineering'
- Mutations in human genetic diseases and clinical medicine
- DNA amplification in vitro: Polymerase chain reaction (PCR), applications of PCR in research, clinical medicine and forensic science
- DNA diagnostics: ribotyping; pulsed field gel electrophoresis
- DNA fingerprinting ; non-radioactive DNA probe technology
- Molecular biology in animal biotechnology: tissue-specific gene expression, gene transfer in animal cells: viral vectors, embryonic stem cells, gene knock-out organisms

### **BTC 514 Gene Organization and Regulation**

**3 Credits**

The course will outline the recent developments in gene regulations, protein folding etc.

Topics include:

- Structures of genes and chromosomes in relation to regulation of gene expression
- Regulation by transcription factors and enhancers/repressors
- Co-transcription regulation and the effects of chromatin structure
- Details of mRNA processing including the spliceosomes, auto-catalysis, polyA addition, differential splicing and RNA editing
- Adenosine deaminases acting on RNAs (ADARS)
- Transcriptional RNA silencing: small RNAs and insights into a new level of gene regulation
- Non-coding RNAs, processes affected by non-coding RNAs
- Post-transcriptional RNA silencing (PTGS) – components of PTGS e.g. dicer, RISC (RNA induced silencing complex), RdRP (RNA dependent RNA polymerase)
- Molecular steps in RNA silencing, RNA silencing as a tool for knocking out genes
- RNA viruses and RNA silencing
- Use of various expression systems for the production of recombinant proteins including strategies for protein isolation and refolding including the use of molecular chaperons
- Epigenetic control of gene regulation- environmental interplay with genetic elements
- Web-based methods in molecular genetics, computer-aided analysis of genetic sequences

### **BTC 515 Structural and Functional Genomics Studies**

**3 Credits**

The course is intended to give a clear concept about genome, its location and functions of the major genes in normal congenital disease-conditions in living systems.

Topics include:

- Structural genomics and functional genomics
- Genome elements: genes – their sites, location and function; mitochondrial genome
- Genome mapping: genetic mapping; physical mapping – low resolution and high resolution
- Structural genomics: molecular modeling: method for unraveling protein structure and function
- Human genome: the physical structure, variations, evolution, genetic disorder
- Human genome project: goal and achievements so far
- Genome sequencing, ESTs, SNPs, microarrays
- Plant genome: general features, chloroplast genome
- Comparative use of RAPD, RFLP, AFLP, ISSR and micro-satellite markers in plant gene mapping and selection
- Model plant genome: Arabidopsis thaliana and Oryza sativa
- Identification and characterization of important plant genes: salt-, insect, disease, submergence resistance genes
- Identification and characterization of genes controlling (a) flowering, (b) vernalization (c) photoperiod (d) circadian clock
- Use of different web sites in the identification of important genes and their functions
- DNA finger printing and its utilization as molecule markers in selection of important agronomic characters.

### **BTC 516 Special Study**

**3 Credits**

The course has been designed to acquaint the students with a number of important websites containing valuable information about genomics and proteomics of important plants and organisms.

Websites include:

- Hinari: <http://www.who.int/hinari/en/>
- The National Center for Biotechnology Information (NCBI) runs the most useful website for bioinformatics
- Bioinformatics Web, offering links and information on bioinformatics and computational biology
- Bio-computing.org, covers recent literature, tutorials, a bioinformatics lab registry, links, bioinformatics database, jobs, and news - updated daily
- BioMedNet, biomedical and bioinformatics resources
- CAMDA: Critical Assessment of Techniques for Microarray Data Analysis, includes data and papers from CAMDA conferences
- Ensembl, up-to-date sequence data and the best possible automatic annotation for many genomes
- Ergito, high-quality books and information on molecular biology and related topics, some sections free
- GeneCards, a database of human genes, their functions, and related diseases
- Genome KnowledgeBase, a collection of mini-reviews in the field of basic molecular biology
- icademic.org, Bioinformatics, Genetics, and other Life Sciences Information Sources.
- ISCB, International Society for Computational Biology
- Lipi's Bioinformatics World, tutorials, tools, databases, and more
- PubMed (Free MEDLINE Search)
- UniGene from NCBI
- UCSC Genome Bioinformatics, contains the reference sequence for the human genome and the working drafts for the mouse and rat genomes
- Y. F. Leung genomics and bioinformatics site

The students will study these websites critically and thoroughly. Familiarity with these websites will enable the students to use similar sites to retrieve relevant information in their respective area of research. Students choosing this course will study all the sections of selected websites and prepare their summaries bringing out salient points of these sections. During the examination, students will be allowed to use these websites to find answers to the questions such as location of a gene in a particular chromosome, its length, sequence and promoter and other particulars.

### **BTC 517 Enzymology**

**3 Credits**

The study of enzymatic properties will enable a biotechnologist to plan his experiments on biodegradation and bioremediation to be applicable on bioconversion; softening of basal jute stem cuttings or softening of hides of sacrificed animals, bioremediation etc.

Topics include:

- Three-dimensional structure of enzyme, active site, cofactors, activators, prosthetic groups, coenzymes, enzyme-substrate complex, energy of activation
- Factors affecting rate of enzyme reaction, regulations of enzyme reaction
- Basic aspects of chemical kinetics, molecular interpretation of rate constants
- Activation free energies, enthalpies and entropies, kinetics of enzyme-catalyzed reaction; significance of  $K_m$  and  $V_m$  values
- Allosteric sites, homotropic effects, cooperativity, heterotropic effects, allosteric effect
- Enzyme inhibition- kinetics of competitive non-competitive and uncompetitive inhibition; partially competitive inhibitors
- Enzyme immobilization: different methods of immobilization, advantages and disadvantages of immobilization; applications of immobilized enzymes in industry
- Enzyme technology in industries: biological detergent, baby food, brewery industry, baking

industry, fruit juice, dairy industry, starch industry, rubber industry, paper industry, photographic industry; applications of enzymes in bio-conversion and biotransformation.

- Enzymes as biosensors, enzyme technology in biodegradation of industrial toxic pollution: role of lignocellulosic enzymes in removing industrial toxic pollution
- Purification and characterization of an enzyme: (1) gel-filtration – determination of molecular weight (size exclusion chromatography) (2) affinity chromatography (ion-exchange chromatography). (3) gel electrophoresis.
- Assaying different enzymes: laccase, cellulase, pectinase, xylanase, -amylase, test for presence of enzymes in different plant materials, applications of enzymes in industries (visit to different industries to observe the applications), applications of enzymes in biodegradation

### **BTC 518 Recombinant DNA Technology**

**3 Credits**

This course outlines the basis of modern techniques in the applications of recombinant DNA technology, its recent progress and application in plant and animal development.

Topics include:

- Introduction to recombinant DNA technology, enzymes used in recombinant DNA technology
- Cloning vectors, gene cloning and transformation techniques
- Analysis of recombinant DNA techniques, gene targeting and site specific recombination
- Genetic transformation of prokaryotes, manipulation of gene expression of prokaryotes
- Principles, techniques and applications of recombinant DNA technology relevant to medical research, and the investigation and therapy of infectious and inherited diseases
- Site-directed mutagenesis, protein engineering; DNA sequencing
- Production of protein from cloned genes: production of recombinant protein in *E. coli*
- Production of recombinant protein by eukaryotic cells (yeast), mammalian cell expression vectors
- Special vectors for expression of foreign genes in *E. coli*, using animal cells for recombinant protein production; recombinant proteins from plants
- Molecular enzymology and protein engineering: the alteration of a protein structure by site directed mutagenesis of the DNA coding for that protein
- Molecular basis of binding specificity, catalysis, subunit interactions etc., examined by physico-chemical methods on proteins and enzymes mutated at key amino acid residues
- Construction of genomic library and cDNA library, isolation of gene

### **BTC 519 Medical Biotechnology**

**3 Credits**

This course will focus on the recent biotechnological and molecular development in disease diagnosis and treatment emphasizing on the immunological aspects of human.

Topics include:

- Laboratory aspects of research in biotechnology related to health
- Important areas of biotechnology including biochemistry, pathology, microbiology, molecular biology, immunology and immunobiology
- Aspects of specimen handling, storage and biosafety issues
- Research in medical biotechnology with special reference to developing countries
- Routine diagnostics, modern diagnostic tools
- Immunological aspects of host defense- innate immunity: both humoral and cellular
- Immunological aspects of host defense- adaptive immunity: both humoral and cellular
- Molecular methods for diagnosis of infectious agents common in developing countries
- Immunological methods for diagnosis of infectious agents common in developing countries
- High throughput techniques for studies of genetics of host and pathogens in infectious diseases
- Genetic disorders- inborn error of metabolism, metabolic disorders
- Gene therapy- ethical, legal and social implications
- Vaccine development and production

### **BTC 520 Cell Dynamics, Cell Cycle and Cell Death; Gene Mapping in 3 Credits Phages, and Bacteria**

The course is designed to impart in-depth knowledge about the cell-cell interaction and cell communication and factors that contribute to the death of cells known as apoptosis, physiological changes that occur in a transformed cell.

Topics include:

- Role of chromatin in gene expression and DNA damage detection at molecular level
- Cell dynamics, cytoskeleton and cell surface, extra-cellular matrix, cell-cell interaction and cell matrix interaction
- Cell differentiation
- Hormones and growth factors, apoptosis
- Cell cycle regulation and cancer: the Biology of oncology; role of p53, p21 and other oncogenes and suppressors; treatment approaches for cancer
- Transformed cell, gene mapping in phages, bacteria: conditional lethal and suppressor mutations
- Control of gene expression in bacteria, genetics of biosynthetic pathways
- Transposons in prokaryotes and eukaryotes, detection of DNA damage at molecular level

### **BTC 521: Genetically Modified (GM) Crops, Biosafety and 3 credits Intellectual Property Rights**

The course gives emphasis on global differences in acceptance or lack of it of GM food crops in the backdrop of national culture and history, economic conditions, and government initiatives or responses related to the issue.

Topics include:

- Risk perception related to the precautionary approach, benefits of GMOs, public acceptance, case study: the Monarch Butterfly, StarLink™ corn
- Introduction to biosafety concept and its risk, transgenesis in plants
- Risk for animal or human health - toxicity and food quality/safety, allergies, pathogen drug resistance (antibiotic resistance)
- Risk for agriculture - weeds or superweeds, alteration of nutritional value (attractiveness of the organism to the pests), reduction of cultivars (increase of susceptibility) and loss of biodiversity
- Risk for the environment - persistence of gene or transgene or transgene products, resistance/tolerance of target organism or susceptibility of non-target organisms, increased use of chemicals in agriculture, unpredictable gene expression or transgene instability
- General concerns - loss of familiarity, higher cost of agriculture, field trials not planned for risk assessment, ethical issues (labelling)
- Critical assessment of biosafety rules operating in developing countries and the importance of its strict enforcement to protect the population of the third world countries from harmful effects of indiscriminate introduction of GM products
- Global status of acceptance or lack of it regarding GM food crops
- Critical evaluation of "Golden" rice and its Bangladesh version BRRI Dhan-29 evolved at IRRI by Bangladeshi scientists
- Case studies to examine in-depth the interplay of these factors particularly in the context of the developing world
- Convention on biological diversity (CBD), Cartagena Protocol
- Biosafety regulations to protect nature, growers and consumers interest and national interest, biosafety regulations in Europe, Canada, EU and different countries in the Asia and the Pacific region
- National biosafety guidelines of Bangladesh, biosafety framework, biosafety clearing house
- Public perception and biotechnology
- Intellectual property rights-categories of IP, patents, international legal framework, WTO
- TRIPS-the significance of horizontal provisions in the TRIPS agreement

- Existing TRIPS flexibilities and exceptions: checks and balances
- Indigenous community knowledge and TRIPS
- Importance of IPR for protecting biodiversity and biotech products

**BTC 550 Research Project (Thesis)****6 credits**

All students will be required to do a research project of 6 credits during one full semester. The research project can be carried out either at BRACU or at any other university or research institutes under the joint supervision of a BRACU biotech faculty and a recognized professor/biotechnologist of the concerned institution. A student will have the option of choosing her/his potential guide and the problem she/he will undertake in consultation with the Coordinator, Biotechnology Programme of BRACU and the final decision about her/his choice of guide(s) and the topic will rest on the Chairperson of the Department.

**MAT 501: Mathematics for Decision-making****3 credits**

This course introduces students to key techniques for using data to make informed management decisions. Topics include elements of algebra, number fields, linear and non-linear inequalities, functions, set, analytical model, logarithm limit, differential and integral calculus, matrix and linear programming. The course emphasizes managerial applications of mathematical tools in such areas as operations management, marketing, and finance. *Prerequisite: MAT 091 or equivalent*

**STA 501: Business Statistics****3 credits**

This course introduces the statistical methods used in the analysis of data from experiments. These methods, collectively known as the analysis of variance, provide an important addition to the standard suite of regression techniques. Specific important topics covered include least squares estimation, probability, probability distributions, residuals and outliers, tests and confidence intervals, correlation and autocorrelation, collinearity, and randomization. Emphasis is given on construction of models, interpretation of results, and critical evaluation of assumptions. *Prerequisite: STA 091 or equivalent*

**STA 510: Research Methodologies****3 credits**

This course introduces students with the basic elements and process of research. Topics include preparing a research proposal, problem formulation, research design, data collection methods and analysis, hypothesis testing, correlation and regression analysis, and analysis of variance. Special attention is given to business research. *Prerequisite: STA 501 or equivalents.*

## BRAC Business School

### DESCRIPTION OF COURSES

### MASTER OF BUSINESS ADMINISTRATION (MBA)

#### FOUNDATION COURSES

##### **ENG 092: Basic Course in English Language**

This course provides an introduction to business vocabulary, language, writing and verbal skills. Topics include anatomy and construction of sentences, spelling, summarizing, comprehension, common business vocabulary, elements of good writing, and speaking. *Non-credit (equivalent to 3 credits). Prerequisite: None*

##### **MAT 091: Basic Course in Mathematics**

This course is for MBA candidates whose mathematical skills are insufficient for the core curriculum courses. This course covers basic arithmetic and algebraic skills (manipulation of exponents and other symbols, expressing and plotting of functions, solving simultaneous equations etc.), basic trigonometry, and the basic notions and techniques of differential and integral calculus. *Non-credit (equivalent to 3 credits). Prerequisite: None*

##### **STA 091: Basic Course in Statistics**

This course introduces statistical ideas as they apply to managers. Topics covered in the course include Collection, Organization and Presentation of data, Measures of central tendency, measures of dispersion, Skewness and Kurtosis, Correlation and Regression, Interpolation and Extrapolation, Time series analysis. Introduction to probabilities. *Non-credit (equivalent to 3 credits). Prerequisite: None*

##### **ITS 093: Basic Course in Business Computing**

Introduces the students to the nature, operation, uses and potential of computer in business organizations. Topics include introduction to hardware and software technology, word processing, database management, spreadsheets, and electronic communication. Learning by practice is emphasized. *Non-credit (equivalent to 3 credits). Prerequisite: None*

#### Core Courses

##### **ACT 501: Financial Accounting & Analysis**

**3 credits**

This course is designed to develop students' ability to read, understand, and use corporate financial statements. The course is oriented towards the use of financial accounting data and emphasizes the reconstruction and interpretation of economic events from published accounting reports. The course introduces participants to the fundamental concepts, terminology and techniques of financial accounting needed to analyze a corporate annual report. Topics include the balance sheet; the income statement; the statement of cash flows; financial statement analysis; liquid assets; inventories; fixed assets; liabilities; and owner's equity. The course will provide a brief overview of framework, concepts, and tools for analyzing financial decisions based on fundamental principles of modern financial theory. *Prerequisite: BUS 503 or equivalent.*

##### **ACT 502: Managerial Accounting & Control**

**3 credits**

In this course, students work to develop the knowledge and skills to be an intelligent user of accounting information for managerial position in the organization. This skill becomes one of the foundations of a sound decision making process. Topics include: concept of cost element, cost classification, methods of costing and break-even analysis, budgeting and budgetary control, product costs, joint costs and other uses of accounting information. *Prerequisite: ACT 501 or equivalents.*

**BUS 501: Business Law****3 credits**

The course provides the students an orientation in the role of business related laws in decision-making and in dispensing managerial responsibilities. It includes both commercial laws (contract, agency, sale of goods, negotiable instruments, insolvency, company law etc.) and the industrial laws (labor laws, payment wages, factories act, workmen compensation, industrial disputes, trade union act etc.). The course also extends its emphasis on laws governing businesses, shareholders, officers, companies, financial institutions, bill of exchange, bankruptcy, environmental protection, information and consumer protection.

*Prerequisite: None*

**BUS 502: Managerial Communication****3 credits**

This course will help the students to think strategically about communication in the managerial world. The course provides students with practice and feedback on the writing and presentation skills required implementing their strategies. Audience analysis and situation specific types of communication are emphasized in the course. By focusing extensively on both message and audience, students will learn to express themselves coherently and succinctly. The course explores the use of media types and deals with job search and interview skills. Also includes discussion and practice of body language including manners and etiquette.

*Prerequisite: None*

**BUS 503: Environment and Business****3 credits**

This course addresses managerial issues in the social, political, legal, and ethical environment of business. It examines the interactions between the environment and the firm as well as the consequent changes that have resulted in consumer attitudes, laws, regulations and taxes. The course illustrates how managers are called upon to interact with the public and governments in local, national, and international settings. Topics include integrated strategy, activists and the media, legislation affecting business, intellectual property, Internet privacy, and international trade policy. *Prerequisite: None*

**BUS 510: International Businesses****3 credits**

The course requires students to Identify, analyze, and resolve managerial issues in the context of international business environment; Students are introduced to international finance, economics, and marketing, International organizations and regulatory bodies. Emphasis is placed on global business strategy and International law. Emphasis will also be given on problems of adaptation to different sociological, cultural, legal, political, and economic environment. *Prerequisite: ECO 502 & BUS 503 or equivalents*

**ECO 501: Managerial Economics****3 credits**

This course covers microeconomic concepts relevant to managerial decision-making. Topics include demand and supply analysis; pricing; cost and production; utility theory; supply and demand; competition; market behavior; production theory; perfect competition; public goods; oligopoly; reputation and credibility; risk aversion and risk sharing; hidden information and market signaling; moral hazard and incentives; and transaction cost economics. Focus of the course is on applications of the economic concepts to managerial strategy and public policy, with emphasis on competition, market power, and externalities. *Prerequisite: MAT091 & STA091 or equivalents.*

**ECO 502: Macroeconomics & Business Forecasting****3 credits**

The purpose of this course is to train the students to think systematically about the current state of the economy and macroeconomic policy and to be able to evaluate the economic environment within which business and financial decisions are made. The course emphasizes the use of economic theory to understand and forecast the workings of financial markets and the operation and impact of government policies. Specifically, the course studies the determinants of the level of national income, employment, investment, interest rates, the

supply of money, inflation, exchange rates, and the formulation and operation of stabilization policies. *Prerequisite: ECO 501, STA 501, or equivalents.*

**HRM 501: Organizational Behavior & Leadership** **3 credits**

This course relates existing theory and research to organizational problems by reviewing basic concepts in the following areas: individual motivation and behavior, interpersonal communication and influence, small group behavior, inter-group conflict and cooperation, organizational structure, and relations between organizations and environments. The course also focuses on relative effectiveness of various leadership styles and power tactics from managerial point of view. *Prerequisite: MGT 501*

**ITS 501: Computer Programming** **3 credits**

This course introduces the students to the structured programming concepts and program development process. A procedural language is used to solve problems from business situations. Emphasis is given on database management with reference to various packages. Topics include problem analysis, development of algorithm, flow charts, program development, report writing, testing, and finalization. Project work is emphasized. *Prerequisite: ITS 093 or equivalent*

**ITS 510: Information Management** **3 credits**

This course introduces students to the nature of information as a resource in the work place. It provides an overview of planning and managing information and helps students to understand information flow in an organization. The course also investigates how technology is changing the way we communicate and make decisions. *Prerequisite: BUS 503 or equivalents.*

**MAT 501: Mathematics for Decision-making** **3 credits**

This course introduces students to key techniques for using data to make informed management decisions. Topics include elements of algebra, number fields, linear and non-linear inequalities, functions, set, analytical model, logarithm limit, differential and integral calculus, matrix and linear programming. The course emphasizes managerial applications of mathematical tools in such areas as operations management, marketing, and finance. *Prerequisite: MAT 091 or equivalent*

**MGT 501: Management of Organizations & Systems** **3 credits**

The course is designed to develop analytical skills and demonstrates how important it is for the successful manager to view his or her functional task from a generalist standpoint. The course provides a general analysis of management, basics of planning, organizing, and controlling, leadership techniques, and interpersonal relations in business and non-business organizations. *Prerequisite: BUS 503 or equivalents.*

**STA 501: Business Statistics** **3 credits**

This course introduces the statistical methods used in the analysis of data from experiments. These methods, collectively known as the analysis of variance, provide an important addition to the standard suite of regression techniques. Specific important topics covered include least squares estimation, probability, probability distributions, residuals and outliers, tests and confidence intervals, correlation and autocorrelation, collinearity, and randomization. Emphasis is given on construction of models, interpretation of results, and critical evaluation of assumptions. *Prerequisite: STA 091 or equivalent*

**STA 510: Research Methodologies** **3 credits**

This course introduces students with the basic elements and process of research. Topics include preparing a research proposal, problem formulation, research design, data collection methods and analysis, hypothesis testing, correlation and regression analysis, and analysis of variance. Special attention is given to business research. *Prerequisite: STA 501 or equivalents.*



## FUNCTIONAL COURSES

### **MKT 501: Marketing Management**

**3 credits**

The objectives of this course are to introduce students to the substantive and procedural aspects of marketing management, and to sharpen skills for critical analytical thinking and effective communication. Specifically, the course introduces students to marketing strategy and to the elements of marketing analysis such as customer analysis, competitor analysis, and company analysis. The course covers the basic nature of the marketing philosophy, market opportunities and threats, identification of marketing strengths and weaknesses, and the major marketing tools available for building the overall marketing program. *Prerequisite: ECO 501 or equivalents.*

### **OPN 501: Operations Management**

**3 credits**

This course focuses on basic managerial issues arising in the operations of both manufacturing and service industries. The objectives of the course are to familiarize students with the problems and issues confronting operations managers, and to introduce language, conceptual models, and analytical techniques that are broadly applicable in confronting such problems. Topics include project planning, risk evaluation, forecasting, scheduling, product-process matrix; inventories; small batch production and new manufacturing technologies. *Prerequisite: MAT 501, STA 501, or equivalents, ACT 502.*

### **HRM 502: Human Resource Management**

**3 credits**

This course provides a framework for understanding and thinking strategically about employment relations and the management of human resources in organizations. The course draws on insights from the social sciences to explore how economic, social, psychological, legal, and cultural forces influence employment relations. Specific topics include: recruitment and selection; performance evaluation; compensation and benefits; promotion; job design; training; layoffs, retention, turnover; and the human resource implications of various strategies. *Prerequisite: HRM 501 or equivalents.*

### **FIN 501: Financial Management**

**3 credits**

This course covers the foundations of finance and uses these foundations to analyze many of the important financial decisions made within firms. The course provides participants with the basic analytical tools to address the valuation problems. Topics include financial markets and net present value; capital budgeting; bond valuation; valuation of equity; valuation of companies; estimating continuing values and alternatives to discounted cash flow; portfolio theory; capital structure and the value of a firm; the cost of capital; and market efficiency. *Prerequisite: ACT 502 or equivalents.*

## CAPSTONE COURSE

### **MGT 601: Strategic Management**

**3 credits**

This capstone course deals with the overall management of an organization. It is concerned with the determination of the strategic direction of the firm, as well as the management of strategy processes within the firm. The primary objective of the course is for the student to develop a perspective of the general manager's role and responsibilities. It deals with developing the capability to understand a firm's strategic situation in depth and to develop viable alternatives for dealing with the key issues facing it. The relationship between organization structure and strategy are examined, and tools are developed for examining the firm's industry and competitive environment. Strategy at the business unit, divisional, and corporate level are studied. This course builds on other core courses. *Prerequisite: FIN 501, MKT 502, HRM 502, OPN 501*

## CONCENTRATION AREA COURSES

Each course in the concentration area carries 3 credit including the Field Studies Courses. The concentration courses can be taken only after meeting the pre requisites and credit hour requirements.

### BANK MANAGEMENT

#### **BNK 601: Banking Law and Practice**

**3 credits**

This course provides an overview of the Bangladesh banking system. Topics will include Central and state regulation of traditional banking activities, regulation of bank ownership, geographic expansion, non-banking activities, securities activities, antitrust issues, bank supervision, consumer protection, and banking operation issues. *Prerequisite: None*

#### **BNK 602: Commercial Bank Management**

**3 credits**

The course has three basic objectives. First, to familiarize the student with the management of commercial banks. The policies that will lead towards the maximization of stockholder wealth will provide the framework for the course. Second, it would help the student understand the need of bank financing for business firms. The course includes Banking Fundamentals, Review of Finance, Asset and Liability Management, Capital Requirements, Cost of Bank Funds, Managing Liquidity Needs. Investment Management, Hedging Interest Rate Risk. Credit Policies, Commercial & Consumer Loans. Loan Profitability Analysis. *Prerequisite: BNK 601 or equivalents.*

#### **BNK 603: Management of Specialized Banks**

**3 credits**

Topics include services of specialized banks, types of coverage organization and operation of specialized banks, environment of specialized banks, risk and return potential. The course focuses more on management issues of specialized banks than on technical details. This course will deal primarily with the operations and services of five specialized banks in Bangladesh: Bangladesh Shilpa Bank, Bangladesh Shilpa Rin Sangstha, Bank of Small Industries and Commerce Bangladesh LTD, Bangladesh Krishi Bank and Rajshahi Krishi Unnayan. The main focus of the course will be on the role of these banks on the rural, agricultural and the industrial sector. Emphasis will also be placed upon the environment of specialized banks, risk and return potential of these banks and the extent of the coverage of their operations. *Prerequisite: FIN 501 or equivalents.*

#### **BNK 604: Financial Analysis**

**3 credits**

The primary focus of this course is on equity (share) valuation, with some attention given to credit analysis and the valuation of debt. The methods of fundamental analysis will be examined in detail and applied in cases and projects involving listed companies. Topics include models of shareholder value and a comparison of accounting and discounted cash flow approaches to valuation, methods of financial statement analysis, testing the quality of financial reports, designing value-added metrics, forecasting earnings and cash flows, pro-forma analysis for strategy and planning, and the determination of price/earnings and market-to-book ratios. The analysis will be carried out from the perspective of both the outside security analyst and the corporate financial analyst. *Prerequisite: ACT 501 or equivalents.*

#### **BNK 605: Project Preparation and Appraisal**

**3 credits**

This course deals with identification, preparation and appraisal of projects. Basic techniques of financial planning, analysis, appraisal and organizational aspects of projects are covered. *Prerequisite: FIN 501 or equivalents.*

#### **BNK 606: International Banking**

**3 credits**

This course investigates international financial institutions and instruments. The course introduces the operations of the international banking industry and shows their practical application. The course will include the following topics. International Banking: Introduction,

Trends and Strategies, Recent patterns of international banking activities, Value creation in international banking, Country risk analysis in international banking. *Prerequisite: BNK 601 or equivalents.*

**BNK 607: Marketing of Bank Services**

**3 credits**

The course is a study of concept, strategy and marketing of bank services. It focuses on application of the marketing management principles, tools and techniques in the marketing of bank services. Topics covered are difference between product and bank service marketing, service as a process and performance, bank service market segmentation, positioning strategy, tools for service for marketers, role of technology in services, marketing mix, marketing communication, role of service personnel, service quality and productivity, integration of service marketing, operation and human resource. *Prerequisite: MKT501 or equivalents.*

**BNK 608: Corporate Finance**

**3 credits**

This course offers an overview of finance from the perspective of the corporate financial manager. The investment side will include portfolio selection and management decisions, capital budgeting under risk, and M&A. The financing side comprises decisions about capital structure-how much debt, relative to equity, is optimal for a particular firm-as well as decisions about what kind of debt, and what kind of equity, is right for the firm. *Prerequisite: FIN 501 or equivalents.*

**BNK 609: Field Studies in Banking**

(Please See NOTE # 2 at the end of descriptions of courses)

**ENTREPRENEURSHIP**

**ENT 601: Entrepreneurial Process and Principles**

**3 credits**

This course covers the entrepreneurial process from conception to birth to adolescence of a new venture. It concentrates on attributes of entrepreneurs/entrepreneurs searching for opportunities, and gathering resources to convert opportunities into businesses. Students learn to evaluate new ventures and develop a business plan to pursue those ventures. It is stressed throughout that new venture development can happen both within and outside an existing organization. *Prerequisite: All functional area courses.*

**ENT 602: Venture Capital Management**

**3 credits**

The course integrates the material introduced in MBA core courses and applies it to the design and evaluation of new ventures. The purpose of this course is to explore the many dimensions of new venture creation and growth and to foster innovation and new business formations in independent and corporate settings. The course addresses both a theoretical perspective on venture initiation and the application of writing an actual business plan. The course is the required entry point for all students interested in a concentration in Entrepreneurial Management and, in turn, is a prerequisite to all advanced entrepreneurial courses. *Prerequisite: FIN 501, ENT 601 or equivalents.*

**ENT 603: New Venture and Business Development**

**3 credits**

Provides students with clinical experience in conducting field research and consulting projects for companies. Projects may include new business startup, corporate business development, and high tech consulting assignments. The course stresses the understanding of the new venture and business development market and developing skills in assessing company needs, writing proposals, and conducting focused business research projects. Fulfills experiential requirement for new venture and business development major or minor. *Prerequisite: ENT 601 or equivalents.*

**ENT 604: Small Business Management****3 credits**

This course provides an exploration into the fundamentals of effective small business management. Topics such as growth, advertising, financial analysis, budgeting, purchasing, inventory management, and financial control are also covered. This course also looks at some of the special issues facing small business owners and managers: technology, crime, risk management, family business, ethics, and the global market place. *Prerequisite: MGT 501 or equivalents.*

**ENT 605: Entrepreneurial Marketing****3 credits**

This course focuses on the key marketing concepts and methods relevant for entrepreneurs. In particular, it covers the marketing elements of new venture initiation (including a business plan), as well as marketing decisions for small and growing organizations. Topics include product/service design, assessment of market potential, creation of successful distribution relationships, and new product pricing. In contrast to the product development course, the emphasis here is on a new startup business rather than a new offering from an existing business. Topics covered in this course also include low-budget or no-budget market research, successful strategic alternatives for small business, alternatives to high-cost advertising (e.g., direct marketing, alternative media, and personal selling), segmentation, and targeted marketing. Students will prepare a marketing plan for an entrepreneurial organization of their choice, possibly for a new venture they are considering. *Prerequisite: MKT 501 or equivalents.*

**ENT 606: Corporate Entrepreneurship****3 credits**

This course is an in depth study of the entrepreneurship process. This focus will include the corporate necessity of entrepreneurship in corporate growth, creativity and innovation, the development of venture plans, the techniques for implementation entrepreneurial projects. *Prerequisite: MKT 501 or equivalents.*

**ENT 607: Field Study in Entrepreneurship****3 credits**

Field Study in Entrepreneurship immerses graduate students in the planning and execution of complex entrepreneurial activities in a small existing or start-up business. Activities involve new business formation, direction setting, growth, or turnaround. While students will be under the supervision of the faculty, they are expected to display responsible independent action and to interact frequently with a business founder, owner, or chief executive. Students must apply concepts learned in other business courses to their field study experience and to report orally and in written for the lessons learned. *Prerequisite: ANY 3 ENT courses.*

**FINANCIAL MANAGEMENT****FIN 601: Capital Budgeting****3 credits**

This course extends the discussion, considering practical problems of implementation, evaluation of uncertainty in the cash flows, and various interdependencies that influence the decision. The course will integrate theory and practice, facilitated through the use of spreadsheets and simulation analysis, in order to provide the student with cutting-edge capital budgeting analysis tools. The theme of creating value for shareholders will permeate the entire course. Case analysis and presentation are a central focus of the course. *Prerequisite: FIN 501 or equivalents.*

**FIN 602: Corporate Financial Strategy****3 credits**

This course examines how corporate and financial strategies can lead to the creation and maintenance of shareholder value. Value transfer and destruction are also explored. Numerous examples are used to illustrate the practical application of strategies and to examine the role of key value drivers. The issues of effectively communicating strategies to the financial markets and providing incentives to create value are also explored. *Prerequisite: FIN 501 or equivalents.*

**FIN 603: Financial Institutions and Markets****3 credits**

This course examines financial market instruments, intermediaries, and financial risk management. Its main focuses are on the nature of the intermediation process, the unique features of intermediaries and instruments, and the trends in the development of new instruments in financial risk management. It also emphasizes the risk management by financial institutions. *Prerequisite: FIN 501 or equivalents.*

**FIN 604: Investment Management****3 credits**

This course surveys major investment problems. Factors affecting the term structure and risk structure of yields on financial claims are identified and analyzed. The course focuses on: the development of principles of personal and institutional portfolio management; modern capital asset pricing theory; valuation discussions on models for common stock prices. The institutional structure of the investment markets in is viewed, with special emphasis on the role of security exchanges and the impact of institutional investors. Emphasis is placed on the efficiency of financial asset markets in adjusting to information entering the marketplace. *Prerequisite: FIN 501 or equivalents.*

**FIN 605: Applied Portfolio Selection****3 credits**

This course puts emphasis on management of existing portfolio investments, the Reese Investment Fund. Each student is responsible for analyzing an industry group and the associated firms. The major focus of the course is conducting a detailed security analysis and presenting the findings to the Fund's Board of Advisors, which is composed of investment professionals. In essence, the students function as an independent investment management group for the portfolio. *Prerequisite: FIN 501 or equivalents.*

**FIN 606: Financial Intermediation****3 credits**

This course provides a systematic analysis of the structure and operations of financial markets and institutions and the interrelationships among financial, real and monetary sectors in a market oriented economy. The course also combines economic analysis with a description of the operations of financial intermediations, so that student is provided not only with a picture of what financial institutions are but of why and how they operate in the manner they do. *Prerequisite: FIN 501 or equivalents.*

**FIN 607: Real Estate Finance****3 credits**

Numerous innovative and complex financial instruments have been created with real estate as the underlying asset of value. This course will analyze the risk and return characteristics of several of these real estate financial instruments such as mortgage-backed securities, participating mortgages, collateralized mortgage obligations (CMOs), real estate mortgage investment conduits (REMICs), limited partnerships, and real estate investment trusts (REITs). The role of the secondary mortgage markets, the stock markets, and various institutional sources of real estate financing will be examined. *Prerequisite: FIN 501 or equivalents.*

**FIN 608: International Finance****3 credits**

The most pervasive problems faced by international managers are those resulting from currency differences and currency risks. This course applies financial and economic theory to the international financing and investment decisions of corporations, financial institutions and individual investors. Reduction of risk through use of forward exchange markets and hedging will be examined. The various methods of moving liquid assets and their constraints will be considered. Capital budgeting decisions and issues regarding capital structure, where the assets and sources of financing are in different economies, are also studied. An extension of the Capital Asset Pricing Model to an integrated world model is considered. A term paper is usually required. *Prerequisite: FIN 501 or equivalents.*

**FIN 609: Marketing of Financial Services****3 credits**

This course examines the need for marketing in products and services of financial institutions like commercial banks, investment banks, leasing companies, house building finance companies, develops an understanding of the ways in which financial service marketing differs from product marketing, and improves students' understanding of how financial service characteristics affect the marketing function. Students learn to develop and implement marketing plans for financial service organizations. *Prerequisite: FIN 501, MKT 501 or equivalents.*

**FIN 610: Micro Finance****3 credits**

This course is a blend of micro finance theory and practice. It is intended to familiarize students with the basic issues and debates around micro finance. It is also designed to cover some essential tools of micro finance operation, such as financial management, business planning, program evaluation, and human resource management. *Prerequisite: FIN 501 or equivalents.*

**FIN 611: Field Studies in Finance**

(Please See NOTE # 2 at the end of descriptions of courses) 3 credits.

**HUMAN RESOURCE MANAGEMENT****HRM 601: Manpower Planning and Personnel Policy****3 credits**

The aim of this course is to develop a critical understanding of the role of the manpower planning and its personnel policy in modern organizations. The course is designed to equip the students with the techniques of developing personnel policy and implementation. It includes a detailed study of environmental trend analysis, manpower planning models, manpower needs and personal information system to forecast manpower needs and consideration of some indicators of manpower effectiveness. Students must consider historical, economic, cultural, legal, political and other factors before coming to a policy decision. A greater emphasis will be placed on management of labor policy and differences between management and their workforces. *Prerequisite: HRM 502 or equivalents.*

**HRM 602: Career Management****3 credits**

The nature of careers and career development at individual, organizational and societal levels of analysis, considered from personal and managerial perspectives. Explores the linkage between organizational strategy, structure and career system as well as the central role of career management in the effective use of human resources. *Prerequisite: HRM 502, MGT 501 or equivalents.*

**HRM 603: Leadership and Teamwork****3 credits**

This course concentrates on the following topics: Managers vs Leaders, Challenging the process, Inspiring a shared vision, Enabling others to act, Modeling the way, Encouraging the heart, Managing People, Understanding Oneself and Others, Leadership and Team building, Effective Communication, Leadership Behaviors, Stress Management, Managing Organizational Culture., Leading organizational change and managing conflicts. *Prerequisite: HRM 501, HRM 502 or equivalents.*

**HRM 604: Negotiations and Dispute Resolution****3 credits**

The purpose of this course is to introduce students to the theory and techniques of negotiation and mediation processes. The course will begin with a review of negotiation theory. This will be followed by a review of techniques for the design and operation of stakeholder decision-making processes. Case studies and negotiation simulation sessions will be used to illustrate key concepts. After completion of the course, students will have the skills required to design, manage and participate in a stakeholder negotiation and decision-making process. *Prerequisite: HRM 501 or equivalents.*

**HRM 605: Industrial Relations****3 credits**

This course examines how the interactions between and among workers, management, and the state shape and define the structure and experience of work. The course discusses the following topic: Intro to IR Theory, Employment Relations: The Economic Paradigm, IR Dynamics, Theory of Unionism, Nonunion Worker Voice & IR Theory, Alternate Paradigms of Industrial Relations, Comparative IR Theory, Public Policy and IR Theory, Integration and Synthesis. *Prerequisite: HRM 502 or equivalents.*

**HRM 606: Strategic Human Resource Management****3 credits**

Human resource management: meanings and models. The links with strategy. Strategic human resource management and competitiveness. International dimensions of human resource management including examples from the USA, Europe and Developing Countries. The international firm: staffing and policies. Expatriates and intercultural competence. Substantive issues with a focus on employee involvement, human resource flows (including selection, training and development), work systems (designed for motivation and commitment) and modern reward systems. Future issues in human resource management: globalization and the management of diversity. *Prerequisite: HRM 502 or equivalents.*

**HRM 607: Employee Discipline, Discharge and Grievance Settlement****3 credits**

The course deals with policies, principles, procedures and rules to effect and maintain discipline in workforce and to settle grievance. Case studies are extensively used. *Prerequisite: HRM 501, HRM 502 or equivalents.*

**HRM 608: Labor Market and Public Policy****3 credits**

The course will cover main topics in labor economics. The topics that will be discussed in this course are: the Nature of Labor Market Analyses; Labor Market Flows; Labor Market Developments in Selected Industrial Nations, The Basic Static Labor Supply Model. Home Production and Time Allocation Models. Non-Linear Budget Constraints. Family Models. Empirical Analyses, Human Capital and Long-Run Labor Supply. Occupational and Educational Choice, Wages and Earnings. Returns to Experience, Labor Demand: the Basic Theory; Some Extensions; Empirical Evidence, Discrimination and Segmentation, Labor Markets in Transitional Economies. *Prerequisite: ECO 502, HRM 502 or equivalents.*

**HRM 609: Technology and Tools for Managing HR System****3 credits**

This course introduces the best technology and tools for attracting, developing, motivating and retaining a workforce, It considers human resource issues such as recruitment and selection, diversity performance evaluation, compensation and reward systems, teams, worker participation programs. *Prerequisite: ITS 501 or equivalents.*

**HRM 610: Management of Organizational Change****3 credits**

The course aims at providing the students an in depth understanding of nature, purpose, establishment, structure and functioning of organizations and the management process and skills required to manage the organizations effectively. Topics are organizational types, missions and objectives, structure and dynamics, organizational culture, concept, process and environment of management, managerial skill and competence, problem solving and decision-making, management functions-planning, organizing, leading, and controlling. *Prerequisite: HRM 502 or equivalents.*

**HRM 611: Compensation Policy****3 credits**

The course begins by examining functional areas of human resource management including compensation, Compensation and Motivation, Different Rules. It examines in depth the historical development of organized labor, the current structure and characteristics of the labor market and industrial relations, government regulation of the labor market, and recent developments in the area of human resource management. *Prerequisite: HRM 501, HRM 502 or equivalents.*



## **HRM 612: Field Study in Human Resource Management**

(Please See NOTE # 2 at the end of descriptions of courses) 3 credits

### **INFORMATION TECHNOLOGY AND SYSTEMS**

#### **ITS 601: Advanced Programming**

**3 credits**

This course enables students to design and implement efficient object-oriented solutions using C++. Emphasis is placed on the improvement of C++ code quality and reusability with design patterns and proven idioms. Students are also taught how to build robust, efficient libraries using namespaces, templates. Students are required to use the standard C++ library, including the Standard Template Library (STL). *Prerequisite: ITS 501 or equivalents.*

#### **ITS 602: Database Management**

**3 credits**

This course focuses on the relational database design and SQL. Database management system used in this course, MS-Access, is introduced only as a tool to practice designing database and understand the theory. It is expected that a student with a good understanding of the relational database theory can quickly learn how to use any relational DBMS in the future. This course also teaches the fundamentals of application design with various examples. New development in this field, such as Internet and intranet databases, data warehousing, Object Oriented DBMS, distributed processing, ODBC, and SQL3, will also be introduced. *Prerequisite: ITS 501, ITS 510 or equivalents.*

#### **ITS 603: Management Information Systems**

**3 credits**

This course introduces the student to the use of personal computers for solving business problems, including the use of spreadsheets, databases, accounting, communications and expert systems software packages. The course surveys the different types and roles of information systems found in organizations today, including the strategic role of Information Technology (IT) in gaining competitive advantage. An introduction to artificial intelligence and expert systems is also included. *Prerequisite: ITS 501. ITS 510 or equivalents.*

#### **ITS 604: Electronic Commerce**

**3 credits**

This course is intended to provide MBA students with an overview of the electronic commerce phenomenon currently sweeping through the global economy. The course introduces contemporary management philosophies as they have come to be used for the marketing, selling, and distribution of goods and services through the Internet, World-Wide-Web, and other electronic media. Much has happened in this arena and new developments continue at a high rate. *Prerequisite: ITS 501 or equivalents.*

#### **ITS 605: Systems Analysis, Design and Implementation**

**3 credits**

This course emphasizes on the structured analysis and logical design of business information systems. Techniques for stating and analyzing requirements are introduced. Emphasis is also put on logical design and specifications of system outputs, inputs, files, and processing, procedures for system cost and benefit analysis, life-cycle concept of information system development and alternative system structures and alternative system evaluation. The course covers design of program structures, subsystems, and user interfaces. Implementation, conversion problems, and evaluation of system performance are also examined. *Prerequisite: ITS 501, ITS 510 or equivalents.*

#### **ITS 606: Decision Support Systems**

**3 credits**

This course provides experience in the construction of DSS that support individual and organizational decision processes. The focus is on three types of DSS. The first is DSS that are based on databases and decision models, such as spreadsheet model simulations. The second is intelligent DSS, and especially rule-based systems. The third focus is on group DSS for conducting collaborative work and on executive information systems. *Prerequisite: ITS 501, ITS 510 or equivalents.*



**ITS 607: Applied Management Science****3 credits**

This course deals with the management science approach in organizations, including modeling and rational approaches to decision-making process. Emphasizes analysis and communication, using real world application and cases. Topics include: linear programming and its extensions; integer programming; network problems; decision analysis as applied to tactical and strategic business decisions. Implementation using existing software packages for management science to understand concepts and solve various managerial problems is an integrated part of this course. *Prerequisite: MAT 501, STA 501, OPN 501 or equivalents.*

**ITS 608: Management of Information Technology****3 credits**

This course examines several of the major IT issues facing today's managers: Keeping pace with the rapidly emerging new information technologies, including artificial intelligence; managing the acquisition of new information systems in the age of outsourcing; finding an appropriate role for electronic commerce; managing the impact of IT on human resources; and maintaining security in a networked environment. Issues examined vary, based on relevance and student interest. *Prerequisite: ITS 501, ITS 510 or equivalents.*

**ITS 609: Field Studies in Information Technology & Systems**

(Please See NOTE # 2 at the end of descriptions of courses) 3 credits.

**MARKETING MANAGEMENT****MKT601: Brand Management****3 credits**

This course focuses on the role of products in the marketing mix. In particular, topics explored will include the creation of new products, the deletion of obsolete products and the management of mature products in the firm's product line. Systematic models of new product planning are studied to facilitate the integration of new offerings with the existing product line. Instruction includes lectures, case analysis and textbook discussion. *Prerequisite: MKT 501 or equivalents.*

**MKT 602: Services Marketing****3 credits**

This course examines the need for marketing in service industries, develops an understanding of the ways in which service marketing differs from product marketing, and improves students' understanding of how service characteristics affect the marketing function. Students learn to develop and implement marketing plans for service organizations. *Prerequisite: MKT 501 or equivalents.*

**MKT 603: Marketing Research****3 credits**

This course develops a managerial appreciation toward marketing research. The steps of the research process are delineated, starting from recognizing and specifying the informational needs of the decision-maker and definition of the problem, through research design, sample selection, preparation of the instrument, data collection, data reduction, analysis, presentation and follow-up. Integration of the concepts discussed is achieved through considering the broader requirements of a marketing information system. The method of instruction includes cases, discussion of readings and use of computer analysis packages. A major term project is required. *Prerequisite: MKT 501, STA 501 or equivalents.*

**MKT 604: Marketing in the Global Economy****3 credits**

This course satisfies two interrelated objectives: to improve the students' marketing decision-making ability through the solution of complex multinational marketing problems; and to increase the student's sensitivity to different cultural, socio-economic and legal environments encountered in the international marketplace. The course uses readings, cases and a group project. *Prerequisite: MKT 501, BUS 510 or equivalents.*

**MKT 605: Consumer Behavior****3 credits**

To compete effectively in the marketplace, every firm needs a business strategy. Ultimately, strategy is deemed successful if the firm can convince customers to buy more of its products and less of the competitor's. This happens only if the firm markets a product that satisfies the needs of consumers through an understanding of the psychological and environmental forces influencing consumer behavior. *Prerequisite: HRM 501, MKT 501 or equivalents.*

**MKT 606: Marketing Policy and Strategies****3 credits**

This course familiarizes the student with the range of decisions involved in planning marketing strategies and policies for the future, and develops skills in using a variety of analytical frameworks for making such decisions. It is targeted at final-semester marketing or strategic management majors. *Prerequisite: MKT 501 or equivalents.*

**MKT 607: New product Development****3 credits**

This course introduces the theory and practice of market led innovation and new product level through all aspects of the new product development process, from idea generation through to product launch and post-launch evaluation. *Prerequisite: MKT 501 or equivalents.*

**MKT 608: Marketing Promotions****3 credits**

This course will provide the student with an overview of the integrated marketing communications process. Students will learn to manage the formal communications process. Attention will be paid to developing communication plans and understanding strategic applications of advertising, sales promotion and public relations tools. Students should expect to gain knowledge of communications theory as well as practical application through study of texts and real world cases. *Prerequisite: MKT 501 or equivalents.*

**MKT 609: Physical Distribution Management****3 credits**

The course deals with certain aspects of traffic management and physical distribution management involved in getting goods and services from production to user including packaging, materials handling, inventory control and fixed facility location, traffic organization, carrier selection, determination of rates, classification and control. *Prerequisite: MKT 501. OPN 501 or equivalents.*

**MKT 610: Sales Force Management****3 credits**

A critical examination of the activities, functions, challenges and opportunities of the sales force manager. The sales management function will be related to other sectors of the promotion mix as well as the remainder of the marketing mix. An examination of the long-term selling process will provide a foundation for this course. *Prerequisite: MKT 501 or equivalents.*

**MKT 611: Electronic Marketing****3 credits**

The purpose of this course is to provide *the students* with a foundation in channels management, with a specific emphasis on one direct marketing technique-electronic commerce. When the students complete this course *they* should have an understanding of: the fundamental concepts in channel management, how distribution fits into the total marketing picture, how to use distribution channels as a strategic tool, why electronic commerce is getting increasing attention as a channel option, and how to design an effective electronic commerce distribution strategy. *Prerequisite: MKT 501, ITS 510 or equivalents.*

**MKT 612: Field Studies in Marketing****3 credits**

(Please See NOTE # 2 at the end of descriptions of courses)

## **OPERATIONS MANAGEMENT**

### **OPN 601: Business Process Design**

**3 credits**

This course presents a top down, leveled technique for building Business Process Models. The highest process level defines the scope of a project and is captured in a Context Level Dataflow Diagram. The next level breaks down the high level processes in Decomposition Diagrams and Leveled Dataflow Diagrams to describe "What" the business processes are that are essential to the business. Once the essential business model has been completed, analysts learn to scope the design area and use workflow diagrams to depict AS IS and TO BE scenarios. These diagrams take each essential process and describe "How" the process is or should be performed. *Prerequisite: OPN 501 or equivalents.*

### **OPN 602: Supply Chain Management**

**3 credits**

This course deals with logistic systems and supply chains, with particular attention to electronic commerce, new approaches to logistics management and the use of technology to integrate elements of the supply chain. The course will look into the terms, concepts, and principles of logistics and supply chain management. Introduce Methods of analyzing logistics and supply chain problems and opportunities. Analyze the impact of information technology on logistics management. Emphasis is put on the Study of transport and other physical processes in logistics operations and the role of partnerships with vendors and customers. *Prerequisite: OPN 501 or equivalents.*

### **OPN 603: Project Management**

**3 credits**

This course covers the strategic, organizational and operational aspects of managing projects. Students learn to manage the technical, behavioral, political and cultural aspects of temporary groups performing unique tasks. Topics covered include: defining deliverables, formulating projects strategy, effective group organization and management, dynamically allocating resources, managing without authority, and resolving conflict. Traditional cost and time management techniques are covered using contemporary software packages. *Prerequisite: FIN 501, MGT 501 or equivalents.*

### **OPN 604: Strategic Operations Management**

**3 credits**

This course studies how companies may use the operations function to create a strategic competitive weapon. Current issues and methods used in the management of the production of goods and services in the modern enterprise will be considered, with emphasis on the need to apply appropriate strategies and methods in different manufacturing and service situations and in frequently changing competitive environments in a global setting. Topics considered include operations strategy, managing quality, facility location and layout, integrating technology, forecasting, operations planning and control, capacity management, inventory management, project management, and a review of modern production systems, including MRP, just-in-time production, and synchronous manufacturing. Other topics may be considered if time permits. *Prerequisite: OPN 501, MGT 601 or equivalents.*

### **OPN 605: Quality and Productivity Management**

**3 credits**

The concepts, principles, and tools known as Total Quality Management used in organizations of all types to improve customer and consumer satisfaction are covered. Content includes a discussion of quality systems in production and service environments, quality management philosophies, and how managers can plan, organize, and maintain quality in all functions of their organization. *Prerequisite: OPN 501 or equivalents.*

### **OPN 606: Production Planning and Control**

**3 credits**

Production planning and control involve with the integration of numerous activities and processes to produce products and services in a highly competitive global environment. Many companies have experienced a decline in market share as a result of their inability to compete

on the basis of productivity, cost or quality. Most now agree that high performance in planning, control of manufacturing, and distribution is essential for competitive success and long-term survival. This course considers the production planning and control functions from a managerial perspective. Emphasis is given to quantitative analysis of problems arising in the management of production systems. *Prerequisite: OPN 501 or equivalents.*

**OPN 607: Inventory and logistics Management** **3 credits**

This course is designed to investigate the concepts in design and control of supply chains. Inventory management is at the core of this course together with logistics network design, distribution strategies, information sharing, coordination, and decision support tools. The course is augmented with case studies to facilitate discussion and to gain understanding of basic principles. *Prerequisite: OPN 501 or equivalents.*

**OPN 608: Operations Research** **3 credits**

This course emphasizes analytical, experimental and quantitative approaches to solution of business problems. Emphasis is also put on the study of scientific techniques for decision-making in business, industry and government. Most operations research projects involve elements of data collection and analysis, development of skills in formulating and solving mathematical models dealing with inventory, waiting lines, game theory, linear programming, transportation and other decision tools. *Prerequisite: OPN 501, STA 510 or equivalents.*

**OPN 609: Field Studies in Operations Management** **3 credits**

(Please See NOTE # 2 at the end of descriptions of courses).

NOTE # 1: The courses and curriculum are subject to change to keep pace with changing requirements of local, regional and global educational and business environment.

NOTE # 2: Field study creates an opportunity for the students to learn out of class room and in the work place which expose them to real life business situation. A student choosing this course is required to select a problem or a topic in the area of concentration, equip himself with theoretical framework, conduct an investigation and write a report under the supervision of a faculty. The report is presented and defended. The field based learning conducted in an academic setting help students personalize their education as they get familiar with business environment, network with people in business organizations and gain experience in his chosen field. Supplemented with internship, this course gives an on-job-experience, which is valuable for a student without previous job experience and enables him to become more competitive in the job market.

## DESCRIPTION OF COURSES

### **MASTER IN BANK MANAGEMENT (MBM)**

#### **PREPARATORY COURSES**

##### **ENG 092: English Fundamentals**

Drills in basic writing skills: mechanics, spelling, syntax, usages, grammar review, sentence and paragraph writing. Banking correspondences. *Non-credit. Prerequisite: None.*

##### **MAT 091: Basic Course in Mathematics**

This course is for MBA candidates whose mathematical skills are, insufficient for the core curriculum courses. This course covers basic arithmetic and algebraic skills (manipulation of exponents and other symbols, expressing and plotting of functions, solving simultaneous equations etc.), basic trigonometry, and the basic notions and techniques of differential and integral calculus. *Non-credit. Prerequisite: None*

##### **STA 091: Basic Course in Statistics**

This course introduces statistical ideas as they apply to managers. Topics covered in the course include Collection, Organization and Presentation of data, Measures of central tendency, Skews and Kurtosis, Correlation and Regression, Interpolation and Extrapolation, Time series analysis. *Non-credit. Prerequisite: None*

##### **ITS 093: Basic Course in Business Computing**

Introduces the students to the nature, operation, uses, and potential of computer in business organizations. Topics include introduction to hardware and software technology, word processing, database management, spreadsheets, and electronic communication. Learning by practice is emphasized. *Non-credit. Prerequisite: None*

##### **BNK 091: Banking Fundamentals**

This course is designed to provide an exposure to the theories of banking and familiarize the students with the techniques deployed in various banking operations. It will cover the various theories as applied in banking such as unit, branch and chain banking, liquidity,-profitability combinations etc., general banking, operational procedures viz, accepting deposits under different types of deposit accounts, providing credit in the form of cash credit (pledge and hypothecation), overdraft and loans, remittance facilities, various types of ancillary services, banker-customer relationship, relationship and transactional banking, retail and wholesale banking, central banking, comparative banking system and Islamic Banking system. *Non-credit. Prerequisite: None.*

#### **FOUNDATION COURSES**

##### **ECO 501: Managerial Economics**

**3 credits**

This course covers microeconomics concepts relevant to managerial decision-making. Topics include demand and supply analysis; cost and production; utility theory; competition; market behavior; production theory; perfect competition; public goods; oligopoly; reputation and creditability; risk aversion and risk sharing; hidden information and market signaling; moral hazard and incentives; and transaction cost economics. Focus of the course is on application of the economic concepts to managerial strategy and public policy, with emphasis on competition, market power, and externalities. 3 credits. *Prerequisite: MAT 091*

##### **ECO 502: Macro Economics and Business Forecasting**

**3 credits**

The purpose of this course is to train students to think systematically about the current state of the economy and macroeconomic policy and to be able to evaluate the economic environment within which business and financial decision are made. The course emphasizes

the use of economic theory to understand and forecast the studies the determinants of the level of national income, employment, investment, interest rates, the supply of money, inflation, exchange rates, and the formulation and operation of stabilization policies.  
*Prerequisite: EC0501*

**BUS 509: Quantative Methods in Business** **3 credits**

The course emphasizes applications of mathematical and statistical tools in managerial decision-making particularly in management of banks, functions, set, analytical model, logarithm limit, differential and integral calculus, matrix and linear programming. Topics in statistics include least squares estimation, probability, probability distributions, residuals and outliers, tests and confidence intervals, correlation and autocorrelation, collinearity, and randomization. *Prerequisite: MAT 091*

**ACT 501: Financial Accounting** **3 credits**

The importance of Financial accounting, Double-entry book-keeping, Evaluating a customer's account, Appraising the trading account, Appraising the profit and loss account, Investment accounts, Budget accounts, Reconciliation statements, Appraising the balance sheet of a business, The balance sheet of a failed business. Analysis of Financial Statements.  
*Prerequisite: None*

**BUS 502: Managerial Communications** **3 credits**

The course provides students' knowledge and practice on the writing and presentation skills required in dispensing their jobs as bank officers. By focusing extensively on both message and audience, students will learn to express themselves coherently and succinctly. The course explores the use of media types and deals with job search and interview giving skills. Also includes discussion and practice of body language including manners and etiquette. Demonstrates and requires practice more frequently used written communication in banks.  
*Prerequisite: ENG 092.*

**FIN 501: Financial Management** **3 credits**

This course introduces the Discounted Cash Flow (DCF) approach and its applications to corporate financial management for long-term profitability. Students will learn how to value assets and investment projects based on forward-looking cash flow perspectives, and how to raise long-term capitals to finance the profitable projects. Specific topics include present value and future value, valuation of bonds and common stocks, capital budgeting techniques under the existing tax environment, risk-return relationship, and the weighted average cost of capital. Students are expected to develop sufficient skills to solve typical financial management problems. *Prerequisite: ACT 501, ECO 501.*

**FIN 502: Financial Institutes and Markets** **3 credits**

This course will provide students with an introduction to financial markets and an evaluation of the institutions, instruments and participants involved in the industry. The mainstream markets to be evaluated include the equity, money, bond, futures, options and exchange rate markets. The course begins with an evaluation of the payments system and the provision of finance in the economy. The subject then systematically reviews each of the mainstream financial markets and describes the various institutional participants and the different types of financial instruments offered. *Prerequisite: FIN 501.*

**MGT 503: Management of People and Organisations** **3 credits**

The subject covers those topics, which are related to human resources and the system These topics are Bank As an Organization-Human resources; Functional Division; Banking Products, Internal Audit and Quality Assurance; Human Resources-Job Description, Salary Administration, Accuracy of Performance Appraisals; Objective-Setting Process, MissionStrategic Objectives and Monitoring Performance; Managers Tools-Tumbling-

Negotiation-Supervision-Leadership-Motivating People-Customer Relationships; Performance Management; MIS in Banking-Management System in Banking, Social and ethical aspects in management and banking. *Prerequisite: None*

## **CORE COURSES**

### **BNK 601: Banking Law and Practice** **3 credits**

The course provides an overview of the Bangladesh banking system. Topics will include regulation of banking activities, regulation of bank ownership, geographic expansion, non-banking activities, antitrust issues, bank supervision, consumer protection, and banking operation issues. *Prerequisite: BNK 091.*

### **BNK 604: Commercial Bank Management** **3 credits**

This course introduces students to the theory and practice of financial management of commercial banks. Topics covered include bank performance analysis, asset-liability management, credit analysis, structuring and pricing, bank capital management, and short-run reserve management. It also examines the practice and operations of banking in Pakistan, include foreign exchange management, as well as asset restructuring and bank valuation. *Prerequisite: FIN 502.*

### **BNK 605: Foreign Trade and Foreign Exchange** **3 credits**

This course has been designed to acquaint the students with theory and practice of international trade and its financing specially by the banks. Keeping this aim in mind, topics related to international trade reasoning and theories, institutions, and policies, their impact on balance of payments, foreign exchange market, trade financing techniques and procedures by banks have been covered in this course. *Prerequisite: FIN 502.*

### **BNK 606: Central Banking and Commercial Bank Supervision** **3 credits**

This course will explore the whole range of central banking functions and monetary policy formulation. It emphasizes financial discipline, depositors' protection, and regulatory and supervisory functions like on-site and off-site CAMEL ratings.

The course is designed to provide an objective approach to understanding and successfully managing the regulatory examination of a financial institution. It presents guidelines and strategies for an orderly, efficient and successful examination process and addresses exam methodology, pre-exam preparation, personnel cooperation and interaction, examination response, regulatory enforcement measures and corrective actions. An improved comprehension of the examination process should serve to enhance bank performance and advance regulator relations. *Prerequisite: BNK 601, BNK 604.*

### **BNK 607: Electronic Banking** **3 credits**

Overview of E-commerce and banking. Issue of risk and security; EDI, E-commerce and Internet; Risk in Insecure System; Risk Management; E-Banking and E-Payment Systems: Checks, Collections, debit and Credit Cards, Lock Box, Clearing House; Transaction Processing, Cryptography and Authentication; Future of E-Banking. *Prerequisite: FIN 502, BNK 604.*

### **BNK 608: Marketing of Bank Services** **3 credits**

This course covers the following topics. Attitudes to marketing, a definition of marketing, the marketing of services, Marketing methods, the marketing function. The banker-customer relationship, Deposits and debtor-creditor relationship, Types of Customers-The range of banking customers, Relation between bankers and customers, Personal customers, Sole traders, Partnerships, The accounts of limited companies, Club and societies (non-profit-making), Specialized account holders Conclusions of customers accounts. Developing banking and financial instruments for Retail and Personalize Banking, Corporate Banking, Small & Medium Size Entrepreneur lending and Investment Banking-developing instruments,

Customers Services-. Money transfer and finance, The changing pattern of banking services, Money transfer, Credit and services, Overdrafts and loans, Sophisticated financial services, Investment and pension services, Foreign exchange and overseas trade services, Risk management services. Credit Marketing-The aim of bank lending, the eligibility of borrowers, Credit appraisal Process, Procedures with security for loans, Type of facilities. Correspondent Banking Accounts-Nostro A/C-Vostro A/C Loro A/C. *Prerequisite: BNK 601, BNK 604.*

**BNK 609: Risk Analysis and Management of Financial Institutions** **3 credits**

This course provides the concepts, skills, and techniques necessary for estimating and managing different types of risk in financial institutions. It is aimed at participants who wish to have a deeper understanding of different types of risk faced by firms, both financial and non-financial; learn techniques to identify and measure risks, and understand *how* derivatives and risk management techniques can be used to manage risks and advance the strategic goals of the financial institutions. This course includes topics on Interest Rate Risk, Market Risk, Credit Risk, Off-Balance Sheet Activities, Technology and Other Operational Risks, Foreign Exchange Risk, Sovereign Risk, Liquidity Risk, and Risk Management. *Prerequisite: FIN 502, BNK 604.*

**BNK 610: Treasury Management** **3 credits**

This course deals with the role of treasury, coordination and management of the treasury operation; quantitative *and* qualitative risk analysis, risk management process and hedging techniques, role and mechanics of derivative products, performance measurement and evaluation. *Prerequisite: BNK 601, BNK 604, BNK 606.*

**CAPSTONE COURSE**

**BNK 619: Strategic Management of Banks** **3 credits**

The aim of the course is to make students understand the complex interactions in the organization of banks, their strategy formulation and the implementation of strategic plans. *Prerequisite: All foundation and core courses.*

**CONCENTRATION AREA COURSES**

**AREA: BANKING**

**BNK 621: Corporate Planning in Banks** **3 credits**

This course has been designed to equip the students to formulate short and long-range planning for the banks. It covers micro and macro business environment analysis, setting sustainable goals and targets for different aspects of banking at different performance levels, formulating appropriate techniques for monitoring planned performance. *Prerequisite: FIN 502, BNK 604.*

**BNK 622: Ethics in Banking and Legal Environment** **3 credits**

The course is designed to familiarize the students with the various facts of business environment. The relationship between social, cultural, technological, economical and banking development has been explored. The various commercial and banking laws concerned with the legal decision making process in banks has also been targeted in this course. *Prerequisite: BNK 601.*

**BNK 623: Investment Banking** **3 credits**

This course will cover the operational procedures of investment banking, factoring, leasing, etc. and explore the possibility of integrating these operations with the traditional banking practices. *Prerequisite: FIN 502, BNK 604.*

**BNK 624: Banking and Financial Innovation** **3 credits**

This course examines the development of various banking and clearing systems, both locally and overseas. It highlights the various risks and economic benefits. It focuses on pricing



policies, systems efficiency gains, the impact of globalization and the convergence of technology. Legal issues will also be examined. *Prerequisite: FIN 502, BNK 608.*

**BNK 625: International Banking**

**3 credits**

This course provides students with an understanding of international banking and finance in the contemporary environment. Topics include: theories and functions of international banking, International trade financing, Eurocurrency markets, international debt and international bank regulation, international financial services. *Prerequisite: FIN 502, BNK 605.*

**BNK 626: Bank Financial Analysis**

**3 credits**

This course is designed to provide the student with an understanding of bank financial statements and enhance their ability to analyze bank financial performance. Relationships between the various parts of financial statements are explored and primary sources of bank revenues and expenses are considered, with particular focus on their effects on a bank's ROE. In the assignments students analyze performance of financial institutions and identify any strengths and weaknesses of those financial institutions. *Prerequisite: FIN 502, BNK 604.*

**BNK 627: Islamic Banking**

**3 credits**

This course introduces students to the theory and practices of Islamic Banking. Topics covered include Islamic Laws-related to interest rate, deposit mobilisation, credit disbursement, and foreign exchange trading. It also explores different modes of investment, asset-liability management, credit analysis, structuring and pricing, bank capital management, and short-run reserve management. It also examines the practices and operations of banking in different Islamic countries. *Prerequisite: FIN 502, BNK 604.*

**BNK 628: Special Banking Issues**

**3 credits**

As commercial banking and other financial services undergo rapid changes, transmission of new opportunities, pitfall, and directions for the industry becomes an important element in the educational process. This course, Special Banking Issues, is designed to cover topics of current interest, which often do not fit into a unified course. Subjects may relate to technology, regulation, competition, public demands, and other areas of both direct and indirect concern. *Prerequisite: FIN 502, BNK 604.*

**BNK 629: Management of Specialised Banks**

**3 credits**

Topics include services of specialized banks, types coverage organization and operation of specialized banks, environment of specialized banks, risk and return potential. This course focuses more and management issues of specialized banks than on technical details. This course will deal primarily with the operations and services of five specialized banks in Bangladesh: Bangladesh Shilpa Bank, Bangladesh Shilpa Rin Sangstha, Bank of Small Industries and Commerce Bangladesh Ltd., Bangladesh Krishi Bank and Rajshah Krishi Unnayan Bank. The main focus of the course will be on the role of these banks on the rural, agricultural and the industrial sector. Emphasis will also be placed upon the environment of specialized banks, risk and return potential of these banks and the extent of the coverage of their operations. *Prerequisite: FIN 502, BNK 604.*

**AREA: FINANCIAL MANAGEMENT**

**FIN 620: Financial Analysis**

**3 credits**

A case-based course dealing with solving common financial problems. The primary focus is on equity (share) valuation, with some attention given to credit analysis and the valuation of debt. The methods of fundamental analysis will be examined in detail and applied in cases and projects involving listed companies. Topics include models of shareholder value and a comparison of accounting and discounted cash flow approaches to valuation, methods of financial statement analysis, testing the quality of financial reports, designing value added metrics, forecasting earnings and cash flows, pro-forma analysis for strategy and planning,

and the determination of prices/earnings and market-to-book ratios. The analysis will be carried out from the perspective of both the outside security analyst and the corporate financial analyst. *Prerequisite: FIN 501.*

**FIN 621: Corporate Finance**

**3 credits**

This course offers an overview of finance from the perspective of the corporate financial manager. The investment side will include portfolio selection and management decisions, capital budgeting under risk, and M & A. The financing side comprises decisions about capital structure-how much debt, relative to equity, is optimal for a particular firm-as well as decisions about what kind of debt, and what kind of equity, is right for the firm. *Prerequisite: FIN 501*

**FIN 624: Investment Management**

**3 credits**

This course surveys major investment problems. Factors affecting the term structure and risk structure of yields on financial claims are identified and analyzed. The course focuses on: the development of principles of personal and institutional portfolio management; modern capital asset pricing theory; valuation discussions on models for common stock prices. The institutional structure of the investment markets is viewed, with special emphasis on the role of security exchanges and the impact of institutional investors. Emphasis is placed on the efficiency of financial asset markets in adjusting to information entering the marketplace. *Prerequisite: FIN 501.*

**FIN 625: Portfolio Management of Financial Assets**

**3 credits**

This course builds on the modern portfolio theory and focuses on the topics that are important for the practice of portfolio management. The course covers portfolio analysis, implementation, and computing technology that enhances portfolio management. The emphasis is on providing students with analytical skills that have an application value. Upon successful completion of this course, students are expected to (1) achieve a general understanding of the portfolio management process, (2) be familiar with goals, practices and problems of investing institutions and individuals, (3) be able to apply modern techniques to asset allocation and portfolio management, and (4) evaluate the portfolio performance. *Prerequisite: FIN 501.*

**FIN 630: Project Preparation and Appraisal**

**3 credits**

This course deals with identification, preparation and appraisal of projects. Basic techniques of financial planning, analysis, appraisal and organizational aspects of projects are covered. *Prerequisite: FIN 501.*

**FIN 641: Fixed Income Securities and Interest Rate Derivatives**

**3 credits**

This subject looks at interest rate risk and techniques for managing risk. Topics covered include term structure dynamics (including bond price lattices, spot and forward rate models), analytical and numerical techniques, duration measures, interest rate derivative securities (including options, futures and swaps), and the interaction between interest rate risk and credit risk. This course is both theoretical and practical; the emphasis will be on problem-solving. *Prerequisite: FIN 501.*

**FIN 642: Financial Engineering**

**3 credits**

This course includes recent history and trends in derivative finance; Standardized Markets: Instruments and Organization; OTC Markets; Swaps; Options; Financial Engineering and Innovative Process and Global Risk Management. *Prerequisite: FIN 501.*

**AREA: MICRO FINANCE**

**BNK 631: Microfinance**

**3 credits**

This course is a blend of micro finance theory and practice. This course covers the basics for micro finance and sustainable micro finance. It helps students to learn how best to reach the

defined target market and effectively meet the needs of customers while covering the costs. It provides students with the necessary tools to run a fully sustainable micro finance-lending program in the future. It focuses on managing a growing micro finance-lending program and/or moving the organization toward full sustainability. *Prerequisite: FIN 502, BNK 604.*

**BNK 632: Accounting for Microfinance and NGOs** **3 credits**

This course will provide an overview of the basic skills necessary for setting up and understanding accounting systems for Micro finance and NGOs. It covers the entire accounting cycle from initial transactions to the creation of financial statements and focuses on specific issues relevant to MFIs and NGOs, including accounting for loan loss, interest revenue, donor funds, subsidized loans and analyzing financial statements. *Prerequisite: ACT 501, FIN 501.*

**BNK 633: Advanced Topics in Microfinance** **3 credits**

This advanced topics course builds on the base provided by the introductory micro finance course and tackles the more in-depth financial, organizational, strategic and policy implications associated with the development of this industry. By the end of the semester, students will have a deeper understanding of the issues facing practitioners on the frontier of the field, and a more sophisticated grasp of what differentiates the leading MFIs from the hundreds of others that are now active. In order to achieve this goal, this course is dedicated to building skills of students to analyze various industry players-including microentrepreneurs, MFIs, and the entities that support and govern them. *Prerequisite: BNK 631.*

**BNK 634: Strategic Mangement of Not-For-Profit Organisations** **3 credits**

This course discusses functions and responsibilities of the senior management of not-for-profit organizations, the critical problems that affect success in the total organization, and, the decisions that determine the direction of the organization and shape its future. The approach of the course is practical and problem based. *Prerequisite: BNK 609, BNK 635.*

**BNK 635: Management of NGOs** **3 credits**

Studies the environment, philosophy, objectives, strategies, factions, structure and management of NGOs. Planning, implementation and control of NGO activities in field and office, budgeting and financing NGOs operations and capital expenditures, personnel management etc. are covered. *Prerequisite: MGT 503.*

**AREA: INFORMATION TECHNOLOGY**

**ITS 501: Computer Programming** **3 credits**

This course introduces the students to the structured programming concepts and program development process. A procedural language is used to solve problems from business situations. Emphasis is given on database management with reference to various packages. Topics include problem analysis, development of algorithm, flow charts, program development, report writing, testing, and finalization.

**ITS 510: Information Management** **3 credits**

This course introduces students to the nature of information as a resource in the work place. It provides an overview of planning and managing information and helps students to understand information flow in an organization. The course also investigates how technology is changing the way we communicate and make decisions.

**MSC 641: Database Management** **3 credits**

This course focuses on the relational database design and SQL. Database management system used in this course, MS-Access, is introduced only as a tool to practice designing database and understand the theory. It is expected that a student with a good understanding of the relational database theory can quickly learn how to use any relational DBMS in the future. This course also teaches the fundamentals of application design with various examples. New

development in the field, such as Internet and intranet database, data warehousing, object oriented DBMS, distributed processing, ODBC, and SQL3, will also be introduced. *Prerequisite: ITS 501.*

**MGT 647: Management of Information Technology**

**3 credits**

This course examines several of the major IT issues facing today's managers: Keeping pace with the rapidly emerging new information technologies, including artificial intelligence; managing the acquisition of new information systems in the age of outsourcing; finding an appropriate role for electronic commerce; managing the impact of IT on human resources; and maintaining security in a networked environment. Issues examined vary, based on relevance and student interest. *Prerequisite: ITS 501.*

**OTHER COURSES**

**STA 510: Research Methodology**

**3 credits**

This course introduces students to the basic elements and process of research. Topics include preparing a research proposal, problem formulation, research design, sampling, data collection methods and analysis, hypothesis testing, correlation and multiple regression analysis, and analysis of variance. *Prerequisite: STA 501.*

**BUS 521: Entrepreneurship Process and Principles**

**3 credits**

This course covers the entrepreneurial process from conception to birth to adolescence of a new venture. It concentrates on attributes of entrepreneurs searching for opportunities, and gathering resources to convert opportunities into businesses. Students learn to evaluate new ventures and develop a business plan to pursue those ventures. It is stressed throughout that new venture development can happen both within and outside an existing organization. *Prerequisite: MGT 503.*

**BUS 623: Small and Medium Enterprise Management**

**3 credits**

This course provides an exploration into fundamentals of effective small business management. Topics such as growth, advertisement, financial analysis, budgeting, purchasing, inventory management, and financial control are also covered. This course also looks at some of the special issues facing small business owners and managers: technology, crime, risk, management, family business, ethics, and the global market place. *Prerequisite: MGT 503.*

## Executive MBA Program

### COURSE DESCRIPTION

#### FOUNDATION COURSES

**MSC 503E: Quantitative Methods for Business** **3 credits**

The course incorporates fundamental techniques of mathematics and statistics for managerial decision-making. Major topics includes equations and inequalities, indices and surds, basic coordinate geometry with emphasis on linear functions; laws of statistical analyses, recording and presentation of data, measures of central tendency and dispersion, correlation and regression, basic trend analysis, probability and probability distribution. *Prerequisite: None.*

**BUS 502E: Business Communication** **3 credits**

The course builds on communication theory applied to business and professions. Emphasis is given on effective writing; presentation of written and oral case solutions, letters, memoranda, reports, and employment applications; consideration of business ethics, technology, and intercultural communication. The course also emphasises barriers to effective interpersonal and organisational communication and overcoming them, and developing effective communication networks for simple and complex organisational structures. *Prerequisite: None.*

**BUS 504E: Business/Managerial Economics** **3 credits**

This course covers concepts of economics relevant to managerial decision-making at both micro and macro levels. Major topics in microeconomics include demand and supply analysis; pricing, cost, production, and utility theories; market competition- managerial functions in perfect, monopolistic, oligopoly, and monopoly markets. The macro part of the course emphasises the use of economic theory to understand and forecast the workings of financial markets and the operation and impact of government policies. Specifically, the course studies aggregate demand and supply, supply and demand side considerations of economic development, determinants of the level of national income, employment, investment, interest rates, fiscal and monetary policy, and inflation. *Prerequisite: MSC 503.*

**ACT 501E: Accounting for Managers** **3 credits**

This course introduces students to the art of reading, understanding, recording, and reporting financial information of business organisations. It focuses on accounting and its importance in reporting corporate financial activities; transactions and their recording; adjusting accounts, work sheet, and closing accounts; accounting for merchandise, inventory, cash and receivables; basics of accounting for fixed assets and their disposal; accounting for manufacturing organisations; introduction to corporate accounts. *Prerequisite: None.*

#### CORE COURSES

**MGT 501E: Management of Organisation** **3 credits**

This course focuses on the functional and behavioural aspects of managing organisations. Key topics include organisation and its basic philosophies; managers and their functions and responsibilities; brief overview of evolution of Management as a formal body of knowledge; external, internal, and social variables of managing business organisations; managerial functions of planning and decision-making, organising, directing and controlling. Behavioural aspects of managing people are emphasised through such topics as motivation, leadership, teams and teamwork, and organisational citizenship behaviour. *Prerequisite: None.*

**MGT 502E: Managing Human Resource** **3 credits**

This course provides a framework for understanding and thinking strategically about employment relations and the management of human resources in organisations. The course draws on insights

from the social sciences to explore how economic, social, psychological, legal, and cultural forces influence employment relations. Major topics include personnel functions and basic concepts; human resource planning, job analysis, staffing, development, compensation, employee/labour relations, health and safety, industrial employee union representation, and impact of the Human Resource Legislation. *Prerequisite: MGT 501E.*

**MKT 501E: Marketing Principles and Practices**

**3 credits**

This course involves a comprehensive study of structure and functions of marketing system in the firm, economy, and society; analysis of target markets, environments, and managerial aspects of marketing practices. Specifically, the course introduces students to marketing strategy and to the elements of marketing analysis such as customer analysis, competitor analysis, and company analysis. The course covers the basic nature of the marketing philosophy, market opportunities and threats, identification of marketing strengths and weaknesses, and the major marketing tools available for building the overall marketing program. *Prerequisite BUS 504E*

**FIN 501E: Managerial Finance**

**3 credits**

This course looks at the management of funds from the corporate perspective. Core issues covered include an overview of financial and capital markets; analysis and interpretation of financial statements for managerial decision; time value of money concepts; long-term investment analysis, valuation and cost of capital, optimal capital budget, risk, return and basics of portfolio management; capital structure decisions; and dividend policy. *Prerequisite/s: MSC 503E, BUS 504E, ACT 501E*

**MSC 505E: Managing Operations**

**3 credits**

The course incorporates study of production and operations management in manufacturing and service sector organisations. It focuses on the methods for designing, operating, and improving the systems that create products and services. Emphasis is on methods, practices, and tools needed for managing production and services with special focus on supply chain management and service delivery systems. *Prerequisite: MSC 503E, BUS 504E*

**BUS 510E: Managing in the Cross-cultural Environment**

**3 credits**

This course introduces students to issues in international business and exploration, identification, and analysis of environment facing firms in international arena; problems in planning, implementing, and controlling activities such as choosing foreign associates, selecting plant location, and dealing with labour, structure, legal constraints, and trade problems. Students are introduced to international finance, economics, and marketing, International organisations and regulatory bodies. Emphasis is placed on global business strategy and International law. Emphasis will also be given on problems of adaptation to different sociological, cultural, legal, political, and economic environment. *Prerequisite/s: MGT 501E, ECO 503E*

**CAPSTONE COURSE**

**MGT 601E: Corporate Strategy**

**3 credits**

The course focuses on advanced problems in determining, executing, and controlling strategic management process in light of changing environments facing the organisation. It incorporates knowledge in all major areas of business for analyses of business situations and their resolution aimed at having a long-term impact on the firm's future progress. Emphasis is placed on dealing with business situations through case studies, group projects, term papers, and so forth. *Prerequisite/s: All core courses.*

## CONCENTRATION COURSES

### ***Area of Concentration: Management and HR***

#### **MGT 621E: HR Planning and Development**

**3 credits**

The course aims at developing a critical understanding of the role of the manpower planning and its personnel policy in modern organisations. It is designed to equip the students with the techniques of developing and implementing personnel policy. It includes a detailed study of environmental trend analysis, manpower planning models, manpower needs and personal information system to forecast manpower needs and consideration of some indicators of manpower effectiveness. Matters such as historical, economic, cultural, legal, political, and other factors are given due consideration for formulating policy decision. Emphasis is also placed on management of labour policy and differences between management and their workforces. *Prerequisite/s: MGT 502E*

#### **MGT 624E: Management of Conflicts**

**3 credits**

The purpose of this course is to develop the aptitudes, intuitions and understandings of the strategies essential to successful negotiations and mediation. Detail analysis of the nature of negotiation, distributive and integrative bargaining, ethical issues, planning and preparation, intercultural differences, bargaining style and personality are emphasised. The role of power, strategy and tactics is considered, including coalition behaviour, communication, persuasion, conflict resolution and multi-party negotiation. Case studies and negotiation simulation sessions are used to illustrate key concepts. *Prerequisite/s: MGT 502E*

#### **MGT 625E: Industrial Relations**

**3 credits**

This course examines how the interactions between and among workers, management, and the state shape and define the structure and experience of work. Key topics include IR Theory; employment relations-- the economic paradigm; IR dynamics; theory of unionism; non-union worker voice & IR theory; alternate paradigms of industrial relations; comparative IR theory; public policy and IR theory; integration and synthesis. *Prerequisite/s: BUS 504E, MGT 502E*

#### **MGT 629E: Compensation Management**

**3 credits**

This course focuses on managing employee-compensation in today's business organisations. It examines the current state of compensation decision-making and evaluates how recent studies contribute to the improvement of such decisions. The strategic use of compensation systems for attracting, motivating, and retaining employees is particularly stressed. Key topics include job evaluation, salary surveys; pay-for-performance programs; legal issues; the design and evaluation of employee benefits packages. *Prerequisite/s: MGT 502E*

#### **MGT 648E: Management of Change**

**3 credits**

The course aims at developing skills in the effective conceptualisation, planning, implementation and evaluation of change interventions in human systems. It introduces behavioural science frameworks for explaining and guiding the practice of change in the organisation. The systemic nature of change and intervention practice, including the generation and management of resistance to change, are analysed. Organisational change processes at the individual, team and institutional level and human system intervention efforts are considered. The importance of context is emphasised with cases of cross-cultural change, knowledge-based organisations, socio-technical change processes and system vs. cultural change analyses. *Prerequisite/s: MGT 502E*

#### **MGT 698E: Contemporary Issues in Management and HR**

**3 credits**

The course covers recent developments in the field of organisational and human resource management. Emerging concepts and new ideas in the field are discussed. *Prerequisite/s: MGT 502E*

### **Area of Concentration: Finance and Banking**

#### **FIN 622E: Capital Budgeting and Long-term Financing**

**3 credits**

This course extends the discussion of long-term investment analysis, considering practical problems of implementation, evaluation of uncertainty in the cash flows, and various interdependencies that influence the decision. The course integrates theory and practice, facilitated through the use of spreadsheets and simulation, and sensitivity analyses, with a view to providing students with cutting-edge capital budgeting analysis tools. Mathematical models are introduced for decisions on such matters as capital rationing and selection of investment projects. Long-term sources of funding for investment projects are discussed with particular reference to common stock, bond, and lease financing. Case analysis and presentation are a central focus of the course. *Prerequisite/s: MSC 503E, FIN 501E*

#### **FIN 623E: Financial Markets and Institutions**

**3 credits**

This course provides students with an introduction to financial markets and an evaluation of the institutions, instruments and participants involved in the industry. The mainstream markets to be evaluated include the equity, money, bond, futures, options and exchange rate markets. The course begins with an evaluation of the payments system and the provision of finance in the economy. The subject then systematically reviews each of the mainstream financial markets and describes the various institutional participants and the different types of financial instruments offered. *Prerequisite/s: FIN 501E*

#### **FIN 624E: Investment analysis and Capital Markets**

**3 credits**

The course looks at investment from the individual investor's viewpoint. It dwells on the concepts and practices of managing investment in the capital market. Students are introduced to a wide range of financial securities including stocks, bonds, mutual funds, and derivative securities. Analyses of these securities for optimal investment decisions are discussed. The modus operandi of participating and trading securities in the securities market is also covered. *Prerequisite/s: FIN 501E*

#### **FIN 628E: International Financial Management**

**3 credits**

The course focuses on the various aspects financial management by multinational corporations (MNCs). It covers the problems faced by managers of MNCs with respect to currency differences and exchange rate risks. The course applies financial and economic theory to the international financing and investment decisions of corporations, financial institutions and individual investors. Reduction of risk through use of forward, and options exchange markets and hedging are examined. Methods of moving liquid assets and their constraints are considered. Capital budgeting decisions and issues regarding capital structure, where the assets and sources of financing are in different economies, are also studied. An extension of the Capital Asset Pricing Model to an integrated world model is considered. Problems and prospects of Foreign Direct Investment (FDI) are also discussed. *Prerequisite/s: BUS 510E, FIN 501E*

#### **FIN 631E: Working Capital Management and Short-term Financing**

**3 credits**

This course deals with various industry practices in working capital management. It explores the impact of such management have on the overall financial performance of the business, as well as the efficient utilisation of income-producing assets. Key topics include guidelines for developing working capital policy; management of cash and cash-equivalents, receivables, and inventory; sources of funding for working capital and use of securities against short-term borrowing. Learning through case analysis is particularly emphasised throughout the course. *Prerequisite/s: FIN 501E*

#### **FIN 642E: Commercial Bank Management and the Central Bank**

**3 credits**

This course introduces students to the theory and practice of financial management of commercial banks. Topics covered include bank performance analysis, asset-liability management, credit



analysis, structuring and pricing, bank capital management, and short-run reserve management. It also examines the practice and operations of banking in Bangladesh, include foreign exchange management, as well as asset restructuring and bank valuation. The role and functions of the central bank in regulating activities of commercial banks with particular emphasis on maintaining financial discipline, depositors' protection, and regulatory and supervisory functions like on-site and off-site CAMEL ratings. *Prerequisite/s: FIN 623E*

**FIN 698E: Contemporary Issues in Finance and Banking** **3 credits**  
The course covers recent developments in the field of finance and banking. Emerging concepts and new products and services in the field are discussed. *Prerequisite/s: FIN 501E*

**Area of Concentration: Marketing**

**MKT 621E: Brand Management** **3 credits**  
This course focuses on the role of products in the marketing mix. In particular, topics explored include the creation of new products, the deletion of obsolete products and the management of mature products in the firm's product line. Systematic models of new product planning are studied to facilitate the integration of new offerings with the existing product line. Instruction includes lectures, case analysis and textbook discussion. *Prerequisite/s: MKT 501E*

**MKT 622E: Service Sector Marketing** **3 credits**  
This course examines the need for marketing in service industries. It develops an understanding of the ways in which service marketing differs from product marketing, and improves students' understanding of how service characteristics affect the marketing function. Students learn to develop and implement marketing plans for service organisations. *Prerequisite/s: MKT 501E.*

**MKT 623E: Marketing Research** **3 credits**  
This course develops a managerial appreciation toward marketing research. The steps of the research process are delineated, starting from recognising and specifying the informational needs of the decision-maker and definition of the problem, through research design, sample selection, preparation of the instrument, data collection, data reduction, analysis, presentation and follow-up. Integration of the concepts discussed is achieved through considering the broader requirements of a marketing information system. The method of instruction includes cases, discussion of readings and use of computer analysis packages. A major term project is required. *Prerequisite/s: MKT 501E*

**MKT 625E: Consumer Behaviour** **3 credits**  
This course examines the reasons why consumers behave as they do. It applies psychological and sociological theories and principles applied to current marketing problems with specific emphasis on consumers' psychology in exploring, selecting, buying, and postponing/abandoning products to use. *Prerequisite/s: MKT 501E*

**MKT 629E: Sales-force Management** **3 credits**  
This course is a critical examination of the activities, functions, challenges and opportunities of the sales force manager. The sales management function linked to other sectors of the promotion mix as well as the remainder of the marketing mix. An examination of the long-term selling process provides a foundation for this course. *Prerequisite/s: MKT 501E*

**MKT 632E: Strategic Marketing** **3 credits**  
This course is a comprehensive study of marketing strategies implementation. It reviews the principle concepts and theories of marketing and develops through case studies and group projects for integration of marketing practice in contemporary business applications. *Prerequisite/s: MKT 501E*

**MKT 698E: Contemporary Issues in Marketing****3 credits**

The course covers recent developments in the field of Marketing. Emerging concepts and new tools and techniques of effective marketing are discussed. *Prerequisite/s: MKT 501E*

**Area of Concentration: Operations Management and Management Science**

**MSC 623E: Project Management****3 credits**

This course covers the strategic, organisational and operational aspects of managing projects. Students learn to manage the technical, behavioural, political and cultural aspects of temporary groups performing unique tasks. Topics covered include: defining deliverables, formulating projects strategy, effective group organisation and management, dynamically allocating resources, managing without authority, and resolving conflict. Traditional cost and time management techniques are covered using contemporary software packages. *Prerequisite/s: MSC 505E*

**MSC625E: Quality Management and Control****3 credits**

The concepts, principles, and tools known as Total Quality Management used in organisations of all types to improve customer and consumer satisfaction are covered. Content includes a discussion of quality systems in production and service environments, quality management philosophies, and how managers can plan, organise, and maintain quality in all functions of their organisation. *Prerequisite/s: MSC 505E*

**MSC 628E: Operations Research/Management Science****3 credits**

This course emphasises analytical, experimental and quantitative approaches to solution of business problems. The objective of this course is to develop students' skills and ability in data collection and analysis, and formulating and solving mathematical models. Key topics include Markov analysis, queuing analysis, game theory, linear programming, goal programming, integer programming, and network modelling. *Prerequisite/s: MSC 505E*

**MSC629E: Business Logistics and Supply Chain Management****3 credits**

This course is designed to investigate the concepts in design and control of supply chains. The principle focus is on learning to manage the technical, behavioural, political and cultural aspects of temporary groups performing unique tasks. Topics covered include: defining deliverables, formulating projects strategy, effective group organisation and management, dynamically allocating resources, managing without authority, and resolving conflict. Traditional cost and time management techniques are covered using contemporary software packages. The course also incorporates inventory management together with logistics network design, distribution strategies, information sharing, coordination, and decision support tools. *Prerequisite/s: MSC 505E*

**MSC 630E: Innovation and Management of Technology****3 credits**

The course provides basic knowledge for managing innovation process in an organisation. It studies the concept of innovation and its importance in organisation including the management process. The study covers technology innovation process, innovation in corporation/enterprise, innovation in research, innovation deployment in manufacturing industry, strategy of using innovation and developing new business, business existence and the creation of market seller. *Prerequisite/s: MSC 505E*

**MSC 643E: E-Business****3 credits**

The Course focuses on internet-based information systems that enable electronic transactions and communication that have redefined the ways that firms compete, interact with value chain partners, and relate to customers. This course explores atomic e-business models – direct-to-customer, full-service provider, whole-of-enterprise/government, intermediary, shared infrastructure, virtual community, value net integrator, and content provider – as the building blocks for successful e-business enterprises. Applications such as customer relationship

management, enterprise resource planning, and supply chain management are explored.  
*Prerequisite/s: MSC 510E*

**MSC 698E: Contemporary Issues in Operations Management and Management Science**

**3 credits**

The course covers recent developments in the field of operations and information management. Emerging concepts and new tools and techniques of effective systems design are discussed.  
*Prerequisite/s: MSC 505E*

**FREE ELECTIVES**

**BUS 501E: Legal Environment of Business**

**3 credits**

The course provides the students an orientation in the role of business related laws in decision-making and in dispensing managerial responsibilities. It includes both commercial laws (contract, agency, sale of goods, negotiable instruments, insolvency, company law etc.) and the industrial laws (labor laws, payment wages, factories act, workmen compensation, industrial disputes, trade union act etc.). The course also extends its emphasis on laws governing businesses, shareholders, officers, companies, financial institutions, bill of exchange, bankruptcy, environmental protection, information and consumer protection. *Prerequisite: None*

**MSC 510E: Management of Information**

**3 credits**

This course integrates topics of management and organisation theory, information and communication theory, and systems theory relevant to managing an organisation's information resources. It includes computer hardware and software, telecommunications, and database concepts and emphasises the e-commerce and Internet based business models to obtain an understanding of the competitiveness of global based business environments. Basic knowledge of computer application is an essential prerequisite for this course. *Prerequisite/s: BUS 502E, ACT 501E, MGT 502E.*

**BUS 511E: Corporate Governance**

**3 credits**

This course is concerned with collective action problems among dispersed investors and the reconciliation of conflicts of interest between various corporate stakeholders. The course discusses such issues as the role and responsibility of owners, the role and responsibility of boards, executive compensation, internal control and disclosure of governance arrangements. It also incorporates various corporate governance codes that public companies can or have to follow. The purpose of this course is to give an overview of theories, empirical evidence as well as regulations related to corporate governance. *Prerequisite/s: MGT 501E, ACT 501E, FIN 501E*

**BUS 512E: Business Ethics and Corporate Social Responsibility**

**3 credits**

The course focuses on ethical issues and professional challenges encountered in business, including corporate social responsibility. It aims at building students' ability in recognising and managing ethical issues as they arise, and formulating their own standards of integrity and professionalism. The overall course objectives are to increase awareness of the ethical dimension of business conduct; to contribute insight into the professional standards and responsibilities for corporate managers; to develop analytical skills for identifying and resolving ethical issues in business; and to practise decision making about issues of ethics and corporate social responsibility. *Prerequisite/s: MGT 501E*

**ACT 502E: Accounting for Managerial Decisions**

**3 credits**

This course aims at providing knowledge and skills for using accounting information for managerial position in the organisation. This skill becomes one of the foundations of a sound decision making process. Topics include: concept of cost element, cost classification, methods of costing and break-even analysis, budgeting and budgetary control, product costs, joint costs and other uses of accounting information. *Prerequisite/s: ACT 501E*

**FIN 510E: Micro Finance****3 credits**

This course is a blend of micro-finance theory and practice. It course covers the basics for micro finance and sustainable micro finance. It helps students to learn how best to reach the defined target market and effectively meet the needs of customers while covering the costs. It provides students with the necessary tools to run a fully sustainable micro-lending programme in the future. It focuses on managing a growing micro-lending programme and moving the organisation toward full sustainability. *Prerequisite/s: FIN 501E*

**MGT 623E: Entrepreneurship and Small Business Management****3 credits**

This course focuses on attributes of entrepreneurs searching for opportunities, gathering resources to convert opportunities into businesses, and the subsequent management of the newly born small enterprises. Students learn to evaluate new ventures and develop a business plan to pursue those ventures. The course also looks at some of the special issues facing small business owners and managers: technology, crime, risk management, family business, ethics, and the global market place. *Prerequisite/s: MGT 501E, ACT 501E*

**BUS 513E: Business Research Methodology****3 credits**

This course introduces the basic elements and process of research. Topics include preparing a research proposal, problem formulation, research design, data collection methods and analysis, hypothesis testing, correlation and regression analysis, and analysis of variance. Major areas in non-parametric and time-series analyses are also covered. *Prerequisite/s: MSC 503E*

## School of Engineering and Computer Science: Postgraduate Course Descriptions

The School of Engineering and Computer Science consists of the Department of Computer Science and Engineering (CSE) and the Department of Electrical and Electronic Engineering (EEE). Courses for Master of Science (MSc.) and Master of Engineering (M. Engg.) in Electrical and Electronic Engineering and other postgraduate courses offered by the EEE Department for different disciplines of BRAC University are described below:

### Description of M.Sc./M.Engg. Courses

#### EEE 500: Thesis (18 credits)

A student must undertake a research work on M.Sc. in Electrical and Electronic Engineering topic under the guidance of a supervisor. The student is required to prepare and submit the thesis within the time specified. The thesis will be graded and a student must get at least a C grade, which is the passing grade for this course.

#### EEE 501: Project (6 Credits)

A student must undertake a research project work on M.Engg. in Electrical and Electronic Engineering topic under the guidance of a supervisor. The student is required to prepare and submit the report within the time specified. The report will be graded and a student must get at least a C grade, which is the passing grade for this course.

#### EEE 502: Internship (non-credit)

This is an optional non-credit course. The internship aims at providing on-the-job exposure to the students and an opportunity for translating theoretical concepts to real life situations. Students are placed in business enterprises, NGOs and research institutions for internship. The duration of internship will be a maximum of 8 weeks. The student is required to prepare and submit the report within the time specified. The report will be graded.

#### EEE 510: Signals, Systems and Stochastic Process (3 credits)

Generic Description of Transmission Systems; Classifications of Signals; Fourier Analysis: Fourier Series, Power Theorem, Fourier Transform, Properties of Fourier Transform, Fourier Transform of Periodic Signals, Reconstruction of a Bandlimited Signal from Its Samples, Correlation Functions; Signal Transmission Through LTI Systems; Random Variables, Stochastic Processes, and Noise: pdf and cdf, Transformations of Random Variables, Statistical Averages, Real and Complex Random Vectors, Probability Models, Random Processes, Stationary and Ergodic Processes, Gaussian Processes, Spectral Characteristics of Random Signals, Random Signals and LTI Systems, Estimation of Power Spectrum, Noise Processes, Noise-Equivalent Bandwidth, Baseband Communication Model with Additive Noise: Signal-to-Noise Ratio, Noise Figure and Noise Temperature, Additive White Gaussian Noise Channel; Digital Communication Basics: Matched Filters, Signal Characterization, Additive White Gaussian Noise Channel. Coherent Detection of Binary Signals in AWGN Channel, Error Probabilities for Binary Signalling, Optimum Digital Receivers; Markov Processes: Chapman-Kolmogorov Equations, Classification of States, Limiting Probabilities, Discrete time, Discrete State Markov Processes.

#### EEE 511: Cellular Mobile Communication (3 credits)

Propagation in mobile radio channels: channel models, fading - large scale and small scale fading, flat fading and frequency selective fading channel, fast fading and slow fading channel; delay spread, Doppler spread and angle spread; channel autocorrelation functions, scattering function, correlated and uncorrelated scattering (US), WSS and WSSUS model.

Multiple access techniques: FDMA, TDMA and Spread Spectrum Communications; DS-CDMA and FH-CDMA: modulator and demodulator structure, probability of error, jamming margin, decoding, performance in the presence of interference, PN sequence, CDMA.

Multi-user detection: multiple access interference, detector performance measures - BER, asymptotic efficiency, near-far resistance; detectors - matched filter detector, de-correlator detector, MMSE detector, SIC, PIC, MAP and MLSE detectors.

Diversity and combining techniques: Multiple antenna systems - SISO, SIMO, MISO and MIMO systems, STBC, OSTBC, QOSTBC, spatial multiplexing (SM) schemes.

Interference and management and mobility management in wireless communications, security in wireless communication systems.

Multi-carrier communications: OFDM - oscillator based and FFT implementation; special issues of OFDM - cyclic prefix, timing offset, frequency offset, synchronization, peak power problem; OFDMA, MC-CDMA, WiMAX.

Selected transactions and industry standards.

### **EEE 512: Telecommunication Transmission Technologies (3 credits)**

Introduction to telecommunication transmission technologies; Integrated Services Digital Network (ISDN) principles, systems and transport technology; Plesiochronous Digital Hierarchy (PDH) principles, systems & transport technology; Synchronous Digital Hierarchy (SDH) principles, systems & transport technology; SONET principles, systems & transport technology, ATM principles, systems & transport technology.

Switching Systems, Architecture & System overview of Digital Switching, Overview of packet and circuit switching, Packet transmission on LAN & WAN, Packet switching in broadband networks, ATM switching, IP switching, Overview of SS-7 signaling systems, Signaling networks.

Introduction to access network transport technologies; PONS, DSL, HFC last mile solutions.

Introduction to Satellite transmission networks, Space environment, Link analysis, Satellite Access, Earth stations, Satellite services.

### **EEE 513: Communication Services Networks (3 credits)**

SONET Transport Networks: Rationale for High Speed Networking - Evolution of Optical Networks - SONET Technology - SONET Transport Network Architectures - Survivability in SONET Systems - Automatic Protection Switching (APS) - Restoration Techniques - Self Healing Rings - IP-over - SONET. ATM Transport Networks: ATM Technology - Protocol Reference Model - Network Traffic Management - Protection and Restoration Techniques - IP-over- ATM-over-SONET. WDM Networks and Wavelength Routing: Wavelength Division Multiplexing (WDM) Technology - Wavelength Cross-Connects - Wavelength Routing Networks - Routing and Wavelength Assignment - Distributed Control Protocols - Wavelength Rerouting. WDM Ring and Wavelength-Convertible Networks: WDM Ring Networks - Wavelength Convertible Networks - Routing Algorithms - Converter Placement . WDM Optical Layer Design: Terabit Transport Networks - Layered Architecture - Design of Optical Layer - Virtual Topology - Problem Formulation - Design Heuristics - Multi-Fiber Networks. WDM Network Survivability and Optical Packet Switching: Network Survivability - Protection and Restoration Techniques - Optical Layer with Fault-tolerance Capability - Optical Packet Switching - IP-over-WDM. Advances in WDM technologies: Introduction to DWDM (Dense Wavelength Division Multiplexing) technology and its features, Next generation optical networks.

### **EEE 514: Optical Communication System (3 credits)**

Introduction to optical communications: Motivation for using optical methods in data transmission. Brief history of optical communications, Generic optical communication system. Key components and their functions; Propagation of light in fibres: Principles of optical waveguiding. Fibre modes and their properties. Single mode, multimode fibres. Recently developed fibre types; Signal attenuation: Optical losses: intrinsic loss mechanisms; extrinsic loss (bending, splicing,

coupling). Dispersion: modal dispersion, waveguide dispersion, dispersion shifting; Optical Systems: Optical transmission formats: return-to-zero, non-return-to-zero encoding, Binary transmission: statistics, noise and errors, Propagation of optical pulses in dispersive media. Loss limited systems and dispersion limited system.

Optoelectronic components: Optical Detectors.: Detectors of optical signals: principle of operation; responsivity; bandwidth; noise. Photodiodes, materials and structures: heterostructures; p-n detectors; avalanche detectors; common types of photodiodes. Optical Sources: Laser: emission and amplification of light; optical gain; principle of laser; laser modes; rate equations. Laser diodes: photons in semiconductors; generic structure of laser diode; double heterostructure; performance characteristics of laser diodes; rate equations; common types of laser diodes; Optical amplifiers amplified systems: Design and principles of optical fibre amplifiers. Main characteristics: power, gain, noise. Saturation effects. Noise accumulation in long-span systems. Implications for long distance (trans-oceanic) data transmission; Nonlinear effects: Effective length of nonlinear interaction. Main effects: Self-phase modulation; Raman scattering; Brillouin scattering; four-wave mixing. Optical solitons; Advanced optical systems: Wavelength multiplexing and time-division multiplexing of optical signals. Ultrahigh-capacity optical data transmission; review of terabit-per-second systems. Detrimental effects of nonlinearities and dispersion on system performance. Useful effects: dispersion management; optical solitons. Current performance limits.

### **EEE 520: Advanced Digital Communications (3 credits)**

Representation of bandpass signals and systems, modulation and demodulation for the additive white Gaussian noise channel, optimal demodulation for signals with random phase, noncoherent detection for binary and M-ary orthogonal signals, hard and soft decoding for linear codes, concatenated codes, performance of coded modulation systems, characterization of fading multipath channels, diversity techniques, performance of coded systems on fading channels, direct performance of coded systems on fading channels, direct sequence and frequency hopped spread spectrum systems.

### **EEE 521: Digital Wireless Communications and Networks (3 credits)**

Analog and digital communications, Wireless spectrum, Multiplexing and access methods, Propagation; Unidirectional Broadcast Systems; Broadcast technologies for audio, video and data, Capabilities and limitations; Medium Access Control & Telecommunication Systems; Multiple radio access methods, Home and Mobile telephony systems, Capabilities and limitations; Wireless LAN, Aloha, IEEE 802.11 family, Bluetooth and others. Capabilities and limitations; Mobile Network Layer, Mobile ad hoc networks, routing protocols, quality of service and others, Capabilities and limitations; Transport Layers and Mobility Support; Transmission control protocols (TCP) for mobile systems. File store for mobile systems. Web, WAP and other mark up. Connection control systems.

### **EEE 522: Telecommunications Business Environment (3 credits)**

Commercial dimensions of networks: financial impact; Network economics, commercial pressures; Corporate finance: company accounts including P&L Balance sheet, depreciation, cash flow, stock market etc; Market forces: marketing principles, market sectors, market and products/services forecasting; Competition: competitor analysis and models, telecommunications competition; competitive responses; Product and services management: product lifecycles, translation from requirements to product definition and launch; Customer satisfaction: QoS, service surround, customer service, service centres; Pricing and product profitability: cost-based pricing, interconnect pricing, regulatory implications; Management accounting: accounting; budgetary control; financial control; Operating cost drivers: analysis of R&D costs; dynamic and interactive nature of costs; Telco cost model; whole life costs; productivity; process analysis, QoS and failure costs; Capital cost drivers: network capital requirements; impact of network planning; effect of depreciation; capital budgeting; funding;

effect of procurement; control of capital projects; Regulation: acts and licences; organisation, role and powers of regulators; price regulation; influence of European Union and WTO regulation; Investment Appraisal: justification of capital projects and methods of investment; sensitivity and risk analysis; cost/benefit; financial authorisation; Global awareness: the global market; the Triad; characteristics of multinational customers; the European Union; global competitive analysis; Information industry: value chain, competition, impact on Telcos.

### **EEE 523: Network and Services Management (3 credits)**

Introduction to role of network management, Configuration management, event management, testing, access and security, network planning, work management; network management standards, network management model, OSI and Internet management approaches, TMN; element management, and network control layer; service management, service management layer functions, service templates, generation of service definitions; future prospects for automation, role of AI, KBS, HCI, co-operating agents, Network Security: Introduction to Computer and Network Security; Cryptography; Firewalls; IPSEC; IP attacks.

### **EEE 524: Mobile Communication System Planning (3 credits)**

Purposes and procedures of network planning, Site survey and selection; Propagation analysis and coverage planning; Capacity planning; Radio frequency planning; Advanced planning aspects. Cell Planning: Traffic and coverage analysis, Nominal cell plan, surveys, System design, System implementation and tuning, System Growth, Re-use of frequencies in a cell, Hierarchical Cell Structure (HCS), Multi-band Cells. Telecommunication Subscriber Services, Mobile Intelligent Network, CVPN, CAMEL, Charging and Billing, Operations & Maintenance Systems, System architecture & Industrial implementations. *Prerequisites: EEE 511*

### **EEE 525: Communications Systems Modeling (3 credits)**

Time and Frequency Domain Modeling of signals, Transforming between the time and frequency domain, Techniques for Physical Layer Simulation, Performance Measurement in simulation, Physical Layer Simulation examples (Optical Communications, Radio Communications, Electrical Communications), The Theory of Network Simulation, Network Simulation Examples.

### **EEE 530: Broadband Networks (3 credits)**

Types of networks - circuit-switched, packet-switched, connection-oriented, connectionless, single-rate, multi-rate, Framing, time slots, headers; Evolution of networks - the telephone network, the Internet, local area networks, the move to broadband networks; Asynchronous Transfer Mode (ATM). The ATM protocols: physical layer, ATM layer, adaptation layer; Source models, statistical multiplexing, multiplexing gain; Admission control, Access control, Leaky Bucket algorithm, Available Bit Rate, Weighted Fair queuing; ATM switches, Banyan networks, Banyan network throughput, Deflection routing, Sort-banyan switches, Head-of-line blocking, Output-buffered switches, Large-scale switches; Discrete-time queuing theory, Kendall's notation, Probability generating functions - definition and properties, PGFs of some distributions; Arrival processes, Batch arrivals, The Geo[x]/D/1 queue, Numerical calculation of moments and probabilities, Little's Law; Queuing model of output-buffered switch, Queuing model of input-buffered switch, Throughput of input-buffered switches, Numerical calculation of loss probabilities. Signaling protocols, User-network interface, Network-network interface, Routing protocols, ATM local area networks.

### **EEE 531: Data Network Protocols (3 credits)**

Introduction and OSI Layering System Transmission - media, signals, asynchronous and synchronous, compression, huffmann; Physical Layer Data link Layer - go back n and selective repeat; LANs - ethernet, token ring, polling Network Layer - routing and flow control; Transport and Higher Layers - TCP/IP Circuit Switching - Telephone network; Erlangs Equations - queuing theory; Integrated Services Digital Network, ISDN B-ISDN and ATM, standards, traffic Future Trends and Conclusions.



**EEE 532: Network Security (3 credits)**

Overview of security, threats and mechanisms; Conventional encryption algorithms (DES, IDEA); Public Key cryptography, RSA, Key management, confidentiality authentication and digital signatures; Network-based threats: Intruders, Viruses and Worms; Hardware architectures required to implement algorithms; Firewalls.

**EEE 533: Wavelets and Applications (3 credits)**

Introduction and Background: Why wavelets, subband coding and multiresolution analysis? Mathematical background, Hilbert spaces, Unitary operators, Review of Fourier theory, Continuous and discrete time signal processing; Time-frequency analysis, Multirate signal processing, Projections and approximations; Discrete-Time Bases and Filter Banks, Elementary filter banks, Analysis and design of filter banks, Spectral Factorization, Daubechies filters; Orthogonal and biorthogonal filter banks, Tree structured filter banks, Discrete wavelet transform, Multidimensional filter banks; Continuous-Time Bases and Wavelets; Iterated filter banks, The Haar and Sinc cases, The limit of iterated filter banks; Wavelets from Filters, Construction of compactly supported wavelet bases, Regularity, Approximation properties, Localization; The idea of multiresolution, Multiresolution analysis, Haar as a basis for  $L_2(\mathbb{R})$ , The continuous wavelet and short-time Fourier transform; Applications, Fundamentals of compression, Analysis and design of transform coding systems, Image Compression, the new compression standard (JPEG200) and the old standard, Why is the wavelet transform better than the discrete cosine transform? Video compression and the 3-D wavelet transform. Advanced topics: Beyond JPEG2000, non-linear approximation and compression.

**EEE 534: Advanced Data Communication (3 credits)**

The course covers Communications protocol Stacks, OSI and TCP/IP. 802.X based wired and wireless LANs. Access protocols, Slip, PPP and ADSL. Management protocols ICMP, BOOTP, DHCP, SNMP & Management Tools, as well as management of Cisco routers. Routing protocols and clients, the DNS and BIND, RIP-2, OSPF (IGP & BGP). Socket Programming. Traffic Capture & Analysis Labs.

**EEE 535: Information Theory, Coding, and Detection (3 credits)**

Review of probability, random variables, probability density functions/cumulative distribution functions, expected values, central limit theorem, random processes, stationarity, ergodicity, Autocorrelation, Power spectral density. Multiple random variables, Transmission through linear systems. Optimum Signal Detection: Geometrical representation of signals. Gaussian random noise, Optimum receiver, Non-white channel noise. Information Theory: Measure of information, Source encoding, Error-free communication over a noisy channel, Channel capacity of a discrete memoryless system, Channel capacity of a continuous channel. Error-Control Coding: Linear block codes. Cyclic codes, Burst-error detecting and correcting codes, Convolutional codes, Comparison of coded and uncoded systems.

**EEE 540: Advanced Semiconductor Devices (3 credits)**

Review of basic semiconductor physics and III-V materials. GaAs metal-semiconductor field effect transistor (GaAs MESFET): introduction, structure, equivalent circuits, current saturation, effect of source and drain resistances, gate resistance and application of GaAs MESFET. High electron mobility transistor (HEMT): practical HEMT structure, energy band line-up, equivalent circuit, HEMT noise, pseudomorphic HEMT and applications. Fundamentals of quantum mechanics. Quantum devices: resonant tunneling diodes, quantum dots and wires. Nanotechnology: nanowires, carbon nanotubes, bio-inspired nanostructures, nano motors etc., future directions in nanotechnology.

**EEE 541: Advanced VLSI Design (3 credits)**

Overview of important issues in high performance digital VLSI design: Interconnect as key limiting factor, wire modeling, clock distribution of high speed system, power distribution, crosstalk and

power distribution noise. Low power design issues. CMOS design methodology: Structured design strategies, automated synthesis, placement and routing, circuit extraction, simulation, design rule check and testing. Combinational and sequential system design, state machine design, subsystem design, architectural design. Practical chip design examples.

#### **EEE 542: Digital Signal Processing (3 credits)**

Signal Modeling: Pade & Prony Matching, Solution of Autocorrelation Normal Equations, Burg's Algorithm, Linear Prediction, Wiener and Kalman Filtering. Spectral Estimation: non-parametric (periodogram, Welch and Blackman-Tukey modifications), parametric (AR, MA and ARMA). Two Dimensional Signal Processing: 2D z-transform, 2-D DFT and DCT, 2-D filters, image processing. Multirate Signal Processing: decimation & interpolation, polyphase filters, QMF filter banks Signal Coding: waveform coding, predictive coding, transform coding, MPEG1/2/4 audio and speech coding.

#### **EEE 543: Power Semiconductor Circuits and Drives (3 credits)**

Static switching devices, characteristics of SCR, BJT, MOSFET, IGBT, SIT, GTO, MCT. Classifications of static power converters and their application. Control circuits for static power converters. Pulse width modulation; PWM control of static power converters. Switch mode DC to DC converters, resonant converters, Fourier analysis of static converter waveforms, HD, THD, pf, ZVS and ZCS of static converters. Hysteresis current of AC drives. Input/output filter design of static power converters. Design of protection circuits for static power converters. Design of microcomputer controllers for static power converter switching.

#### **EEE 550: Advanced CMOS Technology (3 credits)**

CMOS Technology Overview: Evolution and recent advances in silicon electronics, Moore's Law and the ITRS, State-of- the-Art CMOS technology. Overview on CMOS Fabrication Processes: Overview of basic silicon processing steps, photolithography, isolation technique, threshold voltage adjustment, design rules and layout, technology for nanoscale fabrication. Nanoscale MOSFETs. MOSFET figures of merit: on- and off current, CVI metric, gate delay, power-delay product. Nanometer bulk MOSFETs: doping profiles, high-k dielectrics, gate stack design. Non-classical MOSFET structures: transport enhanced MOSFETs (strained Si and SiGe, Ge), SOI MOSFETs, multiple gate MOSFETs (lateral double-gate MOSFET, FinFET, Tri-gate MOSFET). Problems and challenges of nanoscale MOSFETs: shallow source/drain junctions, doping fluctuations (in the channel, in the source/drain regions), decreasing current drive capability, the limits of scaling (physical and process constraints). RF CMOS Devices and Circuits. Figures of merit of RF transistors, small-signal and low-noise RF MOSFETs, power RF MOSFETs. Challenges of Giga-Scale Integration. Reliability and yield, interconnects and delay, power dissipation and thermal issues, economics issues, active devices beyond CMOS, Si optoelectronic components.

#### **EEE 552: Laser Theory (3 credits)**

Geometrical optics and Ray-transfer matrix: Reflection, refraction, imaging, and lenses. Definition of ray-transfer matrix and applications. Electromagnetic theory of light: Optical wave functions, wave equations, Maxwell's equations in various media, energy flow and absorption. Interference: Principle of superposition and interference, two-beam interference and interferometry, multi-wave interference, Fabry-Perot interferometer, group/phase velocity and dispersion. Diffraction: Fraunhofer diffraction, Fresnel diffraction, diffraction at aperture and straight edge, diffraction gratings. Polarization: Jones vectors and Jones matrices, Fresnel equations, polarization devices. Photon, laser, and Gaussian-beam optics: Photon optics, laser basics, optical resonators, Gaussian beam, transmission of Gaussian beams through optical components. Semiconductor optics: Basic semiconductor physics, interaction of photons with semiconductors, absorption and emission. Semiconductor photonic devices: p-n junctions, light-emitting diodes, semiconductor lasers, photodetectors.

**EEE 554: Application Specific Integrated Circuit Design (3 credits)**

Types of ASICs- Standard cell, gate array, programmable logic devices. ASIC library design, library cell, gate array and standard cell design. Programmable ASIC logic cell and programmable I/O cell design. Programmable ASIC interconnects. Logic synthesis and simulation of ASIC using Hardware Description Language. Floor-planning, placement and routing of ASIC. ASIC testing : Boundary scan test, faults, fault simulation, automatic test pattern generation, built-in self test.

**EEE 555: Fundamentals of Nanoelectronics Technology (3 credits)**

Introduction to Physics of the Solid State: Crystal structure and lattice vibrations; energy bands, reciprocal space, effective masses, Fermi surfaces, localised particles e.g. donors, traps, excitons. Methods of Measuring Properties: Crystallography - particle size determination and surface structure; microscopy; spectroscopy. Properties of Individual Nanoparticles: Metal nanoclusters, semiconducting nanoparticles, rare gas and molecular clusters, synthesis methods. Carbon Nanostructures: Carbon molecules, carbon clusters - C60 and fullerenes; carbon nanotubes; applications of carbon nanotubes. Bulk Nanostructured Materials: Solid disordered nanostructures - synthesis and properties; nanostructured crystals - zeolites, photonic crystals. Nanostructured Ferromagnetism: Ferromagnetism; dynamics of nanomagnets, giant and colossal magnetoresistance; ferrofluids. Optical and Vibrational Spectroscopy: Excitons; infrared surface spectroscopy; Raman spectroscopy; Brillouin spectroscopy; Luminescence - photoluminescence, surface states, thermoluminescence. Quantum Wells, Wires and Dots: Preparation; size and dimensionality effects; excitons; single-electron tunnelling; applications - IR detectors, quantum dot lasers; superconductivity. Self-Assembly and Catalysis: process of self-assembly; catalysis. Organic Compounds and Polymers: Forming and characterizing polymers; nanocrystals; conductive polymers; supramolecular structures - dendritic molecules, micelles. Biological Materials: Biological building blocks - polypeptide nanowires and protein nanoparticles; nucleic acids - DNA, genetic code and protein synthesis. Nano Machines and Devices: Microelectromechanical systems (MEMS); nanoelectromechanical systems (NEMS); molecular and supramolecular switches.

**EEE 560: Optimization of Power System Operation (3 credits)**

General principles of optimization, its application to power system planning, design and operation. Probability analysis of bulk power security and outage data. Economic operation of power system- economic operation of thermal plants, combined thermal and hydro-electric plants. Theory of economic operation of interconnected areas. Development and application of transmission loss formulae for economic operation of power systems. Method of optimum scheduling and dispatch of generators.

**EEE 561: Advanced Protective Relays (3 credits)**

Review of characteristics of over current, directional, differential, distance and pilot relays. Principles of relay design. Effects of transients on relay operation. Harmonic relaying. Static and digital relays. Applications of static and digital relaying in various protection schemes.

**EEE 562: Power System Stability (3 credits)**

Principles of angular and voltage stability. Methods of multi machine transient stability: direct methods and time domain simulation. Equal area criterion. Extended equal area criterion, transient energy function (TEF) methods. Nonlinear system stability- Lyapunov's method. State space concepts and dynamic system representation. Eigen vectors in dynamic system analysis. Detailed modeling, simplifications, salient synchronous machines and induction machines modeling.

Turbine governor, generator excitation systems and their representation in stability models. Power system stabilizers. On line identification and improvement of stability through on line control.

**EEE 563: Power System Planning (3 credits)**

Basic objectives of power system planning. Generation expansion planning process. Electrical demand forecasting; current demand forecasting approaches. Generation planning; economic analysis, expected energy generation, expected fuel cost. Both-Baleriux, cummulant and segmentation methods. Probabilistic simulation of hydro and energy limited units. Expected energy production cost of interconnected systems. Economic aspects of interconnection. Different aspects of load management; effects of load Management on reliability and on production cost. Joint ownership of generation.

**EEE 564: Advanced Machine Design (3 credits)**

General treatment of Electrical Machine Design. Review of standard procedures in design of DC machines. AC machines, transformers and special machines. Optimization and synthesis of design procedures. Applications of material balance and critical path principles in electrical design. Design economics and safety factors. Applications of computers in modern designs including the operation of the machine in the nonlinear ranges: Magnetic flux-plots and heat transfer process etc. Mechanical design of electrical machinery and relation between mechanical and electrical machine design.

**EEE 570: Transients in Power System (3 credits)**

Transients in simple electric and magnetically linked circuits, fundamentals: impacts of switching on rotating machinery. Parallel operation of interconnected networks; distribution of power impacts. Interaction of Governor's in power systems. Overvoltage during power system faults. Systems voltage recovery characteristics. Effect of arc restriking on recovery voltage. Switching surges and overvoltage caused by sudden loss of load and by open conductor.

**EEE 571: Reliability of Power System (3 credits)**

Review of basic probability theory. Basic reliability concepts. Markovian model of generation unit. Development of load models. Probabilistic simulation of generating systems. Reliability indices. Recursive, segmentation and cummulant method to obtain loss of load probability (LOLP). Modeling of forecast uncertainty. Reliability evaluation of energy limited systems. Different techniques of evaluating reliability, reliability indices of interconnected systems. Composite transmission and generating system reliability.

**EEE 572: Modern Power System Modeling (3 credits)**

Overview of power electronic applications at utility and demand sides; sources of harmonics; utility devices and consumer loads. Various models for nonlinear and dynamic loads. High voltage direct current (HVDC) transmission system modeling. AC-DC load flow studies. Modeling of flexible AC transmission systems (FACTS): conventional thyristor controlled reactors and phase shifters, voltage source inverter (VSI) based static condenser (STATCON) and unified power flow controller (UPFC). Transient stability and sub-synchronous resonance (SSR) studies incorporating super conducting magnetic energy storage (SMES) model. Modeling of utility interfaced photovoltaic and wind energy sources. Power quality, cyclic and noncyclic voltage flicker, total harmonic distortion (THD) analysis, remedial measures and harmonic load flow studies.

**EEE 573: Generalized Machine Theory (3 credits)**

Introduction to generalized machine theory. Kron's primitive machine: moving to fixed-axis transformation; Park's transformation: three-phase to d-q transformation: variable co-efficient transformation: other transformations. Matrix and tensor analysis of machines. Three phase synchronous and induction machines: two-phase servo motor: single phase induction motor. Smooth-air gap two-phase synchronous machine. Two-phase induction machine. The n-m winding symmetrical machine. Diagonalization by charge of variable. Symmetrical three-phase machine and special limiting cases.

**EEE 574: Modern Control Theory (3 credits)**

State space description of dynamic systems: relationship between state equations and transfer function: continuous and discrete time linear system analysis and design using state transition method. Controllability and observability. State feedback and output feedback. Pole assignment using state feedback and output feedback. H control. Optimal control-dynamic programming. Pontryagin's minimum principle. Separation theorem. Stochastic control. Adaptive control.

**EEE 580: Computer and Machine Vision (3 credits)**

Sensors, Optics and Lighting; Image Representation, Point Operations; Neighbourhood Operations, Feature Extraction; Image Analysis, Image Classification, Image Transforms, Morphology, Texture Analysis, Colour Analysis, 3D Imaging Techniques, Intelligent Vision, Imaging Techniques;

**EEE 581: Speech Recognition (3 credits)**

Introduction, Speech signal: production, perception and characterization, Signal processing and analysis; Pattern comparison techniques: distortion measures, spectral-distortion measures, time alignment and normalization; Recognition system design and implementation: source-coding, template training, performance analysis; Connected word models, two level DP, level building algorithm, one-pass algorithm; Continuous speech recognition: subword units, statistical modeling, context-depending units; Task oriented models.

**EEE 582: Image and Video Compression (3 credits)**

The challenge of digital audiovisual compression: data volume, error visibility, streaming, real-time, compatibility. An overview of existing audiovisual compression standards (e.g. JPEG, H.261, H.263, MPEG-1, MPEG-2, MPEG-4). Visual coding theory and approaches: transform-based coding; hybrid coding; basic codec structure, intra/inter frames, macroblock structure, configuration of coding tools; advanced and unrestricted motion estimation, context-based arithmetic coding, overlapped-block motion estimation. JPEG: DCT coding, coefficient quantisation and Huffman coding. MPEG-1: I-,B- and P-pictures, user defined quantisation matrix. MPEG-2: Compatibility, scalability, interlaced tools, profiles and levels. MPEG-4: VOs and VOPS, layered codec structure, VOP bounding, alpha plane encoding (shape coding), half-pixel resolution motion estimation, advanced and unrestricted mode, padding/shape-adaptive DCT, scalability, error robustness, profiles. Future developments in audiovisual compression and related issues: (e.g. MPEG-7, visual object segmentation, video analysis). Non-normative coding techniques (e.g. fractal coding, region-based, wavelets).

**EEE 590: Special Topics (3 credits)**

This course will explore an area of current interest in Electrical and Electronic Engineering. The emphasis will be on thorough study of a contemporary field within EEE, and the course will be made accessible to students with an EEE background. The syllabus should be approved by the department chair prior to commencement of the term, and a detailed description will be provided before the registration period. Prerequisites: Permission of instructor

**EEE 591: Independent Study (3 credits)**

For students interested in any of the following ways of studying Electrical and Electronic Engineering: independently exploring an advanced topic under a faculty instructor; conducting significant research under a faculty supervisor; or doing an internship in industry under the supervision of industry and faculty advisors. In each case, the student must first identify a faculty member within the CSE department to oversee his/her work, and then write a proposal to the department chair outlining the means and objectives of the project. The proposal must be approved by the intended faculty supervisor and department chair prior to commencement of the term. At the end of the term, the student must submit a detailed report and/or give a presentation of the results, before the final course grade may be awarded. Prerequisites: Permission of instructor.

## James P. Grant School of Public Health

### Master in Public Health

#### MPH COURSES

##### BASIC CONCEPTS OF PUBLIC HEALTH

###### **MPH 501 –Introduction to Public Health**

Basic and essential concepts, tools and approaches of Public Health; Information on public health problem from the internet, published sources and by interviewing experts; Collaborative and oral presentation skills; Context affecting health and public health practice; Ethical challenges related to public health and with diverse and/or disadvantaged communities; Public Health problem and its magnitude, Key determinants, compare and prioritize interventions and/or policies in health and other sectors (agriculture, micro-credit, education) to address the problem.

###### **MPH 512-Anthropological Approach to Public Health**

General introduction to Social and Cultural perspective on health and health care and specific problem areas; Insights in the perspective of recipients and providers of health programs and health care; Mechanisms and strategies leading to a reorientation of health care programs and policies towards the actual needs of the target group; Difficulties related to the socio-cultural context in a health worker work.

###### **MPH 511-Qualitative Research Methods**

Basic skills of qualitative health research; Logic of inquiry in qualitative research and differences with quantitative research: Various study designs and how they are operationalized; various qualitative data collection techniques applied in health research with their uses and limitations; Communicate qualitative research findings to different stakeholders in health and health care. Methodological tools for qualitative health research using Ethnographic interviews, Participant Observation, Focus Group Discussion, PRA etc ; Design proposal for field research , analysis and writing up of the data of research.

###### **MPH 520- Quantitative Research Methods**

Various study designs ,specific research questions and field settings from a public health issue ; Independent and dependent variables ; Concepts of reliability and validity, Limitations posing research findings and conclusions; Operationalize study variables into a quantitative (pre-coded, close-ended) survey instrument; Design survey-based quantitative study and conduct research ;Data file utilizing a statistical software program ;Use raw dataset to conduct data cleaning, recoding and creation of variables for preliminary data analysis; Research question applicable to an extant dataset and implement preliminary (descriptive) analysis designed to address the research question , (that is secondary data analysis)

###### **MPH 521-Biostatistics**

Research methodologies, statistical methods, and applications, especially as applied within public health/population health environment; analyzing, interpreting, and presenting health-related research data. Descriptive statistics, basic concepts of probability, statistical inference, analysis of variance (ANOVA), correlation, regression, and distribution-free methods (non-parametric statistics). Introduction to Excel and SPSS, Introduction to Moodle course management system. diarrhoeal

###### **MPH 522-Epidemiology**

Principles of disease prevention within populations to real-life situations; Key terms used in the epidemiology and prevention of infectious diseases; Calculate and interpret basic population measures of health and disease occurrence including incidence, prevalence, and survival; Make

appropriate comparisons of disease rates within and between populations; Select and apply fundamental epidemiologic study designs including outbreak disease investigation, randomized clinical trial, cohort, case-control, and ecologic for the purpose of investigating public health problems; Critically review published epidemiological studies, identify their strengths and weaknesses.

### **MPH 530- Health System Management**

Health from various perspectives and discuss how health and development are inter-related and the role of health systems in improving and protecting health; Various levels and types of health systems and their inter-relationships – with country examples including public, private and traditional systems; Functions of health systems at different levels and details of various management systems needed to make the services function effectively ; Tools to use in assessing management systems and adapt them for writing a consultant report for a facility providing constructive guidance on improved management strategies ; Advantages and challenges of decentralization in health system management.

### **MPH 531- Health Economics and Health Care Finance**

Economics and its application in pursuit of better health and health care; Economic evaluation with their relative strengths and weaknesses; Costs related to health care, and their use in decision-making; Types of outcomes related to health care, and how they are measured and valued; Quality and usefulness of economic evaluations, utilization and expenditure surveys; Design, administer and analyze a facility cost survey. Different modes of provider payment, and their relative strengths and weaknesses; Concept of agency and forces which drive decision making among health care providers; Basic health insurance theory, factors threatening viability of insurance schemes; Evaluate Health Systems based on efficiency and equity; Impact of user-fees on utilization and equity with current trends.

### **MPH 541- Environment and Health**

Analyze and discussion on core values of environmental health and its range of areas of specialization; Appraise the interrelatedness of structure, programs, and services of water supply, sanitation and solid waste management systems in rural and urban conditions; Effects of heavy metals; Arsenic mitigation options on health in Bangladesh and developing country contexts. Pollution and Global Concerns in Environment and health context (Climate Change). Interpretation of the relevant public health policies and strategies for prevention of environmental health hazards.

## **PUBLIC HEALTH PRACTICE**

### **MPH 620- Epidemiology of Infectious Diseases**

Introduction to a number of important viral and bacterial diseases that are prevalent in developing countries; Disease distribution in time, place, and person; Effects of age, route of transmission, nutritional status, immunity, degree of exposure on disease epidemiology ; Effects of environmental factors on disease epidemiology; Surveillance and Control strategies; Case study presentation of an ongoing epidemic.

### **MPH 670- Public Health Nutrition**

Global situation of nutrition with emphasis on factors which contribute and its consequences; Nutritional requirements throughout the life cycle indicating the clinical consequences when these are not adequately met; Nutritional deficiencies and their treatment in the context of Bangladesh; Various interacting factors contributing to malnutrition in communities identifying practical activities to address them; Indicate how nutritional considerations can be woven into the design of public health and other development programs; Assess the nutritional state of a community, including techniques, samples, etc and monitor programs to improve community nutrition ; Pitfalls and problems in the management of large public health nutrition programs.

### **MPH 660 – Reproductive and Sexual Health & Rights**

Components of reproductive health (RH), History of International RH policies along with Global and local barriers to reproductive health and rights Basic epidemiological and anthropological facts concerning major areas of reproductive health; Intersections between gender, socio-cultural, political and economic factors as they affect women's lives and their reproductive health experiences and expectation; Understand global policies , local realities , the barriers and facilitators to the use of reproductive health programmes: Implementation challenges and achievements ; reproductive rights; gender based violence and their intervention.

### **MPH 681- Aging and Health**

Population ageing, its underlying factors as well as regional and gender dimensions of ageing. Implications of rapid population ageing in low-income countries in the context of public health. Identification of the multiple facets of ageing; Double burden of communicable and non-communicable diseases in old age in low-income countries as well as high prevalence of co-morbidity; Mortality among older people due to preventable conditions common to low-income regions of the world. Projection of enormous burden of non-communicable diseases in the near future among the older population. Health promotion aspects for preparation for healthy ageing from young adulthood.

### **MPH 690 – Principles of Health Communication**

Health and Population Communication - its key concepts, theories, research and applications. Knowledge and skills in public health as a professional: Component for a primary care health project, Health Communication objectives, audience approaches, media and message formats. Communication as convergence, Effects of exposure and Health Communication ; Effective communication strategies, programs and activities to change key behaviours related to elements of primary health care, including Family Planning/Reproductive Health; Maternal and Child health; HIV/AIDS; Infectious Diseases; Nutritional, Occupational, and Mental health.

### **MPH 691: Monitoring and Evaluation of Public Health Programme**

Evaluation, monitoring and research, Major evaluation theorists and Major evaluation purposes, Evaluation standards: utility, feasibility, propriety, accuracy; major steps in conducting evaluation (CDC's evaluation framework), evaluation designs: experimental; quasi-experimental; naturalistic, and mixed-method; Major and minor evaluation methods: document review, surveys and questionnaires, individual and group interviews, observation, participatory methods, and creative expressions.

### **Health and Development Seminars**

Health and Development Seminars take place throughout the academic year and exploit the rich resources of experts with experience from home and abroad to speak on different issues related to public health. All students have to be present to share and enrich their knowledge.

### **Integration Workshop**

An Integration Workshop takes place at the end of the modules and dissertation which attempts to link the topics and issues covered in different blocks over the year.

## **CONTINUING EDUCATION PROGRAMME**

### **SHORT COURSES**

#### **Health Care Financing**

The fundamental principles of health economics as well as that of healthcare financing in the context of Bangladesh are discussed throughout the course. Along with discussing the theoretical principles underpinning health economics and healthcare financing, the course also reviews some



of the tools and techniques of financial planning and budget control measures. The course is supported by MOHFW and WHO.

### **Health Equity**

The School in collaboration with World Bank and the World Bank Institute Washington DC, and the ICCDR, B offers course on Equity in Health tailored for participants from Bangladesh. Participants are the midlevel health sector managers, government officials and public health experts involved in health sector reform. The main objective of this course is to develop public health capacities so that individuals can deal with health inequalities in Bangladesh.

### **Health System Research and Development**

With an objective of strengthening further the health system through capacity building of the health professionals, the HSRD course trains health professionals from different organizations in collaboration with ICDDR, B. The participants are exposed to a number of health system issues which include health system structure, health care financing, health human resource, management and leadership, concepts of organization etc. both from the country and global perspective. Sharing of these problem based research findings generates extensive debate and helps to identify key health system issues in Bangladesh

### **Quality Management in Health Systems**

The overall purpose is to strengthen the health system through enhanced quality of services and their effective and efficient management. The overarching goal of the Quality Management in Health Systems course is to provide health professionals with the knowledge, tools and skills in improving and sustaining quality in healthcare services and systems

### **Thinking Qualitatively: Theory & Practice of Qualitative Research Methodology**

The course deals with the basic features and concepts of qualitative research; application of qualitative research tools in respective disciplines. It also aims to help the participants in preparing qualitative data transcripts from descriptive field notes and then apply the preliminary steps of qualitative data analysis and interpretation

### **Executive Certificate in Public Health Management**

The primary goal of the ECPHM Program is to further enhance the public health leadership and management capacity of the human resources for health (HRH) in Bangladesh particularly the Upazila level health and family planning officials who form the most critical component of the health care system. The program tries to provide an understanding of public health concepts and helps the participants to enhance their theoretical and practical skills and manage health system issues. It also contributes to a greater understanding of socio cultural-factors and health and development problems faced in Bangladesh and strengthen disaster management capacities of the participants.

### **Evaluation of Development Programme**

The course explores the differences between evaluation, monitoring, researches and the role and purposes of evaluation, and its relevance in development .The course also aims to understand and apply the major standards of professional evaluation, identify the major steps in conducting program evaluation along with types of evaluation design, data collection methods.

### **Monitoring and Evaluation of Maternal and Neonatal Health Programmes**

A short course designed to strengthen capacity in developing countries for programme monitoring and evaluation in the context of global reproductive health goals. This course will train programme managers in the theory and practice of monitoring and evaluation of maternal and neonatal health programmes, enabling them to examine, evaluate and enhance current practice in monitoring, to design and implement evaluations and to use results to advocate for improved maternal and neonatal health.

## BRAC Development Institute

### DESCRIPTION OF COURSES

#### MASTER OF DEVELOPMENT STUDIES (MDS)

#### EACH COURSE IS OF 3 CREDITS

**DEV 300: Economics and Development:** This course aims to build a solid understanding of basic economic principles and the methodology of how economists analyze problems. The course sets out to explain how a modern economy functions and to introduce the students the major economic problems.

**DEV 301: Fundamentals of Social Science I - Sociology and Anthropology of Development:** The objective of the course is to prepare the students to critically comprehend the structure and function of the society, and to sensitize them to existence of diversity in social organization and culture. It also aims to introduce the students with the civilization, sociology, culture economics and politics tracing them through the evolutionary stages and with their impact on society.

**DEV 302: Fundamentals of Social Science II - Politics, Political Economy and Government in Bangladesh:** The course aims at acquainting the students with the political systems and processes with special reference to Bangladesh. The objective of this course is to help students know the basics of political philosophy as well as political economy and government in Bangladesh from a developmental perspective. This course also aims at encouraging critical thinking, analytical skills, knowledge enrichment, and problem-solving capabilities of the students. The successful completion of the course will help the students become successful leaders, administrators and managers in the field of development.

**DEV 501: Development Perspectives:** This course provides an overview of development theories and concepts. It highlights the diverse meanings of the word 'development' and explains alternative theories of why how and how development takes place in a given society or fails to do so.

**DEV 502: Poverty--Concept, Measurement and Policy:** The objective of this course is two-fold: (a) to apprise the students of the conceptual framework underlying the current discussions on poverty, and to (b) introduce some of the issues related to its measurement.

**DEV 503: Global Dimensions of Development:** This course aims to examine the channels through which global forces shape national efforts at development. In particular, the course aims to acquaint students with the major debates surrounding the role of global forces in creating opportunities as well as constraints for national development.

**DEV 504: Rural Development:** A systematic introduction to the history and contemporary issues facing the rural economy and society, the changing interrelationships between rural and non-rural spheres.

**DEV 505: Gender and Development:** This course situates the study of gender and development in both an academic social science context and in the context of policy-making and implementation.

**DEV 506: Monitoring and Evaluation of Development Programs:** This 3 credit course aims to provide the key concepts and skills needed to develop, manage and carry out monitoring and evaluation of development projects. The idea is to provide generic concepts and tools though

project specific examples will be used as case studies. The focus will be on developing a mindset of critical enquiry and openness to the diversity of methodologies ranging from survey based to participatory.

**DEV690: Research Methods and Concepts:** This course will introduce students with scientific approaches and explanation to knowledge as well as objectives and role of research in attaining knowledge. The important approaches of research that will be discussed are positivism; interpretive social science; critical social science; phenomenology etc. Different types of research i.e. applied research, qualitative research and quantitative research will also be discussed.

**DEV 691: Statistics and Computer skill development:** The course aims at developing the students' basic skills in quantitative methods in research by laying a foundation in the fundamentals of mathematics and statistics and familiarizing students with basic computer software used in quantitative social research.

**DEV 692: Research Design and Proposal Writing:** The students will learn the techniques of research and how to design a viable research. They will concentrate on selection and formulation of a research problem and write a successful research proposal based on an identified research problem.

**DEV 693: Thesis (optional):** Students may choose to write a thesis based on the proposal defended in DEV 692. The thesis will be an original research work completed under the supervision of a supervisor assigned by the university. The thesis will be approximately 30 pages long. A student will have to present and defend his/her thesis in front of committee. After a successful defense and necessary revisions, the student will be eligible to get an MDS with a thesis.

**DEV 601: Comparative Development Experience:** Introduces the variety of development experience in different time periods and in different regions of the world, with an appreciation to the existence of multiple paths to as well as multiple constraints to development.

**DEV 602: Development Informatics:** The course will examine the existing use and future potential of computers and Internet use in various development activities, including computers in Rural Development; E – Governance; Local Governance and Information Systems etc.

**DEV 603: Education and Development:** This course seeks to acquaint the students with the role of education in human development, poverty alleviation and empowerment, and with the alternative approaches for promoting education for development.

**DEV 604: Environment and Development:** Development takes place in, and depends on resources drawn from the natural environment. At the same time, the processes of economic and social change, which define development, have impacts upon the natural environment. This course introduces these complex and changing relationships.

**DEV 605: Governance and Development:** To provide students with a theoretically informed understanding of governance issues and the ways in which it impinges on various development questions. In addition, the students will acquire analytical skills to develop, analyze and implement governance policies in specific institutional settings.

**DEV 606: Health and Development:** The objective of this course is to introduce developmental issues that affect health of the population and vice versa. Basic concepts for the analysis of development and its impact on health, nutrition and human wellbeing will be introduced. The emphasis will be on poverty, population growth, food supply and consumption, health and development linkages, equity in health, gender dimension of health and institutional aspects of development

**DEV 607: Indigenous Knowledge in Development:** The objective of this course is to examine the view that understanding indigenous knowledge systems and their evolution can hold extremely valuable lessons for designing effective development interventions and approaches.

**DEV 608: Microfinance and Development:** Students taking this elective course will have a good understanding of the evolution of thinking and practice and the debates underpinning microfinance, with special focus on the role of microfinance in alleviating poverty.

**DEV 609: Nationalism, Identity Politics and Development:** This course aims to provide an understanding of how the multifarious forces like religiosity, ethnicity, communalism, etc., compete with each other and contribute to the development of national identity of various population groups. The empirical focus will be on the experience of Bangalis and on explaining how the sense of nationalism can be engineered in the achievement of effective development in Bangladesh.

**DEV 610: NGOs and Social Entrepreneurship:** Identifying and solving large-scale social problems requires social entrepreneurship. This course introduces the ideas of social entrepreneurship, and how individuals and institutions have used such perspectives to develop innovative solutions to address different types of social problems.

**DEV 611: Population and Development:** The objective of this course is to explicate determinants and consequences of population growth, with a special focus on the interactions between population growth on the one hand and socio-economic development on the other.

**DEV 612: Project Appraisal and Management:** Examines the issues and principles involved in the identification, preparation, appraisal and management of developments projects.

**DEV 613: The Rights based Approach to Development:** Familiarizes the students with the basic ideas of the human rights discourse and introduces the emerging literature on the implications of adopting a rights-based approach to economic and social development.

**DEV 614: Technology and Development:** Familiarizes the students with the history, experiences, future possibilities, and constraints of using technology in development process.

**DEV 615: Urban Development:** Investigates issues related to urbanization and its relationship to development from both spatial and cultural perspectives.

**DEV 616: Financial Management:** Covers the foundations of accounting and finance, and its applications for financial decisions for development projects.

**DEV 617: Law and Development:** At the conclusion of the course, students should be able to demonstrate a comprehensive knowledge of the types of law and development problems facing less development nations; to display an understanding of some of the many ways in which law is involved in the development process; to evaluate the operation of the law in the development process and vice versa and; to use both legal and non-legal research resources in order to complete a piece of independent research, which relates to the course.

**DEV 618: Social Communication:** New generation development programs recognize that there is a need to mobilize the society to achieve program objectives and targets and measure investment in this sector through accepted methods and systems. To achieve this objective, students will learn theories of social communication and attain professional expertise in social and development communication in this course.

## **Postgraduate Certificate Course on Management of Land Acquisition, Resettlement and Rehabilitation**

### **MODULE 1: Understanding Displacement and Sustainable Development**

Module 1 introduces the student to the key concepts and frameworks utilized by practitioners and scholars working in the field of land acquisition and resettlement. Students will be introduced to the history of involuntary resettlement in relation to development projects and programs, and how the practice of resettlement has informed the scholarship and the management tools to deal with such instances.

### **MODULE 2: Policies and Laws**

The module provides with a history of land acquisition and resettlement laws from the British Land Acquisition Act of 1894, to the adoption of national laws in each of the countries of South Asia. This module aims to introduce the national legal framework that governs the acquisition and requisition of land in Bangladesh as well as international policies utilized by the World Bank, ADB and other financial institutions.

### **MODULE 3: Social Impact Assessment (SIA) Methods**

The third module introduces the students to the important tools and techniques of applying Social Impact Assessment (SIA), which is the most common tool utilized to determine who is affected and how. Module 3 aims to look at how the SIA is developed in the broader context of the overall project design, and specifically in the context of the Environment and Social Impact Assessment (ESIA). The module focuses on different aspects of an SIA, with a particular emphasis on methodological aspects, such as the development of baselines, indicators, alternative analyses, minimization of impacts and the identification of vulnerable groups and households. Particular attention will be paid to the analysis of data collected both from a quantitative as well as qualitative perspective.

### **MODULE 4: Consultation and Communication with Affected Communities and Stakeholders**

Module 4 addresses the importance of consultation and communication for effective management of resettlement programs. This module deals with techniques in communication for effective consultation processes. The module is divided into three main topics, i.e. 1) consultation with affected communities and stakeholders, 2) communication strategies, and 3) conflict management issues. The aim of the module is to present various modalities for identifying directly and indirectly affected people, and stakeholders that need to be consulted in the various stages of land acquisition and resettlement planning and implementation.

### **MODULE 5: Building a Resettlement Action Plan (RAP)**

Module 5 focuses on how to minimize and mitigate the impacts identified through the SIA. The Resettlement Action Plan (RAP) is the document that encapsulates all decisions and actions to avoid, minimize and mitigate impacts related to land acquisition and resettlement. Module 5 introduces the key concepts, definitions and necessary steps to build a RAP and the timing of its preparation vis-à-vis the overall project cycle. The RAP includes crucial aspects of a resettlement project including compilation of lists of affected people and their respective assets inventories and thus their compensation packages.

### **MODULE 6: Managing Resettlement and Rehabilitation Programs**

Module 6 addresses specific management challenges in implementing the actions inscribed in the RAP. This module provides a thorough understanding of the complexities implementing and managing resettlement and rehabilitation programs as a part of the larger development project. Module 6 also addresses the issues of reconstructing livelihoods of affected people including the challenges arising from cash compensation packages, disconnection of established social networks, host communities and their resource constraints.

## **MODULE 7: Data management and Management Information Systems for Resettlement Programs**

Effectively managing a resettlement program requires the practitioner to have the skills to handle large data sets and databases in the various phases resettlement planning, executing and monitoring. In addition, documenting the multiple actions and phases of a resettlement program are critical from a legal angle and from the standpoint of investigations and third-party evaluations that may be required by authorities. Module 7 introduces a set of tools and instruments to manage the data flow during all phases of resettlement planning and implementation. This module focuses on the different ways of building performance indicators specific to resettlement programs and M&E tools and techniques used by resettlement practitioners including an introduction to GIS programs.

## Institute of Educational Development

### Brief description of courses offered

#### POSTGRADUATE CERTIFICATE, DIPLOMA & MASTERS IN EARLY CHILDHOOD DEVELOPMENT

##### **ECD 521: Foundations of Child Development**

The course is designed to give students the foundation for understanding the field of child development. The main objectives of this course are to provide students with an understanding of the major theories and the strengths and shortcomings of each, the sequence of child development and the processes that underlie it, an appreciation of the impact of context and culture on child development, the joint contribution of biology and environment to development, a sense of the interdependence of all aspects of development physical, cognitive, emotional, and social and an appreciation of the interrelatedness of theory, research and applications.

##### **ECD 522: Working with the Families**

This course will focus on the issues and strategies related to two main types of programme options including centre-based programmes and those aimed at reaching parents and other caregivers. Regarding the design and implementation of programmes for groups of children, the course will focus on best practices in curriculum development - a framework of curriculum development as well as the design and organization of high quality learning environments will be explored through an examination of existing programme materials and case studies.

##### **ECD 523: Play and Creativity**

This course gives students a theoretical knowledge base and practical skills at facilitating children's play and creativity. Students will develop an understanding of the various debates that surround this topic so they can be well-informed advocates for play and creative expression in early childhood settings. The objectives of the course are: to understand the significance of creative expression and play in early childhood, to know the major theories of play and the points of controversy, to have a strong theoretical basis for effective play practices, to understand the influence of play and creativity on all domains of child development, to know the developmental changes in the nature of play during early childhood, to understand how differences (gender, race, class, ability, etc.) impact play and creative expression.

##### **ECD 524: School Readiness**

Learning to read and write is critical to a child's success in school and later in life. One of the best predictors of whether a child will function competently in school and go on to contribute actively in an increasingly literate society is the level on which the child progresses in reading and writing. Similarly, when it comes to maths, young children are natural learners and they construct their own understanding about quantity, relationships and symbols. The objectives of this course are to: understand both the developmental continuum of reading and writing as well as the impact of individual differences and social and cultural variations on outcomes; the important role of developmental stages in the first three years as well as the social and cultural context in which children live and to be familiar with a set of principles that underlie the teaching, learning and assessment of early numeracy; to understand the strategies for teaching operations and counting; patterns, functions, and algebra; geometry and spatial sense; measurement and data analysis.

##### **ECD 525: A Framework for Designing Early Childhood Programmes and an Introduction Research**

The goal of Early Childhood programmes is to meet the young child's multiple rights and needs by taking into account the health, nutrition and psychosocial stimulation aspects of children's development, while at the same time making the environment more friendly to the child in which

the child lives. The objective of the course is to provide students with an understanding of programme development, beginning with an assessment of the situation for young children and their families, to establishing a monitoring and evaluation system to provide ongoing feedback on the programme's effectiveness.

#### **ECD 526: Research Methods: An Introduction to Basic Principles**

This course will introduce a wide variety of approaches to research and a range of research studies, equip students in understanding research paradigms and methods and provide knowledge and skills needed for designing and conducting research projects. The objectives are to develop critical skills in reading and evaluating research, make decisions about appropriate research designs for empirical work, design small scale study to be conducted for the dissertation, understand and select appropriate means of data collection and analysis and report writing.

#### **ECD527: Contemporary Issues in Child Development**

This is an advanced course in Child Development. A relatively new perspective applied to studying human development will be used as the framework for exploring four contemporary issues of early childhood development. The course objectives are to provide students with an understanding of the theory of developmental health, appreciation for developmental health perspectives, knowledge on brain development and its interconnection with environmental influences, current thinking about genes, experience, interaction, resilience, self regulation, coping strategies and social and emotional competence, children's communication and learning and current research practices.

#### **ECD 528: Individualized Teaching and Learning**

Individualized teaching is an educational approach that takes into account what each child brings to the teaching and learning situation.

The course objectives are:

- To understand the purpose and importance of individualized teaching
- To know the various dimensions of the individual child
- To understand the major categories and theories of individual differences
- To learn and practice generic individualizing strategies
- To know ways to individualize teaching for the whole class, subgroups within the class, and individual children based on each dimension of the individual child
- To plan for individualized teaching
- To select and adapt materials to optimize individualized teaching
- To advocate for individualized teaching as an essential teaching and learning strategy

#### **ECD 529: Policy Development and Advocacy**

This course will enable students to understand the importance of policies and analyze current policies in place in terms of their impact on young children and their families. The objectives of the course are for students to: understand the role of policy in defining a government's commitment to young children; ensure that all learners become familiar with ECD-related policy analysis in their context; examine the relationship between policy and its implementation (including examination of implementation processes and resource allocation; and provide an overview of the role of advocacy in both creating new and/or changing policies, and advocacy as it is applied to the process of policy implementation.)

#### **ECD 530: Advanced Research Seminar**

Students wishing to pursue a Master's degree will be required to participate in a small advanced research seminar. The goal of this seminar is to guide students in the selection of a dissertation topic. Building on the readings introduced in course ECD 529, a series of guided readings will provide deeper understanding of the range of research designs as well as suggested tools and measurements.



## **Brief description of courses offered**

### **MASTERS (MEd) AND POSTGRADUATE DIPLOMA (PGD) IN EDUCATIONAL LEADERSHIP PLANNING AND MANAGEMENT**

#### **EDU 501: Educational Theories and Practices: A critique 2 Credits**

This course will introduce the participants with key theories and concepts in the interface of education and development and will widely engage them in critical analysis of present educational practices in different contexts, from both a national and global perspective. Contemporary issues in education will be discussed bringing examples from educational systems of developing and industrialized countries, and the theories presented will offer the conceptual framework for such discussion.

#### **EDU 502: Leading Improvements in Education: Ongoing Work in Bangladesh 2 Credits**

This course will assist the participants to study forms of education such as formal, non-formal and popular education and understand how these frameworks shape projects and programs. They will examine various educational projects and programs from both theoretical and practical viewpoints, and engage in context and policy analysis and debates around these policies and programs.

#### **EDU 503: Creating Learning Organizations: Leadership, Planning and Management 3 Credits**

This course will enable the participants to understand the process of creating a learning organization. This will include learning to create a collaborative management structure, and redefining the role of teachers, supervisors and students so that they contribute actively to create a learning organization. The course will emphasize concepts, frameworks and processes in creating a learning organization from the viewpoint of a school leader, as well as the process of feedback to improve an existing situation by incorporating different stakeholders' inputs.

#### **EDU 504: Research Methods 1: Reading Research and Writing Reports 4 Credits**

This course will help develop participants' understanding and skill in research approaches, methods, and tools – both quantitative as well as qualitative. In particular, there will be opportunities to discuss issues related to conducting research and also to design research tools such as survey, questionnaire, observation and interview checklists, as well as participatory research tools such as PRA. They will also gain knowledge of the norms of literature review and develop skills in the process of report writing.

#### **EDU 505: Principles of Curriculum and the Development of Learning Materials 2 Credits**

The objective of this course is to give basic understanding to the participants about curriculum concepts, models, basic principles, and the interrelated components and steps pertinent to the curriculum development process. They will also engage with the principles of developing learning materials, particularly how to increase the quality of learning in a low resource context.

#### **EDU 506: Leaders as Learners: Leading People in Educational Institutions 3 Credits**

This course will help participants to understand school and program management processes and develop skills of management to improve a work place situation. It will focus particularly on collective decision making processes and progress monitoring processes to increase their ability to become effective leaders and managers.

#### **EDU 507: Leaders as Learners: How Children and Adults Learn 2 Credits**

This course will engage the participants in understanding adult and children learning theories, and new research about how the brain functions and shapes children and adults' learning and growth. It will help the participants to understand commonalities and differences among them, and develop skills to integrate the essence of theories and research into teaching and management practices.

**EDU 508: Educational Measurement and Evaluation****3 Credits**

The purpose of this course is to help the participants understand the types and processes of measurement and classroom assessment, and design different tools of measurement and classroom assessment. In doing this, they will be able to critique existing assessment practices, understand the side effects of different types of assessment, and develop skills for alternative assessment techniques.

**EDU 509: Whole School Improvement Approach: How Can We Make It Work? 3 Credits**

This course will assist the participants to analyze factors that contribute to the overall improvement of a school, understand the relationship between reform and school improvement, and to develop plans for pedagogical, supervision, and infrastructure development to improve learning and efficiency of the school.

**EDU 601: Improving Outcomes in Bangladeshi Schools: A Case Study****3 Credits**

This course is for the PDG candidates and requires 10 days placement in school rather than course attendance at seminars and lectures. It will give the participants an opportunity to examine real-life school issues and leadership to test theories and practices of the management process. They will do a systematic investigation/ observation at the school and relate the models and concepts of leading change to the school. They will prepare a case study, identifying best practice in school leadership and improvement and their applications at the school.

**EDU 602: Research Methods 2: Planning and Preparing Research****3 Credits**

This course is for the Masters candidates and aims to develop their skills of planning and preparing research. In this course they will learn to identify educational problems, formulate research questions, select appropriate methodology and develop a research design. They will also be able to review literature to develop a conceptual framework, and gain the ability to collect, analyze and interpret the data. This course will result in the development of a research proposal for the Masters thesis by the participants.

**EDU 603: Masters Thesis****9 Credits**

This course aims to provide the participants opportunity to conduct independent research and write a dissertation. As part of the requirements for the MEd degree, the candidates will conduct research based on a research proposal they develop in EDU 602, and submit a written thesis. The research may employ different approaches, including action research, qualitative, quantitative, and mixed methodologies. The thesis will be supervised and guided by faculty members.

**Teaching Methods**

“Learning by doing” is at the core of the teaching-learning approach of the programme. It combines face-to-face sessions with individual study, preparatory time and assignments. Debates, group discussions and dialogue will be the main pedagogical processes. The students shall also attend workshops, presentations and *field trips*. IED-BRACU has brought together a team of highly qualified and well-reputed national and international faculty members and resource persons, adding diversity and richness to the learning environment.

## Institute of Governance Studies

### COURSE CONTENTS<sup>1</sup>

#### A. PREPARATORY COURSES:

##### **GOV 101: Basic Course in Computing** (Non-credit)

**Objectives:** Introduces the students to the nature of operation, uses and potential of computer in organizations. Learning by practice is emphasized.

##### **Contents**

- Introduction to hardware and software technology
- Word Processing
- Power point presentation
- Database management
- Spreadsheets
- Electronic communication

##### **GOV 102: Basic Course in English** (Non-Credit)

The course will be offered in "Writer Tutor" form and will continue during the subsequent semesters.

##### **Objectives**

This course is intended to train the students in preparation of academic papers in English and in writing their thesis in an effective manner.

##### **GOV 103: Research Methodology & Statistics** (Non-Credit)

This preparatory course is also continued in second semester.

#### B. CORE COURSES:

##### **GOV 501: Introduction to Governance**

##### **Objectives**

The present course acquaints participants with the introductory concepts of political science and how they relate to the concept of improved governance. It also aims to present governance concepts, issues and innovations by presenting them in historical, global and local dimensions. In a nutshell the mission of the present course is to help understand the dynamism of governance in the global scale.

##### **Contents**

- Concepts of public sector management and paradigms shifts in models of public sector management.
- Conceptualizing governance and types of governance, good governance and its characteristics.
- Historical overview of emergence of governance, concepts and their critiques.
- Accountability, transparency in a democratic society for helping government to better service delivery to people.

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1. Course contents given here are tentative as contents for all Courses could change depending on the Course Outlines of individual course teachers.

- Collaborative governance in theory and practice.
- Good enough governance for poverty reduction and reform in developing countries.
- Democracy, governance and economic performance.
- Good governance and the MDGs contradictory or complementary?
- Key concepts and frameworks of governance, indicators of governance; definitions and manifestations of equity, accountability, integrity, transparency, voice, access, participation, etc.
- Issues in governance: broad sweep of the global and local problems.
- Dynamism and innovations in governance.

### **GOV 502: Economics for Public Leadership**

#### **Objectives:**

The course is intended to enhance the capacity of participants in analyzing economic issues faced by public servants. As civil servants and policy makers, the participants will be required to identify, understand and analyze economic issues and take decisions that may have profound affect on economic growth, social development and poverty alleviation. The course will also provide tools for understanding the effects of government policies, as well as a useful framework for analyzing normative issues such as "what is a good policy?" It will focus on public finance which is concerned with government expenditure and taxation and the policy analysis of budget management and the implications of sectoral allocations, including options for reforms of the budget and financial sector.

#### **Contents: Part A**

- The nature and method of economics
- Demand and supply, Individual markets
- Elasticity of demand and supply and their applications
- Production and cost
- Market structures, with special focus on perfect competition and monopoly
- Economic efficiency, market failure and the role of government
- Measurement of national output/income
- Determination of national income: AD & AS model
- Unemployment & inflation and trade-off
- Government budget and fiscal policy
- Money creation and monetary policy
- Economic growth and cycles and macro stabilization

#### **Contents: Part B**

- Public goods and externalities
- Market failures and government failures
- Public expenditure, analysis of policies
- Taxation, tax administration and evasion
- Analysis of public expenditure and income; budget
- The role of financial sector.

### **GOV 503: Strategic Management**

#### **Objectives**

Identify and evaluate options for strengthening the performance of public organisations and managing changes in the public sector.

#### **Contents**

- Concepts and thesis of strategic management in public sector;
- Vision, mission and objectives; Development of strategy process; Strategic planning;

- Implementation; Monitoring; Evaluation and taking corrective steps.
- Management of change in organisations.

### **GOV 504: Lessons in Development**

#### **Objectives**

Acquainting participants with the concepts of development and development policies, actors in development, changing paradigms of development and global best practices.

#### **Contents**

- Evolution of the concept of development
- Development as growth of national income
- The theory of take-off
- Development, dualism and modernization theory
- Marxist critique and Dependency School
- Post-modernist critique of development theory
- Development and distribution: the Kuznet's hypothesis
- Inequality, basic needs and poverty alleviation
- Capability, human development and development as freedom
- The right to development as a human right
- Sustainable Development
- Development, the state and the market
- Development in the age of globalization
- Alternative Development: NGOs, civil society and social movements
- Paradigm Shifts in Development

### **GOV 505: Leading Issues of Governance in Bangladesh**

#### **Objectives**

The mission of the present course is to perceive the areas of strengths and weaknesses of governance in Bangladesh. Through this course an attempt will be made to identify and promote effective, transparent, accountable, ethical and citizen-friendly governance in the country. The course will enhance the capacity of MAGD participants in analyzing governance issues in Bangladesh in an objective and coherent manner. It will recognize the leading issues that are related to services provided from government counters, where people line up daily to receive services to which they are entitled. Participants who complete the course should be able to interpret the various options relating to broad areas of governance issues in Bangladesh. Through class room presentations, this course will facilitate necessary opportunities to the students for the exchange of their ideas and sharing of experiences both on grass root and national governance in Bangladesh.

#### **Contents**

- Common features of governance in Bangladesh; Perceived areas of weaknesses of governance in Bangladesh; Donors' perception of good governance in Bangladesh.
- Major problems in political governance; Arrangements of power sharing between the organs of government; Powers of the Executive branch; Challenges of the parliamentary democracy.
- Problems of democratic consolidation; Confrontational Politics; Constitutionality of the Caretaker Government; Steps to restore democracy.
- Problems of Bureaucracy in Bangladesh; Reform measures toward establishing responsible bureaucracy; and the role of civil service in democratic administration.
- The politics of decentralization; Problems of decentralizing rural administration in Bangladesh; Reintroducing Upazila Parishad; Functioning of Union Parishad; etc.
- Economic governance and aid effectiveness; Challenges for Bangladesh becoming a middle-income country.

- Bureaucratic implications of project management in Bangladesh;
- Rural Development policies & strategies in Bangladesh; Institutional mechanism for poverty alleviation.
- Sustainability of NGOs in Bangladesh; Role of BRAC in the socio-economic development.
- Corruption and ethics in Bangladesh administration; Effects of corruption on economic development; National Integrity Strategy for tackling corruption in Bangladesh.
- The Role of vibrant civil society for improved governance in Bangladesh.

### **C. ELECTIVE COURSES:**

#### **Cluster A: Global Policy Framework**

#### **GOV 601: Environmental Management and Sustainable Development**

##### **Objectives**

This course aims at acquainting participants with the environmental challenges at global as well as local level and how environment and development interact with each other. It also introduces them to various instruments designed to reconcile potentially conflicting concerns for environmental protection and economic development.

##### **Contents**

- Renewable versus non-renewable resources
- Tragedy of the Commons
- Dimensions of environmental problems: deforestation, soil erosion, water scarcity, loss of biodiversity, loss of common property resources, outdoor pollution, indoor pollution, climate change
- Relationship between economic growth and pollution
- Policy instruments for pollution control: tax/subsidy, command/control and tradable permits
- Poverty-population- environment nexus
- Sustainable Development
- Gender and Environment
- Indigenous knowledge and environment
- Earth Summit and international protocols on environment

#### **GOV 602: Laws of International Governance and Cooperation**

##### **Objectives**

To acquaint students with international laws, protocols and institutions relevant to governance in a nation state.

##### **Contents**

- The Evolution of the doctrine of national sovereignty
- The significance of International Law
- International Court of Justice, international criminal court and High Commissioner of Human Rights
- UNO and international security
- Human Rights and international agreements on human rights, racial discrimination, women, children and torture
- Bretton Woods institutions and economic surveillance
- WTO and trade surveillance
- International protocols on environment
- Disputes relating to contracts and international arbitration
- International maritime agreement and laws relating to sea.

## **GOV 603: Current Issues in Globalization**

### **Objectives**

To acquaint students with the concepts, benefits, limitations and challenges of globalisation from the national perspective.

### **Contents**

- The concepts of globalisation and Index of globalization
- The benefits and limitations of globalization
- De-industrialization
- Protecting human security and economic crises
- International financial crisis and protecting people from economic change and adjustment
- Controlling global crime
- Protecting cultural diversity
- Protecting global environment
- Narrowing global gaps
- Specific actions to strengthen the bargaining position of poor countries
- MDGs and their implementation.

### **Cluster B: Enhancing Performance**

## **GOV 610: Budgeting and Management of Public Resources**

### **Objectives**

The aim of the course is to provide an understanding of the government budgetary process, in particular, mobilisation of local and external resources, structure of taxation, implications of deficit financing, budgetary control and participatory budgetary process.

### **Contents**

- Mobilization of local resources- Taxes and non-tax revenue
- Mobilization of external resources and costs and benefits or aid
- Public expenditure reviews
- Government deficit and its implication
- Politics of budgetary process
- Budgetary control approaches
- Participatory budgeting
- Gender budgeting
- Decentralization and budgeting
- Management of public debt
- Public procurement
- Financial Accountability.

## **GOV 611: Project Appraisal and Management**

### **Objectives**

The course deals with the issues and principles involved in the identification, preparation, monitoring, evaluation and management of developments projects.

### **Contents**

- Basic techniques of project planning
- Basic techniques of project analysis and appraisal
- Shadow prices and social cost-benefit analysis
- Management of projects
- Stakeholders analysis
- Impact assessment, including gender and environmental impact assessment
- Participatory rural appraisal and the use of techniques such as logical framework.

## **GOV 612: Public Policy Analysis**

### **Objectives**

The aim of the course is to expose participants to the fundamentals of public policy making, institutions and actors involved in the public policy making, the political economy of public policy making and role of private sector and non-state actors in public policy making.

### **Contents**

- Aims and scope of public policy
- Concepts and approaches of policy making
- Institutions and processes in public policy making
- Politics of public policy making
- Role of public leaders and bureaucracy in public policies
- Development partners and state autonomy in public policy making
- Role of private sector and non-state actors in public policy making
- Implementation, monitoring and evaluation of public policies.

## **GOV 613: E-governance & IT**

### **Objectives**

The course will examine the existing use and future potential of computers and Internet use in various governance activities.

### **Contents**

- E-Governance: concepts and application
- Local Governance and Information Systems
- Information systems to support decentralization initiatives in planning and local governance network
- ICT in Education
- E-commerce
- Cyber law, legal issues
- MIS and Computers in Project management
- Use of information resources available through Internet
- Case studies of ICT application in development from around the world.

## ***Cluster C: Building Partnerships***

### **GOV 620: Public-Private Partnership**

### **Objectives**

To sensitise participants about the importance and scope of the emerging trends in public-private partnership, different models of public-private partnership and train them in the negotiations and regulatory aspects of public-private partnership.

### **Contents**

- Emergence of private sector to provide public services
- Identifying sectors where public-private partnerships can be developed
- Types and models of Partnerships - BOT, BOO, Privatisation and Outsourcing
- Financing of Partnership
- Partnership with local versus foreign companies
- Regulatory Perspectives: Regulating and controlling, Types of Regulation
- Costs, welfare and governance implications.



## **GOV 621: Negotiation and Conflict Management**

### **Objectives**

The aim of the course is to expose public officials to state of the art, concepts and techniques of negotiations and conflict management so that they are able to apply those techniques to real life situations.

### **Contents**

- Concepts of conflict, negotiation and conflict management
- Issues and principles of negotiation and conflict management
- Introduction to Game Theory
- Zero-sum and win-win conflict management
- Strategic thinking and planning in negotiation and conflict management
- Negotiation at different levels
- Tools: Arts and Science of Negotiation
- Norms and values in conflict management.

### **Cluster D: Accountability**

## **GOV630: Ethics**

### **Objectives**

The objective of the course is three-fold: (a) to train students in both universal and local standards, norms and values; (b) reduce ethical standards from high and abstract moral grounds to very essential component of day-to-day professional life, and in the process, (c) posit ethics and the vital missing link of good governance.

### **Contents**

- Ethical values, code of conduct
- Ethics and organization culture and values
- Ethics in economics and operation of market forces
- Identification of major administrative omissions/commissions
- Equity and social justice in situation of deprivation
- Political interference in the bureaucracy – impact on organization culture and social justice
- Underlying factors behind erosion of social norms, values and justice
- Good practices – moral courage and social resistance
- Implementations issues: recruitment, training, discipline, awards, incentives.

## **GOV 631: Corruption**

### **Objectives**

By way of taking a dispassionate and diagnostic approach to corruption, the aim of the course is to help students develop a critical outlook toward corruption.

### **Contents**

- Definition
- Levels and dimensions of corruption
- Diagnosis and indicators
- Cures and counter-measures
- Political administrative corruption in Bangladesh
- Administrative corruption in Bangladesh
- Corruption in business, civil society, international organizations and donor communities
- Incentives, penalty and compensation structure
- Autonomous Anti-corruption Commission – myth and reality
- Best practices and tool kits.

## **Cluster E: Inclusive Citizenship & Innovations**

### **GOV 640: Learning from People: Methods and Innovations**

#### **Objectives**

Introduce students to key concepts, methods and process of political, institutional and social participation for sustainable livelihoods.

#### **Contents**

- Concepts of Listening: Listening to People
- Concepts of participation for sustainable livelihoods
- Participatory learning: the experience of BRAC and other institutions in Bangladesh
- Participatory appraisals
- Institutional form of participation: the role of Development organizations
- Impact of Micro credit in Bangladesh
- Innovations and social entrepreneurship.

### **GOV 641: Gender, Diversity & Governance**

#### **Objectives**

The objective of this course is to:: (a) introduce the facts and theories about gender discrimination, with special reference to the process of economic development, (b) to explain the consequences of gender discrimination for economic development, and (e) to discuss strategies for ending gender discrimination in the development process.

#### **Contents**

- Gender and sex: some basic concepts
- Theories of gender discrimination, feminist perspectives
- Patriarchy and the sub-ordination of women: facts and theories
- Women in Development: alternative perspectives
- Theories of the household: roots of gender discrimination within the household
- Aspects of gender discrimination in developed and developing societies
- Gender discrimination in South Asia, with special reference to Bangladesh
- Social consequences of gender discrimination: on production, education, health, and population
- The role of women in the Bangladesh economy
- Engendering the development process in Bangladesh: achievements and failures
- Women's agency and women's empowerment alternative routes – employment, education, social mobilization
- Women's empowerment through the rights-based approach: the human rights perspective
- Gender budgeting and gender analysis of development projects
- Rights of ethnic and religious minorities.

### **GOV 642: Human Rights & Social Justice**

#### **Objectives**

To familiarise the students with the basic ideas of the human rights discourse and to introduce to them the emerging literature on the implications of adopting a rights-based approach to economic and social development.

#### **Contents**

- The philosophical foundations of the concept of rights
- Different concepts of right: The distinctiveness of human rights
- A brief history of the evolution of human rights
- Human rights instruments and institutions

- The right to development – history and concept
- Rights and capabilities
- Human rights and human development
- Rights and resources: the concept of progressive realization of human rights
- Rights and obligations: accountability of the State and non-State actors
- Claiming rights: participation and empowerment
- The distinctive features of the rights-based approach to development
- Universal human rights versus cultural relativism
- Legal framework: International /national
- Access to justice
- National/international actors in Bangladesh
- Critiques of western ideas of human rights issues from the South

#### ***D. DISSERTATION***

##### **GOV 699: Dissertation**

##### **Objective**

The dissertation carries 9 credits. It must meet rigorous academic standards befitting a Master's degree. From the beginning of this scholastic experience, a student's supervisor will provide necessary guidance how the task to be performed, the relevant materials to read and so on. In this venture, however, the students are completely on their own and must come up with an original piece of work that could help to improve governance in country.

## POSTGRADUATE PROGRAMS IN DISASTER MANAGEMENT (PPDM)

### COURSE DESCRIPTIONS

#### POSTGRADUATE PROGRAMS IN DISASTER MANAGEMENT

##### *PREPARATORY COURSES*

**ENG 091: Foundation Course in English Language** **3 credits**  
Provides an introduction to English vocabulary, language, writing and verbal skills. Contents: Anatomy and construction of sentences, Spelling, Summarizing, Comprehension, Common vocabulary, Elements of good writing, Speaking.

**CSC093: Basic Course in Computing** **1.5 credits**  
Introduces students to the nature, operation, uses and potential of computer in organizations. Learning by practice is emphasized. Contents: Introduction to hardware and software technology, Word processing, Database management, Spreadsheets, Electronic communication.

##### *FOUNDATION COURSES*

**DMG 501: Introduction to Hazards and Disasters** **2 credits**  
Provides a basic overview of the various types of natural, human-induced and industrial hazards and their potential for causing disasters. The purpose is to familiarize students with the basic concepts of hazards, disasters and vulnerability. Contents: Natural hazards, Human-induced hazards, Industrial hazards, Distinction between hazard and disaster, Hazard vulnerability.

**DMG 502: Fundamentals of Disaster Management** **2 credits**  
Provides understanding of the general principles of management and their specific applications in the field of disaster management. The objective is to identify and examine the essential and fundamental elements of disaster preparedness, response and recovery within an inclusive management policy framework. Contents: General principles of management, Conceptual framework of disaster management, Basic concepts of preparedness, rescue, relief, rehabilitation and reconstruction, Inclusive approach to disaster management.

**DMG 503: Organizational and Policy Context of Disaster Management** **2 credits**  
Reviews the roles of different actors such as the government, non-governmental organizations (NGOs) and international funding agencies involved in disaster management. The purpose is to provide understanding of the organizational framework for defining policy and practice in this field. Contents: Role of the government, Role of NGOs, Role of international funding agencies, Cross-sectoral linkages, Policy formulation, Program and project implementation.

**DMG 504: Research and Analytical Methods** **2 credits**  
Introduces the basic elements, processes and techniques of research utilized for description and analysis with special reference to disaster management. The aim is to develop research skills that can be applied in subsequent practice, independent study projects and dissertation writing. Contents: Research typologies, Basic statistical and sampling techniques, Survey techniques, Qualitative and quantitative research, Data analysis, PRA methods.

##### *CORE COURSES*

**DMG 601: Disaster Response and Recovery Strategies** **3 credits**  
Provides knowledge on immediate and long-term aspects of management of the post-impact phase of a disaster. The aim is to generate understanding of specific actions that should be taken

during the post-impact stage of a disaster to facilitate its effective management. Contents: Post-impact phase, Immediate rescue and relief needs, Long-term recovery, rehabilitation and reconstruction, Post-disaster trauma management.

**DMG 602: Disaster Preparedness and Vulnerability Reduction** **3 credits**

Gives an overview of the range of strategies for preparedness in the pre-impact stage in disaster-prone areas and correspondingly reducing vulnerability of communities. The purpose is to instill awareness of the importance of disaster preparedness for damage prevention and vulnerability reduction, and associated risk reduction strategies such as insurance. Contents: Disaster preparedness planning, Specifications of preparedness requirements, Risk management strategies, Preventive and/or mitigating actions, Risk insurance.

**DMG 603: Assessment of Risk, Vulnerability and Capacity** **3 credits**

Provides knowledge on methods of risk identification and hazard analysis and the development of disaster management capacity of a community or region. The objective is to develop skills to assess the risk associated with a variety of scenarios and resultant vulnerability. Contents: Risk identification, Risk perception, Hazard analysis and mapping, Vulnerability assessment.

**DMG 604: Independent Study in Disaster Management I** **3 credits**

This course is offered in Semester 01. After mid-term examinations, each student will present a proposal for an independent study project in a subject area of disaster management and approved by relevant faculty. Students will utilize their knowledge gained from the various course deliberations at this program, supplemented by previous experience (if any) and future career and academic interests of the student. The study will be carried out independently outside class and supported by personal tutorials with faculty. Assessment will be based on an end of semester seminar presentation and written paper.

**DMG 605: Independent Study in Disaster Management II** **3 credits**

This course is offered in Semester 02. After mid-term examinations, each student will present a proposal for an independent study project in a subject area of disaster management and approved by relevant faculty. Students will utilize their knowledge gained from the various course deliberations at this program, supplemented by previous experience (if any) and future career and academic interests of the student. The study will be carried out independently outside class and supported by personal tutorials with faculty. Assessment will be based on an end of semester seminar presentation and written paper. This study should build upon the previous independent study undertaken (DMG 604) at the certificate level and should therefore be more in-depth and reflect increased complexity of knowledge.

**DMG 606: Dissertation Seminars** **3 credits**

Offered only at the master's level, consisting of a series of seminars on dissertation writing where students will discuss ideas, problems and research directions relating to their dissertation, supported by faculty lectures. The purpose is to supplement dissertation writing skills and techniques. Contents: Research methods, Literature review, Academic writing, Understanding and presenting arguments.

***ELECTIVE COURSES***

**DMG 607: Riverine Disaster Management** **3 credits**

Provides detailed knowledge on the effects of riverine disasters such as floods and riverbank erosion, and organizational and local efforts to manage them, with emphasis on the Bangladeshi context. The purpose is to develop knowledge and understanding of these widespread and serious hazards in Bangladesh, with a view towards developing expertise in their management. Contents: Causes and effects of riverine disasters, Distinction between floods, flooding and riverbank erosion, Indigenous coping mechanisms, Organizational initiatives, Structural and non-structural vulnerability reduction methods.

**DMG 608: Cyclone and Tornado Preparedness and Rehabilitation****3 credits**

Provides detailed knowledge on the effects and management aspects of cyclones and tornadoes including preparedness measures such as forecasting, warning and shelter provision and post-cyclone/tornado organizational relief and rehabilitation. The purpose is to develop knowledge and understanding of this frequent and serious hazard in Bangladesh, with a view towards developing expertise in its management. Contents: Causes and effects of cyclones and tornadoes, Preparedness, forecasting and warning mechanisms, Post-cyclone/tornado rehabilitation, Structural and non-structural vulnerability reduction methods.

**DMG 609: Earthquake Vulnerability Reduction****3 credits**

Provides knowledge on the causes and effects of earthquakes and understanding of strategies for reducing potential damage and loss of life due to this destructive hazard. The objective is to extend skills and know-how to be able to contribute to the development of organized approaches for earthquake vulnerability reduction. Contents: Vulnerability and risk assessment, Preparedness and awareness building, Rehabilitation issues, Structural and non-structural vulnerability reduction methods.

**DMG 610: Community Based Approaches to Disaster Management****3 credits**

Provides an overview of approaches for facilitating communities to develop disaster preparedness and recovery plans. The objective is to develop appreciation of the importance of the role of the community in managing disasters that it faces and the function of organizations in facilitating this management. Contents: Participatory methods, Community mobilization, facilitating self-help initiatives, Sustaining long-term community based disaster management.

**DMG 611: GIS and Remote Sensing Techniques in Disaster Management****3 credits**

Imparts knowledge on the basic concepts of Geographical Information Systems (GIS) and Remote Sensing Techniques and their potential for application in disaster management. Objective is to instill understanding of the basic GIS models and operations, and the potential and usefulness of GIS and remote sensing to support decision-making about the spatial dimension of disaster management. Contents: Constituents of vector and raster models, Data analysis, spatial information assembling for disaster management, Utilization for decision-making, Remote Sensing Techniques.

**DMG 612: Building Design and Construction in Disaster-Prone Areas****3 credits**

Provides knowledge on methods of building safer buildings in disaster-prone areas, construction of disaster shelters and provision of post-disaster emergency housing. The purpose is to develop awareness of the key aspects of building design and construction that can contribute to creation of hazard-resistant habitats before, during and after disasters. Contents: Building-for-safety, Retrofitting, Disaster shelters, Emergency housing, Building codes.

**DMG 613: Urbanization and Disasters****3 credits**

Provides knowledge on rapid urbanization in developing countries and the management of urban disasters. The aim is to create understanding of the link between uncontrolled urban growth and its potential for resulting in disasters and strategies to manage such disasters. Contents: Rapid urbanization, urban bias in development, Planning regulations, Urban services and infrastructure, Urban disaster management.

**DMG 614: Risk Communication, Training and Public Awareness****3 credits**

Provides an overview of the different methods for communicating disaster risk and preparedness measures and building public awareness, of which training programs is an essential part. The objective is to enable students to gain the necessary knowledge and skills to develop their own disaster risk and vulnerability reduction training and public awareness programs and/or to contribute to such programs. Contents: Communication and dissemination techniques, Public awareness campaigns, Training programs, Role of media, Internet and telecommunications.

**DMG 615: Gender Issues in Disaster Management****3 credits**

Provides knowledge and understanding about the importance of addressing gender issues and incorporating appropriate gender-sensitive measures in disaster management programs. The objective is to sensitize students about the need to approach disaster risk reduction from a gender-disaggregated perspective, and to provide them with tools to address the issue in disaster response and preparedness activities. Contents: Women's status, Gender-based vulnerability and capacity, Gender-oriented special needs in disaster situations, Development of gender-sensitive disaster management programs.

**DMG 616: Disaster Risk Reduction and Development Planning****3 credits**

Provides knowledge to appreciate the need for integrating disaster risk reduction aspects in development policy, planning and implementation. The purpose is to equip students with the skills to identify the linkages between disasters and development, and understand the formulation and application of appropriate development planning policies integrating disaster risk reduction. Methods for advocacy of this integrated approach form an important constituent. Contents: Linkages between disasters and development, Impact of disasters on development, Disaster-Development continuum, Cause-Effect relationship between development planning and disasters.

***COMPULSORY FIELD STUDIES*****DMG 617: Field Study I and DMG 618: Field Study II****2 credits each**

These courses are compulsory in Semesters 01 and 02. Field visits are made to disaster management projects and case studies of various organizations to provide understanding of the actual challenges and constraints to disaster management in real conditions on the ground. Visits to sites supplemented by presentations by field-based personnel and experts. The students evaluate the projects visited and their findings and comments are presented in reports and class seminars.

