সিন্ডিকেট সভার (৩০-০৪-২০২৩) কার্যবিবরণীর অংশ
সংশোধিত সিলেবাস, নীতিমালা আর্থিক প্রস্তবনা

জরুরি

৪৪। অবহিত ও অনুমোদিত : একাডেমিক কাউন্সিলের (১৩-০৪-২০২৩) সুপারিশ অনুযায়ী অনিয়মিত একাডেমিক কর্মসূচি পরিচালনার বিধিমালা" অনুসারে কম্পিউটার বিজ্ঞান ও প্রকৌশল বিভাগের অধীনে Professional Masters in Information and Cyber Security (PMICS) প্রোগ্রমের বিধিমালা ও কোর্স কারিকুলাম পূর্বের অনুমোদিত {(CSE Professional Masters Program (Evening)} নীতিমালা আর্থিক প্রস্তবনার সাথে সমন্বয় করে পরিশিষ্ট 'ঙ'-এ বর্ণিত সংশোধিত সিলেবাস, নীতিমালা আর্থিক প্রস্তবনার মাননীয় উপাচার্য (১৩-০৪-২০২৩) অনুমোদন করেছেন।

স্মারক নং রেজিং/প্রশা-৫/ ২১২৫-২৮   তারিখ ঃ ১৭/৫/২০২৩

অবগতি ও প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য নিম্নোক্তগণের নিকট অনুলিপি প্রেরিত হইল ঃ-
(১) চেয়ারম্যান, কম্পিউটার বিজ্ঞান ও প্রকৌশল বিভাগ, ঢা: বি:।
(২) ডেপুটি রেজিস্ট্রার, প্রো-উপাচার্য (শিক্ষা)-এর অফিস, ঢা: বি:।
(৩) পরীক্ষা নিয়ন্ত্রক, ঢা: ঢা: বি:।
(৫) ডেপুটি রেজিস্ট্রার (শিক্ষা-২), ঢা: বি:।
(৬) ডেপুটি রেজিস্ট্রার (শিক্ষা-৩), ঢা: বি:। **নোটসহ পাঠানো হইল**
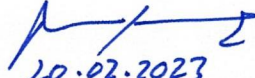
ডেপুটি রেজিস্ট্রার (প্রশাসন-৫)
ঢাকা বিশ্ববিদ্যালয়।

17 MAY 2023

Professional Masters in

Information and Cyber Security

(PMICS)

Detailed Syllabus of Courses

Academic and Administrative Rules

Guideline for Financial Activities

Department of Computer Science and Engineering

University of Dhaka

Dhaka – 1000

20.02.2023

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

The Detailed Syllabus of the

Professional Masters in Information and Cyber Security (PMICS) Program

Courses

Course Code	Course Title	Credits
CSE 801	Communication Protocols and Internet Architecture	3
CSE 802	Information Security Fundamentals	3
CSE 803	Software Security	3
CSE 804	Network and Internet Security	3
CSE 805	Digital Forensic	3
CSE 806	Applied Cryptography	3
CSE 807	Privacy in the Digital Age	3
CSE 808	Information Infrastructure Protection	3
CSE 809	Cybersecurity Law and Policies	3
CSE 810	Cloud Security	3
CSE 811	Project on Cybersecurity	6

Detailed Course Syllabus

CSE 801 Communication Protocols and Internet Architecture

Design, analysis, and implementation of networks and protocols: TCP/IP, Network Address Translation (NAT), Dynamic Host Configuration Protocol (DHCP), Internet Protocol Security (IPsec), Internet Control Message Protocol (ICMP), Simple Mail Transfer Protocol (SMTP), Domain Name Service (DNS), IPv6, Concepts of routing (Bellman-Ford and Dijkstra algorithms), Routing Information Protocol (RIP), Open Shortest Path First (OSPF), Interior Gateway Routing Protocol (IGRP), Enhance Gateway Routing Protocol (EIGRP), and Border Gateway Protocol (BGP) and the IEEE 802 LAN protocol suite. **Application layer protocols**: WWW/HTTP, e-mail/SMTP, multimedia protocols for voice and video. In each case, the protocol's functions and the underlying reference model are discussed. **Design and Analysis of Networks:** LAN architecture and design, internetworking using switches and routers, and the design and analysis of both private networks and the Internet. Network quality of service, voice and video on the Internet, policy-based networks, and broadband/gigabit networks.

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000, Bangladesh

CSE 802 Information Security Fundamentals

Key security concepts. Various types of threats. **Policy vs. Mechanism**: Security policy life cycle. Vulnerabilities Controls Organizational Context and Security policy. Human factors in security policy: Basic risk analysis structure, Implementation of security plan. Integration of physical and logical security. Internet and Email use policies. Computer security incident response team (CSIRT). Security auditing. **Basic Applied Cryptography:** Historical ciphers, modern ciphers like AES and RSA, symmetric cryptography, cryptanalysis, stream ciphers and RC4, cipher block modes of operation. key distribution, differential cryptanalysis Public key cryptography: Diffie-Hellman key exchange, RSA algorithm, elliptic-curve cryptography, security services, secure hash functions, SHA security hash functions. **Key and Identity Management including certificate management:** Key exchange and random numbers, key/identity management, Kerberos, PKI, digital signature, hierarchical x.509, web of trust. **Authentication:** Password based authentication, Token based authentication, Biometric authentication, Remote user authentication, security issues for user authentication. **Access Control:**

Access control principles, access control policies, discretionary access control, role based access control, role based access control reference model, Access control matrix, Unix access control, Windows access control, capabilities. **Internet Security:** Secure Sockets Layer (SSL), Transport Layer Security (TLS), HTTPS, IPv4 and IPv6 security, keberos, X.509, wireless security. **Database Security:** Database Access Control, inference, database encryption, cloud security. **Denial-of-Service attacks**: Flooding attacks, DDOS attacks, reflector and amplifier attacks, defense against DOS. **Trusted Operating System:** The Bell-LaPadula model for computer security, formal models for computer security, trusted systems, assurance and Evaluation. **Software security and Design Principles:** Software security issues, handling program input, writing safe program code, interacting with operating system. System Evaluation: Assurance and Evaluation. **Malicious Software:** Types of Malware, infected content, vulnerability exploits, social engineering, system corruption, bots, zombie, key loggers, phasing, spyware, backdoors, counter measures. **Forensics Physical Security:** Physical security prevention and mitigation measures, recovery from physical security breaches, integration of physical and logical security. **Legal and Ethical Issues in Computer Security:** Cybercrime, intellectual property, privacy, ethical issues

20.02.2025

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

CSE 803 Software Security

Overview of software security, types of vulnerabilities, Common Vulnerabilities and Exposure (CVE). **Web security**: Basic three tire model of web architecture, various attacks on web, SQL injection attacks, various types of SQL injection attacks, protection against SQL injection attacks, prepared statements, sanitizing, single origin principle, Cross site scripting attacks/protections, cross site request forgery attacks/protection, case study. **Penetration Testing:** Introduction to common tools used for pen-testing. **Malware analysis**: How malware run, insider attack, backdoors, analysis of brain virus and morris worm, rootkits, botnets, code injection attacks, worm propagation, malware counter measures. Reversing Malware: Introduction to IDA-Pro, ollydbg and REMnux, identifying key x86 assembly logic structure using disassembler, common malware characteristics at windows api level (DLL injection, function hooking etc), recognizing packed malware, manual unpacking of malware using OllyDbg, interacting with malicious websites to examine their nature. **Secure software development**: Secure software development lifecycle, threat modeling, Overview of software analysis methods (formal verification, static analysis, dynamic analysis, model checking). **Secure programming techniques:** input sanitization, canonical representation, internationalization, xss prevention, Content security policy, access control, CSRF prevention, clickjacking prevention, least privilege, thread safe, error handling, handling secrets, SSL library usage, and password storage. Overview of secure software development lifecycle, threat modeling, overview of software analysis methods (formal verification, static analysis, dynamic analysis, model checking), Static analysis tools (Fortify SCA). Formal methods for Security, **Buffer and Heap overflow attacks and prevention:** OS security: OS architecture overview, gdb tutorial, c stack frame, conversion of c code to assembly, stack push and pop while function calls, buffer overflow, shell injections, shellcode, call instruction tricks for shell code, integer over flow, safe/unsafe functions, buffer and heap overflow protections: stack canaries, no execution, address space layout randomization (ASLR), return to libc function chaining, return oriented programming.

CSE 804 Network and Internet Security

Internet architecture, security flaws on the Internet, **Attacks on networks**: DDOS attacks, reflection attacks, amplification attacks, wireless security, WEP cracking, DNS hijacking, routing attacks, case study: NTP DDOS attack, spamhaus DDOS attack. **Network security at different layers of the OSI and TCP/IP models**: firewalls, security protocols (in particular, IPsec, SSL, and Kerberos),

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka, 1000, Bangladesh

Denial of Service (DoS) attacks/ detection/prevention, viruses and worms, DNS, email & Voice Over IP (VoIP) security, wireless infrastructure security. **Network Intrusion Detection and Analysis**: NIDS/NIPS functionality, Modes and types of NIDS, NIDS/NIPS evidence acquisition, snort rules and alerts, Case study. **Formal methods for modeling and analyzing authorization and access control systems**. **Designing Enterprise systems for Access Control, Authentication and Auditing (AAA)**: Designing networks on selected protocols to support business operations while maintaining identified levels of network security. Supporting secondary network connectivity (wireless, VPNs, BYOD devices, partner networks, cross-domain and other connectivity types). Designing networks to support Resiliency Management, Business Continuity, Disaster Recovery and other principles to avoid network failures that negatively impact the organization's ability to deliver on its core mission. Methods to prevent, detect and respond to security breaches, including the role of Incident Response Teams.

CSE 805 Digital Forensic

Key digital forensics concepts: Computer forensics, network forensics, mobile device forensics, malware forensics, memory forensics, scientific method of digital forensics, digital evidences, circumstantial vs digital evidence, Evidence integrity and cryptographic hash functions, chain of custody, using forensic copies, reporting and testimony, case study of real world crime investigation involving digital forensics. **Legal system in Bangladesh:** Legal system in Bangladesh, criminal vs civil justice system, court room scenario, Lawyers vs prosecutors, defense attorneys, law enforcement, warrant requirement, e-discovery, Judges and decision makers, laws related to cyber crimes and digital forensics, accepted digital evidences in Bangladesh legal system, finger print analysis, privacy law and digital forensics. **Computer Forensics:** Computer forensics investigation process, evidence acquisition and preservation, file systems, forensics duplication/imaging technique, write blockers, device configuration overlay, SSD forensics. **Case Study:** Windows Forensics - NTFS basics, File Record attributes, NTFS analysis, file system met data files, file carving, carving with fragmented clusters, windows registry, registry keys and values, traces of user log on/off, connection of usb devices, determining installation time, recently played files in windows media player, last 25 urls visited, timestamp changes, Event Logs, Recycle bin. **Windows Application Analysis:** Application Metadata, MS office metadata, multi-media file metadata, web browser forensics, email forensics, pre-fetch files, Diffie-Hellman key exchange, RSA algorithm, elliptic-curve cryptography, security services, secure hash functions, SHA security hash functions. **Psychological Aspects of Digital Forensics:** Forensics psychology, cyber crime overview, roles of forensics psychologists, theories of crime, psychological profiling hackers and malware distributors, Rogers's hacker circumplex, case studies: Kevin Mitnich, Edward Snowden, Gary McKinnon,

Prof. Dr. Saifuddin M. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000, Bangladesh

Network Forensics: Network forensics concepts, investigation methodology, sources of network-based evidence, Internetworking fundamentals, OSI model, TCP/IP model, three-way handshake, TCP and IP/IPv6 header, ARP, ICMP, DNS, HTTP, DHCP, SMTP, Evidence acquisition, sniffing packets from switches and wireless networks, libpcap, tcpdump, active acquisition, strategies for collection evidence Password based authentication, Token based authentication, Biometric authentication, Remote user authentication, security issues for user authentication, packet analysis, protocol analysis, flow analysis, statistical flow analysis, flow record collection and aggregation protocol, tools: silk, argus, nfdump, analysis technique and tools, identifying port scanning through statistical analysis. **Fraud investigations:** Fraud examiner vs forensic accountant, fraud examination methodology, Benford's law, Secure Sockets Layer (SSL), Transport Layer Security (TLS), HTTPS, IPv4 and IPv6 security, Kerberos, X.509, wireless security. **Mobile Forensics:** Mobile network basics, mobile OS, NAND flash memory, YAFFS2, types of evidence obtainable from mobile devices, Proper handling of evidentiary mobile devices, Android forensics, ios forensics.

CSE 806 Applied Cryptography

Mathematical Background: Information theory, Entropy, mutual information, randomized algorithms, number theory, integer arithmetic, rings, fields, groups, cyclic groups, subgroups, finite fields, the Euclidean algorithm for polynomials, extended Euclidean algorithm, integer factorization problem, elliptic curve factoring, Symmetric ciphers and applications: symmetric cryptography and correctness property, analysis of one time pad, properties of perfect cipher, modern symmetric ciphers, generating random keys, modes of operations for symmetric ciphers, cryptographic hash functions, strong passwords, dictionary attacks, hash chain. Key distribution: Discrete logarithm problem and proving Diffie-Hellman key exchange, attacks against discrete logarithmic problem, implementing Diffie-Hellman, Finding large primes, primality test Fermat's Little Theorem, Rabin-Miller test. Key establishment with symmetric-keys, with a distribution center, Kerberos, problems with symmetric key distribution, Asymmetric Cryptosystems and Applications: Correctness of RSA, Euler's theorem, Proving Euler's theorem, invisibility of RSA, security property of RSA, best known algorithm for factoring, public-key cryptography standard, insecurity of RSA in practice, using RSA to sign a document, problem with RSA. Cryptographic Protocols: SSH, TLS, TLS information leaks, certificate, signature validation. Elliptic Curve: How to compute with elliptic curves, building a discrete logarithm problem with elliptive curves, group operations on elliptic curve, Diffie-Hellman key exchange with Elliptic curves, Elliptic curve digital signature algorithm and its computational aspect. **Using cryptography:** Traffic analysis, onion routing, voting, digital

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

cash, RSA blind signature, blind signature protocol, bit-coin, encrypted circuits.

CSE 807 Privacy in the Digital Age

Privacy concepts and policies: technological aspects of privacy - privacy concerns raised by new IT such as the Internet, wireless communications, and computer matching; tracking techniques and data mining; privacy enhancing technologies; economic aspects - economic models of the market for privacy, financial risks caused by privacy violations, the value of customer information; legal aspects - laissez-faire versus regulated approaches, managerial implications - the emerging role of Chief Privacy Officers, compulsory directives, and self-regulative efforts; and policy aspects trade-offs between individual privacy rights and societal needs. **Privacy enhancing mechanisms**: identity, anonymity, and confidentiality; private data analysis and database sanitization; privacy-preserving data mining techniques including k-anonymity, randomization, and secure function evaluation; privacy issues in social networks, RFID, and healthcare applications.

CSE 808 Information Infrastructure Protection

Survey of Network Infrastructure Attacks, Overview of Information and Network Security Technologies. Overview of Critical Infrastructural Components and Attacks (e.g., Smart Grid, medical systems, smart homes and others), Anomaly detection and attack graphs. **Theoretical foundation of Vulnerability and Configuration Analysis**: logic-based and model-based approaches. Security Configuration Analysis, Vulnerability Analysis, Threat and Impact Analysis; **Business Information Continuity Plan:** vulnerabilities and Controls, **Risk Assessment** : threats, vulnerabilities and mis-configuration analysis. Qualitative and Quantitative Risk Assessment. **Risk Management**: standards (e.g., OCTAVE) and best practices. Risk assessment and Management case study. **Cyber Incident Analysis and Response:** Incident Preparation, Incident Detection and Analysis, Containment, Eradication, and Recovery, Proactive and Post-Incident Cyber Services, computer emergency response teams.

20·02·2023

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh
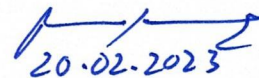
CSE 809 Cybersecurity Law and Policies

Introduction to ethical theories and principles, Ethics and critical reasoning in computer science, Privacy, personal information, and trust, Software piracy, Music and video piracy, Misuse of software, Viruses and hacking, Computer communication and freedom of expression, Security and encryption, Content control and censorship, Computer crime, Ethical hacking, Professional issues and decision making, Intellectual property and licensing, ACM Code of Ethics and Professional Conduct Software Engineering, Code of Ethics and Professional Practice as recommended by the ACM/IEEE-CS Joint Task Force. Law: National ICT Act, National ICT Policy, National e-services rules, National Information security policy guideline, National Copyright, patent, trademark related laws, Laws on document & records retention. UN conventions/Laws related to internet or cyber security, Rights to know, Freedom of Information. cybersecurity from a global perspective: cyberterrorism, cybercrime, and cyberwarfare; the international legal environment; nation- and region-specific norms regarding privacy and intellectual property; international standard setting; effects on trade (including offshore outsourcing); and opportunities for international cooperation

CSE 810 Cloud Security

Introduction to Cloud Computing: Definition and applications including benefits, challenges, and risks, Enabling Technologies and System Models for Cloud Computing, **Modern virtualization technologies** coupled with on-demand IT infrastructures have been widely adopted by industry to save capital and operating expenses. But off-premise on-demand infrastructures give rise to new security concerns. **cloud security**: known risks and vulnerabilities and sound architectural design for secure computing. **Management, governance, audit, legal issues, and meeting regulatory compliance for cloud computing.** Deploying critical security mechanisms related to secure isolation, application security, data protection, access control, privacy, key management, provisioning, identity and authorization management, high-availability, management, and compliance in a cloud-enabled environment. **Understand the concepts and guiding principles** for designing and implementing appropriate safeguards and countermeasures for Cloud based IT services; Approaches to designing cloud services that meets essential Cloud infrastructure characteristics – on-demand computing, shared resources, elasticity and measuring usage. **Design security architectures** that assures secure isolation of physical and logical infrastructures including compute, network and storage, comprehensive data protection at all layers, end-to-end identity and access management, monitoring and auditing processes and compliance with industry and regulatory mandates. **Understand the industry security standards**, regulatory mandates, audit policies and compliance requirements for Cloud based infrastructures.

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

CSE 811 Project on Cybersecurity

A study of and an exercise in developing, leading, and implementing effective enterprise- and national-level cybersecurity programs. Focus is on establishing programs that combine technological, policy, training, auditing, personnel, and physical elements. Challenges within specific industries (such as health, banking, finance, and manufacturing) are discussed. Topics include enterprise architecture, risk management, vulnerability assessment, threat analysis, crisis management, security architecture, security models, security policy development and implementation, security compliance, information privacy, identity management, incident response, disaster recovery, and business continuity planning. A project reflecting integration and application of learning of cybersecurity is included.

20.02.2025

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

Academic and Administrative Rules

Professional Masters in
Information and Cyber Security

Introduction

The IT industry of Bangladesh is growing very rapidly. Development of ICT plays an important role in the Government's vision 2041 for "Smart Bangladesh". To materialize government's vision of Smart Bangladesh, we need a vast pool of highly skilled manpower in IT sector. At the wake of the recent catastrophe in banking sector (ATM hacking, proliferation of Central Reserve), the nation was caught off-guard with its lack of domestic expertise in the field of information and cyber security. In today's world, any country and hence her organizations must be prepared to defend themselves against threats in cyberspace. Department of Computer Science and Engineering envisions that it must respond to this national crisis by helping the nation with its resources in building the required skilled manpower in information and cyber security. Hence, its Academic Committee has decided to offer the Professional Masters programs in Information and Cyber Security. This document summarizes the rules and regulations of the program in accordance with the university's newly adopted rules for irregular academic program grouped under the following heads:

I.	Title of the Program	IX.	Degree Requirements
II.	Admission Session	X.	Retaking a Course
III.	Admission Requirements	XI.	Withdrawal
IV.	Seat Capacity	XII.	Class Time
V.	Admission Procedure	XIII.	Lecture Method
VI.	Duration of the Program	XIV.	Administration
VII.	Examination and Evaluation	XV.	Instructors
VIII.	Grading System		

I. Title of the Program

This program will be known as "Professional Masters in Information and Cyber Security (PMICS)".

II. Admission Session

There will be two sessions in a year namely Jan-June and July -Dec Session. Students will be admitted in these two sessions.

III. Admission Requirements

20-02-2023
Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000, Bangladesh

Students seeking admission into the PMICS program must have an undergraduate degree in the field of Computer Science, Computer Engineering, Electrical and Electronic Engineering, Electrical and Communication Engineering or any IT/ICT related subjects. Third division in any public examination will not be allowed. If applicable mininum CGPA requirement will be 2.5 or equivalent. Candidates having job experience will be given preference.

IV. **Seat Capacity**

Maximum seat capacity is 40 for the program. The academic committee of the department will decide on the number of students (not exceeding 40) who will be admitted in a particular semester depending on the available resources.

V. **Admission Procedure**

Students will be admitted on merit through a written entrance examination and pass mark will be 40%. Student having bachelor/master degree from abroad must have to take equivalence certificate from the equivalence committee of the University of Dhaka. Students shall have to be attached to a hall of the university and get the student identity card from the attached hall. Students of irregular academic program cannot the residential student of a hall and will not be allowed for any privilege of hall.

VI. **Duration of the Program**

Duration of the program is one year and six month (three semesters). Students are required to complete the degree program within 5 academic years (10 semesters).

VII. **Academic activities**

Student admission, classroom teaching, examination and evaluation, tabulation, publication of result and certificate awarding will be as per this rules described in this document and university's central rule will be applicable for any case that this rules and regulation do not cover.

VIII. **Examination and Evaluation**

Course teachers will be solely responsible for mid-term, class participation and quiz marks. Final examination will be conducted by the examination committee as per university rules. Course evaluation will follow the following guideline.

| 1. | Mid Term (two) | 30% |
| 2. | Class participation | 5% |

20.2.23

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000, Bangladesh

3.	Quiz/term paper/Case presentation	15%
4.	Final Examination	50%

IX. Grading System

For grading the students, the following Uniform Grading System will be followed as explained below:

Numerical Scores	Letter Grade	Grade Point
80% and above	A+	4.00
75%– less than 80%	A	3.75
70% - less than 70%	A-	3.50
65% - less than 70%	B+	3.25
60% - less than 65%	B	3.00
55% - less than 60%	B-	2.75
50% - less than 55%	C+	2.50
50% - less than 55%	C	2.25
45% - less than 50%	D	2.00
less than 40%	F	0.0
	I	Incomplete
	W	Withdrawn

X. Withdrawal

Withdrawal from the program for a definite period of time may be considered if permission is sought from the Program conduction committee keeping his/her earlier semester grades intact. However, a student must complete the degree within 5 years of his admission into the program. Otherwise, he/she will not be eligible to obtain any diploma.

XI. Retaking a Course

Students with a grade of 'I', 'W' or 'F' in any course may retake the course on payment of requisite fees offered in the subsequent available semester. Student has to pay the full tuition fee for the course unless he/she receives an 'I' in the course. A student earning a grade of 'A-' or worse may also retake a course by paying the requisite fees to improve his/her grade in that course. However, in that case, the transcript will show credit, grade and R (Retake) against the retaken course. A student will be allowed to retake a course only once. In order to retake a course, a student must apply to the program conduction committee at least 4 weeks before the commencement of the semester. All retake application must be approved by the program conduction committee. Any approval for retaking a course will result in automatic

20-02-2025
Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

cancellation of his/her earlier grade.

XII.   Degree Requirements

The program will be consisting of 36 credits of which 30 credits will be course work and 6 credits will be project work. Students completing the required 36 credits within 10 semesters of their admission and with a minimum CGPA of 2.50 will be eligible for the degree. A student's admission will be automatically cancelled, if he/she cannot complete the required 36 credits within 10 semesters of his/her admission with a minimum CGPA of 2.50. The University of Dhaka will award degrees on the recommendation of the Academic Committee of the department.

XIII.   Class Time

Classes will start at 6:00 PM on weekdays. In weekend lecture may be arranged as suitable.
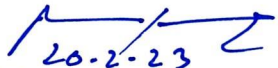
XIV.   Lecture Method

Classes will be mostly onsite but blended system (online and onsite) may be adopted if necessary. Online class will be no more than 30% of the total classes. In all cases examination will be held on site in person. In extreme situation online examination might be allowed.

XV.   Administration

There will be a three member Program conduction committee including chairman as a member formed by the academic committee of the department. Tenure of a program conduction committee will be two years after which all members of the committee except the Chairman of the department must be changed. The tenure of chairman will be limited to the duration of chairmanship. The academic committee of the department will form program conduction committee.

Once served in a committee in any capacity, a faculty member cannot serve as a member or Director of the committee for the next two years. The Academic Committee of the department will be responsible for (a) Admission of students (b) Course Allocation (c) Ensuring logistic support and (d) Formation of examination committee. A teacher will not be allowed to take courses in the irregular academic program more than his/her number of courses in the regular program. Examination committee will work as per university general guidelines and be responsible for conduction of examination, provisional publication of

20.2.23

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

results and compilation and submission of results to the controller of examination for publication. The program conduction committee will generally perform the following functions:

a) Overall coordination of the program
b) Preparation of budgets and maintaining proper accounts
c) Making arrangement for the audit of the accounts
d) Taking decisions relating to pre-requisite courses and course re-takes
e) Assignment of duties and responsibilities to each member of the committee
f) Selection of courses to be offered in each semester
g) Checking course outlines and progress of the courses
h) Conduct teacher's evaluation
i) Submission of periodical reports to the Academic Committee of the department
j) Any other tasks assigned by the Academic Committee of the department

XVI. **Instructors**

Both faculty members of reputed public/private universities and experienced field experts from industry may be appointed as instructors but no more than 30% instructors will be from outside of the university. In case of university teachers, he/she must meet At least ONE of the following criteria

a. Have a PhD degree
b. Be a Professor / Associate Professor

The C&D committee of the department might appoint teachers from other departments of Dhaka University or any other reputed public/private university who satisfies the above criteria. The C&D committee might appoint experts from IT industry as instructors. However, he/she must satisfy BOTH of the following criteria

a. Have a Masters / PhD degree
b. Have 10+ years of experience in working in the field relevant to the subject for which he/she is being considered as a potential instructor

XVII. **Reserved Regulation:**

Rules and regulations not mentioned specifically or not clear in this document will follow the rules and regulations of the irregular academic program of the university.

20.2.23

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

Guideline for Financial Activities

Professional Masters in
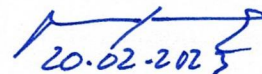## Information and Cyber Security
(PMICS)

This guideline will be applicable for Professional Masters in Information and Cyber Security approved programs by the syndicate (date: November 30, 2017).

The aim of this program is to develop skilled workforce to secure the cyber space of the country. The department would offer this Professional Masters program only for professionals having a job experience of at least one year. The student will bear all costs of operation for his/her study under the programs. Neither the University of Dhaka nor the department will bear any part of the academic and administrative costs. All financial activities of the students will be maintained through the university account as per the irregular program guideline of the university and the department will collect its fraction from the university as prescribed in the guideline to mainly operate the program.

Detailed Financial Scheme

Part A: Fees and Charges to be paid by a student

The department will charge the following fees and charges for different academic and administrative costs under this professional master program. The students of the program will pay fees and charges in three groups: (A1) One-time fees and charges, (A2) Regular (for every semester) fees and charges and (A3) Irregular fees and charges where applicable. In all cases, the Department of Computer Science and Engineering will follow the university guideline for irregular professional masters programs. All students will deposit their fees and charges to the university account and the department will collect the departmental part comprised of research, development and program operation costs from the university account and run the program smoothly as per the guideline.

20.02.2025

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh

(A1) One-time fees and charges

A student will pay the admission fee once after s/he gets admission in this of the professional program. However, in some special cases, s/he may have to pay other charges or fines. Table-A1 below shows such one-time/irregular fees and charges

Table-A1: One-time/irregular Fees and Charges

S/N	Fee Head	Amount
1.	Admission Fee	15000.00
2.	Registration Fee	5000.00
	Total	20000.00

(A2) Regular (for every semester) fees and charges

Students of a professional master's program will pay the following fees as the cost of academic and administrative costs.

Table-A2: Per Semester Fees

S/N	Fee Head	Unit Amount	Units	Total
1.	Semester Enrollment for each semester	6000.00	3	18000.00
2.	Tuition Fee/Credit	10000.00	30	300000.00
3.	Transcript (1 Copy) fee for each semester	500.00	3	1500.00
4.	Laboratory Fee for each semester	10000.00	3	30000.00
5.	Library Fee for each semester	500.00	3	1500.00
6.	Student Activity Fee for each semester	1000.00	3	3000.00
	Total			354000.00

(A3) Irregular fees and charges where applicable

Students of this professional master program will pay the following fees and charges in case they fail to take part/complete activities on time and require the respective services.

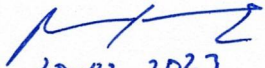| S/N	Fee Head	Amount
1.	Make-up mid-term examination	3000.00
2.	Make-up final examination	5000.00
3.	Late enrollment fees for a course	2000.00
4.	Fine for semester break	3000.00

It is calculated that the minimum total cost for this program for a student is 3,74,000.00 (Three lacs Seventy Four thousand Five hundred). This might increase depending on the irregular fees to be paid by the student.

Prof. Dr. Saifuddin Md. Tareeq
29.02.2023
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000, Bangladesh

Definition of a Batch:

A group of 40 students in an intake (classroom size) will be used as a batch. The actual number of students in a batch will be determined after the admission process. There will be no batch with size less than 30 students.

Fee Structure for International Students:

For SAARC Students course fee will be USD 150.00 per credit and for other International students USD 200.00 per credit together with admission fee USD 500.00 and registration fee USD 300.00. In addition to that student have to pay other University fees as applicable.

20-02-2023

Prof. Dr. Saifuddin Md. Tareeq
Chairman
Dept. of Computer Science and Engineering
University of Dhaka- 1000. Bangladesh