MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB
Syllabus for B.Sc.in Cyber Security
(Effective for Students Admitted in Academic Session 2019-2020)
PROGRAM STRUCTURE

1ST YEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
SEMESTER I							
Theory							
1	CYS-101	Fundamental of Computing – using C Language	3	0	0	3	3
2	CYS(M)-101	Mathematics for Computing Professionals	3	1	0	4	4
3	CYS(HU)-101	English Communication	3	1	0	4	4
4	CYS-102	Programming using Python	3	0	0	3	3
5	CYS-103	Computer Network	3	0	0	3	3
Practical							
1	CYS-191	Fundamental of Computing – using C Language Lab	0	0	2	2	1
2	CYS-192	Programming in Python Lab	0	0	2	2	1
3	CYS-193	Computer Network Lab	0	0	2	2	1
Total				20			
SEMESTER II							
Theory							
1	CYS-201	Computer Architecture & Organization	3	1	0	4	4
2	CYS-202	Data Structures and Algorithms	3	0	0	0	3
3	CYS(HU)-201	Environmental Science	3	1	0	0	4
4	CYS-203	Ethical Hacking and Systems Defence	3	0	0	3	3
5	CYS-204	Object Oriented Concepts	3	0	0	3	3
Practical							
1	CYS-291	Data Structures and Algorithms	0	0	2	2	1
2	CYS-292	Object Oriented Concepts	0	0	2	2	1
3	CYS-293	Ethical Hacking and Systems Defence Lab	0	0	2	2	1
Total				20			

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2ND YEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
SEMESTER III							
Theory							
1	CYS-301	Database Management Systems & Distributed Databases	3	0	0	3	3
2	CYS-302	Security Architecture and Models	3	1	0	4	4
3	CYS-303	Operating System & system programming	3	0	0	3	3
4	CYS-304	Vulnerability Analysis, Penetration Testing, and Incident Handling	3	0	0	3	3
5	CYS-305	Cyber Threat and Modelling	3	1	0	4	4
Practical							
1	CYS-391	Database Management Systems	0	0	2	2	1
2	CYS-392	Operating System & system programming (LINUX)	0	0	2	2	1
3	CYS-393	VAPT Lab	0	0	2	2	1
Total			20				
SEMESTER IV							
Theory							
1	CYS-401	Cryptography & Information Security	3	1	0	4	4
2	CYS-402	Parallel and Distributed Computing (inc. Cloud computing)	3	0	0	3	3
3	CYS-403	Ethical Hacking and Systems Defence - Certification	3	1	0	3	4
4	CYS-404	Software Engineering & software design with UML	3	0	0	3	3
5	CYS-405	Advanced computer network & Security (TCP/IP, Wireless,mobile)	3	0	0	3	3
Practical							
1	CYS-491	Cryptography & Information Security Lab	0	0	2	2	1
2	CYS-492	Software Engineering & software design with UML	0	0	2	2	1
3	CYS-493	Advanced computer network & Security	0	0	2	2	1
Total			20				

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3RDYEAR

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
		SEMESTER V					
		Theory					
1	CYS-501	**Cyber Forensics**	3	0	0	3	3
2	CYS-502	**Cyber Law and Ethics**	3	0	0	4	3
3	CYS-503	**Malware Analysis and Reverse Engineering**	3	1	0	4	4
4	CYS(PE)-504A	**Enterprise Security Architecture and Design**	3	1	0	4	4
	CYS(PE)-504B	**Visualisation and Cloud Security**					
	CYS(PE)-504C	**Intrusion Detection and Prevention System**					
	CYS(PE)-504D	**Auditing IT Infrastructures for Compliance**					
5	CYS(PE)-505A	**Big Data & IoT Security**	3	1	0	4	4
	CYS(PE)-505B	**Disaster Recovery & business continuity management**					
	CYS(PE)-505C	**Data Science, Algorithms, and Complexity in the Cyber Context**					
	CYS(PE)-505D	**Biometric Security**					
		Practical					
1	CYS-591	**Cyber Forensics Lab**	0	0	2	2	1
2	CYS-592	**Malware Analysis Lab**	0	0	2	2	1
		Total				20	
		SEMESTER VI					
1	CYS-601	**Artificial Intelligence In Cyber security & Industry use cases**	3	0	0	3	3
2	CYS(PE)-602A	**Advanced Ethical Hacking**	3	1	0	4	4
	CYS(PE)-602B	**Block Chain & Cryptocurrency**					
	CYS(PE)-602C	**Penetration Testing**					
	CYS(PE)-602D	**Risk Management**					
	CYS(PE)-602E	**Global Certification**					
		Practical					
1	CYS-681	**Project**	0	0	24	24	12
2	CYS-692	**Artificial Intelligence In Cyber security & Industry use cases**	0	0	2	2	1
		Total				20	

Total credits in the Program: 120 credits

Honours degree requirements: Additional 16 credits from MOOCS of the MOOCS basket