

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB**  
**(Formerly West Bengal University of Technology)**  
**Syllabus for B.Sc.in Cyber Security (Industry Induced)**  
 (Effective for Students Admitted in Academic Session 2019-2020)  
**PROGRAM STRUCTURE**

**1<sup>ST</sup> YEAR**

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
<b>SEMESTER I</b>							
<b>Theory</b>							
1	CYS-101	Fundamental of Computing	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	Digital principles and system design	3	0	0	3	3
5	CYS-103	Computational Statistics	3	0	0	3	3
<b>Practical</b>							
1	CYS-191	Fundamental of Computing	0	0	2	2	1
2	CYS-192	Digital principles and system design	0	0	2	2	1
3	CYS-193	Computational Statistics- (Lab)	0	0	2	2	1
<b>Total</b>			<b>20</b>				
<b>SEMESTER II</b>							
<b>Theory</b>							
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(HU)-202	Cyber Law and Ethics	3	1	0	4	4
5	CYS-203	Object Oriented Concepts	3	0	0	3	3
<b>Practical</b>							
1	CYS-291	Data Structures and Algorithms	0	0	2	2	1
2	CYS-292	Object Oriented Concepts	0	0	2	2	1
<b>Total</b>			<b>20</b>				

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**2<sup>ND</sup> YEAR**

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
<b>SEMESTER III</b>							
<b>Theory</b>							
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	Computer Networks	3	0	0	3	3
5	CYS-305	Cyber Threat and Modelling	3	1	0	4	4
<b>Practical</b>							
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	Computer Networks	0	0	2	2	1
<b>Total</b>			<b>20</b>				
<b>SEMESTER IV</b>							
<b>Theory</b>							
1	CYS-401	Cryptography & Information Security	3	1	0	4	4
2	CYS-402	Parallel and Distributed Computing (inc. Cloud computing)	3	1	0	4	4
3	CYS-403	Ethical Hacking and Systems Defence	3	0	0	3	3
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
<b>Practical</b>							
1	CYS-491	Ethical Hacking and Systems Defence	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
<b>Total</b>			<b>20</b>				

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**3<sup>RD</sup> YEAR**

SL No	CODE	Paper	Contact Periods per week			Total Contact Hours	Credits
			L	T	P		
<b>SEMESTER V</b>							
<b>Theory</b>							
1	CYS-501	Cyber Forensics	3	0	0	3	3
2	CYS-502	Vulnerability Analysis, Penetration Testing, and Incident Handling	3	1	0	4	4
3	CYS-503	Malware Analysis	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					
<b>Practical</b>							
1	CYS-591	Cyber Forensics	0	0	2	2	1
<b>Total</b>			<b>20</b>				
<b>SEMESTER VI</b>							
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					
<b>Practical</b>							
1	CYS-691	Project	0	0	24	24	12
2	CYS-692	Artificial Intelligence In Cyber security & Industry use cases	0	0	2	2	1
<b>Total</b>			<b>20</b>				

Total credits in the Program: 120 credits

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