



University of Engineering & Management, Kolkata

B.Tech

in

Computer Science and Business System

Syllabus

Year 1						
Semester 1			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
1.1	SH	Discrete Mathematics (PCC-CS101)	3	0	0	3
1.2	SH	Introductory Topics in Statistics, Probability and Calculus (BSC102)	3	0	0	3
1.3	CS	Fundamentals of Computer Science (ESC102) + Lab (ESC192)	2	1	2	4
1.4	SH	Principles of Electrical Engineering (ESC101) + Lab (ESC191)	3	0	2	4
1.5	SH	Fundamentals of Physics (BSC101) + Lab (BSC191)	3	0	2	4
1.6	SH	Business Communication & Value Science – I (HSMC101)	2	1	2	4
		Induction Program (Non-Credit) (MC101)				
Total			16	2	8	22

Semester 2			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
1.7	SH	Linear Algebra (BSC201)	3	1	0	4
1.8	SH	Statistical Methods (BSC202) + Lab (BSC292)	3	1	0	4
1.9	CS	Data Structures & Algorithms (PCC-CS201) + Lab (PCC-CS291)	2	1	2	4
1.10	SH	Principles of Electronics (ESC201) + Lab (ESC291)	3	0	2	4
1.11	SH	Fundamentals of Economics (HSMC202)	2	0	0	2
1.12	SH	Business Communication & Value Science – II (HSMC201)	2	1	2	4
1. 13		Environmental Sciences (Non-Credit) (BSC203)				
Total			15	4	6	22

Year 2

Semester 3			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
2.1	CS	Formal Language and Automata Theory	3	1	2	5
2.2	CS	Computer Organization & Architecture	3	0	2	4
2.3	CS	Object Oriented Programming + Lab	3	0	2	4
2.4	CS	Computational Statistics + Lab	3	0	2	4
2.5	CS	Software Engineering + Lab	3	1	2	5
2.6		Indian Constitution (Non Credit)				
Total			15	2	10	22

Semester 4			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
2.8	CS	Operating Systems + Lab (Unix)	3	0	2	4
2.9	CS	Database Management Systems + Lab	3	0	2	4
2.10	CS	Software Design with UML + Lab	3	0	2	4
2.11	IIE	Introduction to Innovation, IP Management & Entrepreneurship	3	0	0	3
2.12	IIE	Business Communication & Value Science – III	2	0	4	4
2.13	MS	Operations Research + Lab	2	0	2	3
2.14		Essence of Indian Traditional Knowledge (Non Credit)				
Total			16	0	12	22

Year 3						
Semester 5			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
3.1	CS	Design And Analysis of Algorithms + Lab	2	0	2	3
3.2	CS	Compiler Design + Lab (LEX & YACC)	3	0	2	4
3.3	MS	Fundamentals of Management	3	1	0	4
3.4	MS	Business Strategy	3	0	0	3
3.5	SH	Design Thinking	2	0	2	3
3.6		Elective I + Lab**	2	1	2	4
3.7		Mini Project	0	0	2	1
Total			15	2	10	22

Semester 6			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
3.8	CS	Computer Networks + Lab	2	1	2	4
3.9	CS	Information Security + Lab	2	1	2	4
3.10	DS	Artificial Intelligence + Lab	2	0	4	4
3.11	MS	Financial & Cost Accounting	2	1	0	3
3.12	SH	Business Communication & Value Science – IV	2	0	2	3
3.13		Elective II + Lab**	2	1	2	4
Total			12	4	12	22

Industrial Project (6-8 weeks) - 4 credit points

4

Year 4						
Semester 7			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
4.1	DTS	Usability Design of Software Applications + Lab	2	0	1	2.5
4.2	CS	IT Workshop Skylab / Matlab + Lab	3	0	1	3.5
4.3	MS	Financial Management	3	0	0	3
4.4	MS	Human Resource Management	3	0	0	3
4.5		Elective III**	2	1	2	4
4.6		Elective IV+ Lab**	3	1	2	5
4.7		Project Evaluation I	0	0	2	1
Total			16	2	8	22

Semester 8			Teaching Scheme (Hours per week) (Assumption: 15 weeks per semester)			Credit
ID	Cluster	Course	Lecture	Tutorial	Practical	Total
4.8	MS	Services Science & Service Operational Management + Lab	3	0	4	5
4.9	MS	IT Project Management + Lab	3	0	2	4
4.10	MS	Marketing Research & Marketing Management	3	0	0	3
4.11		Elective V**	2	1	2	4
4.12		Elective VI + Lab**	2	1	2	4
4.13		Project Evaluation II	0	0	4	2
Total			13	2	14	22

Total Credit Points

180

Please Note: Students can select only one elective out of three options offered

Year 3					
Semester 5			Semester 6		
Elective I	DTS	Coversational Systems	Elective II	DTS	Robotics and Embedded Systems
	DTS	Cloud, Microservices & Application		DTS	Modern Web Applications
	DTS	Machine Learning		DS	Data Mining and Analytics

Year 4					
Semester 7			Semester 8		
Elective III	DS	Cognitive Science & Analytics	Elective V	SH	Behavioral Economics
	DTS	Introduction to IoT		MS	Computational Finance & Modeling
	DS	Cryptology		SH	Psychology
Elective IV	CS	Quantum Computation & Quantum Information	Elective VI	DTS	Enterprise Systems
	DS	Advanced Social, Text and Media Analytics		MS	Advance Finance
	DTS	Mobile Computing		DTS	Image Processing and Pattern Recognition