DEPARTMENT OF CIVIL ENGINEERING (CE)

SYLLABUS FOR BACHELOR DEGREE IN CE

1. Term Wise Distribution of Courses for BSc in Civil Engineering (CE)

Level - 1, Term - I

Ser	Course Code	Course Name	Cr. Hr.	Ct. Hr.	Type
1	CE 101	Analytical Mechanics	3.0	3	T
2	PHY 101	Waves and Oscillation, Optics and Modern Physics	3.0	3	T
3	CHEM 101	Fundamentals of Chemistry	3.0	3	T
4	MATH 101	Differential and Integral Calculus	3.0	3	T
5	GEBS 101	Bangladesh Studies	2.0	2	T
6	CE 100	Civil Engineering Drawing	1.5	3	S
7	CSE 176	Computer Programming Sessional	1.5	3	S
8	ME 132	Workshop TechnologySessional	1.5	3	S
9	CHEM 102	Chemistry Sessional	1.5	3	S
Total [Theory (T) – 5, Sessional (S) – 4]			20	26	

Level - 1, Term - II

Ser	Course Code	Course Name	Cr. Hr.	Ct. Hr.	Type
1	CE 103	Surveying and Spatial- Information Engineering	3.0	3	T
2	EECE 165	Basic Electrical Technology	3.0	3	T
3	PHY 107/ CHEM 105	Structure of Matter, Heat & Temperature, Kinetics & Kinematics/ Environmental Chemistry	3.0	3	T
4	MATH 103	Differential Equations and Matrix	3.0	3	T
5	GES 101	Fundamentals of Sociology	2.0	2	T
6	CE 102	Computer Aided Drawing	1.5	3	S
7	PHY 102	Physics Sessional	1.5	3	S
8	LANG 102	Communicative English I	1.5	3	S
9	CE 104	Practical Surveying	1.5	3 wks	S
Total [Theory (T) – 5, Sessional (S) – 3, Survey]			20	23	

Level – 2, Term – I

Ser	Course Code	Course Name	Cr. Hr.	Ct. Hr.	Type
1	CE 211	Mechanics of Solids I	3.0	3	T
2	CE 261	Fluid Mechanics	3.0	3	T
3	CE 203	Engineering Geology and Geomorphology	3.0	3	T
4	MATH 201	Vector Analysis, Laplace Transform and CoordinateGeometry	3.0	3	T
5	GEA 201/ GEE 201	Principles of Accounting/ Fundamentals of Economics	2.0	2	T
6	CE 200	Details of Construction	1.5	3	S
7	CE 210	GIS and Remote Sensing	1.5	3	S
8	CE 262	Fluid Mechanics Sessional	1.5	3	S
9	LANG 202	Communicative English II	1.5	3	S
Total [Theory (T) – 5, Sessional (S) – 4]			20	26	

Level – 2, Term – II

Ser	Course Code	Course Name	Cr. Hr.	Ct. Hr.	Type
1	CE 201	Engineering Materials	3.0	3	T
2	CE 205	Numerical Methods for Engineering	3.0	3	T
3	CE 213	Mechanics of Solids II	3.0	3	T
4	MATH 203	Applied Mathematics for Engineers	3.0	3	T
5	GELM 275	Leadership and Management	2.0	2	T
6	CE 208	Quantity Surveying	1.5	3	S
7	CE 212	Structural Mechanics and Materials Sessional	1.5	3	S
8	CSE 274	Engineering Computations Sessional	1.5	3	S
9	ARCH 214	Architectural, Engineering and Planning Appreciation	1.5	3	S
Total [Theory (T) – 5, Sessional (S) – 4]			20	26	

Level - 3, Term - I

Ser	Course Code	Course Name	Cr.Hr.	Ct. Hr.	Type
1	CE 311	Structural Analysis and Design I	4.0	4	T
2	CE 315	Design of Concrete Structures I	3.0	3	T
3	CE 331	Environmental Engineering I	3.0	3	T
4	CE 341	Principles of Soil Mechanics	4.0	4	T
5	CE 332	Environmental Engineering Sessional	1.5	3	S
6	CE 342	Geotechnical Engineering Sessional	1.5	3	S
7	GERM 352	Fundamentals of Research Methodology	2.0	4	S
Total [Theory (T) – 4, Sessional (S) – 3]			19	24	

Level - 3, Term - II

Ser	Course Code	Course Name	Cr.Hr.	Ct. Hr.	Type
1	CE 317	Design of Concrete Structures II	3.0	3	T
2	CE 333	Environmental Engineering II	4.0	4	T
3	CE 343	Foundation Engineering	3.0	3	T
4	CE 351	Fundamentals of Transportation Engineering	3.0	3	T
5	CE 361	Open Channel Hydraulics	3.0	3	T
6	CE 316	Concrete Structures Design Sessional I	1.5	3	S
7	CE 362	Open Channel Hydraulics Sessional	1.5	3	S
8	CE 300	Civil Engineering Students' Internship Programme (CESIP)	1.5	3 wks	-
Total [Theory (T) – 5, Sessional (S) – 2, CESIP]			20.5	22	

Level - 4, Term - I

Ser	Course Code	Course Name	Cr.Hr.	Ct.Hr.	Type
1	CE 411	Structural Analysis and Design II	3.0	3	T
2	CE 413	Design of Steel Structures	3.0	3	T
3	CE 451	Highway Materials, Pavement Design and Railways	4.0	4	T
4	CE 463	Hydrology and Irrigation Engineering	4.0	4	T
5	CE 410	Concrete Structures Design Sessional II	1.5	3	S
6	CE 414	Steel Structures Design Sessional	1.5	3	S
7	CE 452	Highway Materials, Mix Design and Traffic Engineering Sessional	1.5	3	S
8	CE 400	Final Year Research Project (FYP)	2.0	4	-
Total [Theory (T) – 4, Sessional (S)– 3, FYP]			20.5	23	

Level - 4, Term - II

Ser	Course Code	Course Name	Cr.Hr.	Ct.Hr.	Type
1	CE 4XX	Two Theory Courses in Major Division from Elective Courses	4.0	4	T
2	CE 4XX	Two Theory Courses in Minor Division from Elective Courses	4.0	4	T
3	GEPM 401	Project Planning and Construction Management	3.0	3	T
4	GEEP 403	Engineering Ethics and Professional Practices	2.0	2	T
5	CE 4XX	One Lab Course in Major Division from Elective Courses	1.5	3	S
6	CE 4XX	One Lab Course in Minor Division from Elective Courses	1.5	3	S
7	CE 400	Final Year Research Project (FYP) from Elective Courses	4.0	8	-
Total [Theory (T) – 6, Sessional (S) – 3, FYP]			20	27	

SYLLABUS FOR BACHELOR DEGREE IN CSE

2. Term Wise Distribution of Courses for BSc in Computer Science Engineering (CSE)

LEVEL-1, TERM - I

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE -101	Discrete Mathematics	3.00		3.00
2.	CHEM-101	Fundamentals of Chemistry	3.00	-	3.00
3.	CHEM-102	Chemistry Sessional	-	3.00	1.50
4.	EECE-163	Electrical Circuit Analysis	3.00	-	3.00
5.	EECE-164	Electrical Circuit Analysis Sessional	-	1.50	0.75
6.	GEBS-101	Bangladesh Studies	2.00	-	2.00
7.	MATH-101	Differential and Integral Calculus	3.00	-	3.00
8.	PHY-101	Waves and Oscillations, Optics and Modern Physics	3.00	-	3.00
9.	PHY-102	Physics Sessional	-	3.00	1.50
Total			**17.00**	**7.50**	**20.75**

LEVEL – 1, TERM - II

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-103	Digital Logic Design	3.00	-	3.00
2.	CSE-104	Digital Logic Design Sessional	-	3.00	1.50
3.	CSE-105	Structured Programming Language	3.00	-	3.00
4.	CSE-106	Structured Programming Language Sessional	-	3.00	1.50
5.	EECE-169	Electronic Devices and Circuits	3.00	-	3.00
6.	EECE-170	Electronic Devices and CircuitsSessional	-	1.50	0.75
7.	LANG-102	Communicative English-I	-	3.00	1.50
8.	MATH-105	Vector Analysis, Matrix and Coordinate Geometry	3.00	-	3.00
9.	ME-122	Fundamental of Mechanical Engineering Sessional	-	4.00	2.00
Total			**12.00**	**13.50**	**19.25**

LEVEL - 2, TERM - I

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-203	Data Structures and Algorithms-I	3.00	-	3.00
2.	CSE-204	Data Structures and Algorithms-I Sessional	-	3.00	1.50
3.	CSE-205	Object Oriented Programming Language	3.00	-	3.00
4.	CSE-206	Object Oriented Programming Language Sessional-I	-	3.00	1.50
5.	CSE-217	Theory of Computation	3.00	-	3.00
6.	EECE-269	Electrical Drives and Instrumentation	3.00	-	3.00
7.	EECE-270	Electrical Drives and Instrumentation Sessional	-	1.50	0.75
8.	LANG-202	Communicative English-II	-	3.00	1.50
9.	MATH-205	Differential Equations, Laplace Transform and Fourier Transform	3.00	-	3.00
Total			**15.00**	**10.50**	**20.25**

LEVEL - 2, TERM - II

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CE-250	Engineering Drawing and CADSessional	-	3.00	1.50
2.	CSE-213	Computer Architecture	3.00	-	3.00
3.	CSE-215	Data Structures and Algorithms-II	3.00	-	3.00
4.	CSE-216	Data Structures and Algorithms-II Sessional	-	3.00	1.50
5.	CSE-219	Mathematical Analysis for Computer Science	3.00	-	3.00
6.	CSE-220	Object Oriented Programming Sessional-II	-	1.50	0.75
7.	EECE-279	Digital Electronics and Pulse Technique	3.00	-	3.00
8.	EECE-280	Digital Electronics and Pulse Technique Sessional	-	1.50	0.75
9.	GELM-275	Leadership and Management	2.00	-	2.00
10.	MATH-207	Complex Variable and Statistics	3.00	-	3.00
Total			**17.00**	**9.00**	**21.50**

LEVEL – 3, TERM - I

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-301	Database Management Systems	3.00	-	3.00
2.	CSE-302	Database Management Systems Sessional	-	3.00	1.50
3.	CSE-303	Compiler	3.00	-	3.00
4.	CSE-304	Compiler Sessional	-	1.50	0.75
5.	CSE-305	Microprocessors, Micro-controllers and Assembly Language	3.00	-	3.00
6.	CSE-306	Microprocessors, Micro-controllers and Assembly Language Sessional	-	3.00	1.50
7.	CSE-307	Operating System	3.00	-	3.00
8.	CSE-308	Operating System Sessional	-	1.50	0.75
9.	CSE-317	Data Communication	3.00	-	3.00
10.	CSE-318	Data Communication Sessional	-	1.50	0.75
Total			**15.00**	**10.50**	**20.25**

LEVEL – 3, TERM - II

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-309	Computer Network	3.00	-	3.00
2.	CSE-310	Computer Network Sessional	-	3.00	1.50
3.	CSE-315	Digital System Design	2.00	-	2.00
4.	CSE-316	Digital System Design Sessional	-	1.50	0.75
5.	CSE-319	Software Engineering	3.00	-	3.00
6.	CSE-320	Software Engineering Sessional	-	1.50	0.75
7.	CSE-364	Software Development Project - I	-	3.00	1.50
8.	GERM-352	Fundamentals of Research Methodology	-	4.00	2.00
9.	GES-301	Fundamentals of Sociology	2.00	-	2.00
10.	GESL-303	Environment, Sustainability and Law	2.00	-	2.00
Total			**12.00**	**13.00**	**18.50**

*LEVEL-3 INDUSTRIAL TRAINING

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-350	Industrial Training	-	4 Weeks	1.00

***Note:** This course is mandatory. Evaluation report from industry is to be submitted at the end ofthe training and accordingly to be incorporated in the tabulation sheet.

LEVEL - 4, TERM- I

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-400	Final Year Research & Design Project	-	6.00	3.00
2.	CSE-405	Computer Interfacing	3.00	-	3.00
3.	CSE-406	Computer Interfacing Sessional	-	1.50	0.75
4.	CSE-415	Human Computer Interaction	3.00	-	3.00
5.	CSE-429	Computer Security	3.00	-	3.00
6.	CSE-464	Software Development Project-II	-	3.00	1.50
7.	CSE-4XO	Technical Elective-I	3.00	-	3.00
8.	GEEM-433	Engineering Ethics and MoralPhilosophy	2.00	-	2.00
Total			**14.00**	**10.50**	**19.25**

TECHNICAL ELECTIVE-I

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-407	Applied Statistics and QueuingTheory	3.00	-	3.00
2.	CSE-417	Block chaining and Cryptocurrency Technology	3.00	-	3.00
3.	CSE-419	Advanced Algorithms	3.00	-	3.00
4.	CSE-421	Basic Graph Theory	3.00	-	3.00
5.	CSE-423	Fault Tolerance System	3.00	-	3.00
6.	CSE-425	Basic Multimedia Theory	3.00	-	3.00
7.	CSE-427	Digital Image Processing	3.00	-	3.00
8.	CSE-431	Object Oriented SoftwareEngineering	3.00	-	3.00
9.	CSE-433	Artificial Neural Networks and Fuzzy Systems	3.00	-	3.00
10.	CSE-435	Distributed Algorithms	3.00	-	3.00
11.	CSE-437	Bioinformatics	3.00	-	3.00
12.	CSE-439	Robotics	3.00	-	3.00
13.	CSE-447	Telecommunication Engineering	3.00	-	3.00

LEVEL - 4, TERM - II

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-400	Final Year Research & DesignProject	-	6.00	3.00
2.	CSE-401	Information System Design and Development	3.00	-	3.00
3.	CSE-403	Artificial Intelligence	3.00	-	3.00
4.	CSE-404	Artificial Intelligence Sessional	-	1.50	0.75
5.	CSE-413	Computer Graphics	3.00	-	3.00
6.	CSE-414	Computer Graphics Sessional	-	1.50	0.75
7.	CSE-4XO	Technical Elective-II	3.00	-	3.00
8.	CSE-4XE	Technical Elective-II Sessional	-	1.50	0.75
9.	GEPM-463	Project Management and Finance	2.00	-	2.00
Total			**14.00**	**10.50**	**19.25**

TECHNICAL ELECTIVE -II

Ser	Course No	Course Title	Hours/Week		Credits
			Theory	Sessional	
1.	CSE-411	VLSI Design	3.00	-	3.00
2.	CSE-412	VLSI Design Sessional	-	1.50	0.75
3.	CSE-441	Machine Learning	3.00	-	3.00
4.	CSE-442	Machine Learning Sessional	-	1.50	0.75
5.	CSE-443	Pattern Recognition	3.00	-	3.00
6.	CSE-444	Pattern Recognition Sessional	-	1.50	0.75
7.	CSE-445	Digital Signal Processing	3.00	-	3.00
8.	CSE-446	Digital Signal Processing Sessional	-	1.50	0.75
9.	CSE-449	Mobile and Ubiquitous Computing	3.00	-	3.00
10.	CSE-450	Mobile and Ubiquitous ComputingSessional	-	1.50	0.75
11.	CSE- 451	Simulation and Modeling	3.00	-	3.00
12.	CSE- 452	Simulation and Modeling Sessional	-	1.50	0.75
13.	CSE-455	Natural Language Processing	3.00	-	3.00
14.	CSE-456	Natural Language Processing Sessional	-	1.50	0.75
15.	CSE-457	Advanced Database Management Systems	3.00	-	3.00
16.	CSE-458	Advanced Database Management Sessional	-	1.50	0.75
17.	CSE-459	Internet of Things (IoT)	3.00	-	3.00
18.	CSE-460	Internet of Things (IoT) Sessional	-	1.50	0.75
19.	CSE-461	Industrial Revolution	3.00	-	3.00
20.	CSE-462	Industrial Revolution Sessional	-	1.50	0.75
21.	CSE-465	Cyber & Physical Security	3.00	-	3.00
22.	CSE-466	Cyber & Physical Security Sessional	-	1.50	0.75

SYLLABUS FOR BACHELOR DEGREE IN ICE

3. Term Wise Distribution of Courses for BSc in Information and Communication Engineering (ICE)

LEVEL - 1, TERM – I

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE1111	Fundamental of Information Technology	3.00	-	3.00
2	ICE1113	Fundamental of Communication Engineering	3.00	-	3.00
3	ICE1112	Fundamental of Information and Communication Engineering Sessional	-	2.00	1.00
4	ICE1121	Basic Electrical Engineering	3.00	-	3.00
5	ICE1122	Basic Electrical Engineering Sessional	-	3.00	1.50
6	MATH1131	Differential and Integral Calculus	3.00	-	3.00
7	PHY1141	Engineering Physics	3.00	-	3.00
8	PHY1142	Engineering Physics Sessional	-	2.00	1.00
9	HUM1151	Technical and Communicative English	2.00	-	2.00
10	HUM152	Technical and Communicative English Sessional	-	2.00	1.00
Total			**17.00**	**09.00**	**21.50**

LEVEL - 1, TERM - II

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE1211	Structured Programming Language	3.00	-	3.00
2	ICE1212	Structured Programming Language Sessional	-	3.00	1.50
3	ICE1221	Analog Electronics	3.00	-	3.00
4	ICE1222	Analog Electronics Sessional	-	3.00	1.50
5	MATH1231	Linear Algebra and Vector Analysis	3.00	-	3.00
6	CHEM1251	Engineering Chemistry	3.00	-	3.00
7	HUM2251	Sociology and Economics	3.00	-	3.00
8	HUM1255	Bangladesh Studies (History of Independence)	2.00	-	2.00
9	HUM1153	Bengali Language and Literature	2.00	-	2.00
Total			**19.00**	**6.00**	**22.00**

LEVEL - 2, TERM – I

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE2111	Data Structures and Algorithms	3.00	-	3.00
2	ICE2112	Data Structures and Algorithms Sessional	-	3.00	1.50
3	ICE2121	Digital Logic Design	3.00	-	3.00
4	ICE2122	Digital Logic Design Sessional	-	3.00	1.50
5	ICE2131	Signals and Systems	3.00	-	3.00
6	ICE2132	Signals and Systems Sessional	-	3.00	1.50
7	ICE2141	Numerical Methods	2.00	-	2.00
8	ICE2142	Numerical Methods Sessional	-	2.00	1.00
9	ICE2151	Discrete Mathematics	2.00	-	2.00
10	MATH2161	Matrices and Differential Equations	3.00	-	3.00
Total			**16.00**	**11.00**	**21.50**

LEVEL - 2, TERM – II

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE2211	Analog and Digital Communication	3.00	-	3.00
2	ICE2212	Analog and Digital Communication Sessional	-	3.00	1.50
3	ICE2221	Computer Networking	3.00	-	3.00
4	ICE2222	Computer Networking Sessional	-	3.00	1.50
5	ICE2231	Object Oriented Programming Language	3.00	-	3.00
6	ICE2232	Object Oriented Programming Language Sessional	-	3.00	1.50
7	ICE2241	Electromagnetic Field and Antenna	3.00	-	3.00
8	ICE2242	Electromagnetic Field and Antenna Sessional	-	3.00	1.50
9	MATH1241	Statistics for Engineers	3.00	-	3.00
Total			**15.00**	**12.00**	**21.00**

LEVEL - 3, TERM - I

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE3111	Optical Fiber Communication	3.00	-	3.00
2	ICE3112	Optical Fiber Communication Sessional	-	3.00	1.50
3	ICE3121	Database Management System	3.00	-	3.00
4	ICE3122	Database Management System Sessional	-	3.00	1.50
5	ICE3131	Advanced Java Programming	3.00	-	3.00
6	ICE3132	Advanced Java Programming Sessional	-	3.00	1.50
7	ICE3141	Wireless and Mobile Communication	3.00	-	3.00
8	ICE3142	Wireless and Mobile Communication Sessional	-	3.00	1.50
9	HUM3157	Professional Ethics and Environmental Protection	2.00	-	2.00
10	ICE3000	Integrated Design Project (IDP) *	-	2.00	1.00
Total			**14.00**	**14.00**	**21.00**

*Note: Each student has to complete one Integrated Design Project (IDP) in the combined duration of two Semester of 3rd Year. In course ICE- 3000 (Part-I), a student has to make a proposal defence at the end of the semester. The defended Integrated Design Project (IDP) has to be completed in the continuation course ICE-3000 (Part-II) in next semester.

LEVEL - 3, TERM - II

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE3211	Microprocessor	3.00	-	3.00
2	ICE3212	Microprocessor Sessional	-	3.00	1.50
3	CSE3221	Distributed Operating System	3.00	-	3.00
4	CSE3222	Distributed Operating System Sessional	-	3.00	1.50
5	ICE3231	Digital Signal Processing	3.00	-	3.00
6	ICE3232	Digital Signal Processing Sessional	-	3.00	1.50
7	HUM3241	Industrial Management and Accountancy	3.00	-	3.00
8	ICE3000	Integrated Design Project (IDP)	-	2.00	1.00
9	ICE3260	Industrial Training*	-	4 Weeks	1.00
Total			**12.00**	**11.00**	**18.50**

*LEVEL - 3 INDUSTRIAL TRAINING

***Note:** This course is mandatory. Evaluation report from industry is to be submitted at the end ofthe training and accordingly to be incorporated in the tabulation sheet.

LEVEL - 4, TERM - I

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE4000	Capstone Project / Thesis*	-	4.00	2.00
2	ICE4121	Network Security	3.00	-	3.00
3	ICE4***	Elective I	3.00	-	3.00
4	ICE4***	Elective I Sessional	-	3.00	1.50
5	ICE4***	Elective II	3.00	-	3.00
6	ICE4***	Elective II Sessional	-	3.00	1.50
7	ICE4***	Elective III	3.00	-	3.00
8	ICE4103	Seminar (Related Topics)		2.00	1.00
Total			**12.00**	**12.00**	**18.00**

*Note: Each student has to complete one Project or Thesis in the combined duration of two Semester of 4thYear. In course ICE- 4000 (Part-I), a student has to make a proposal defense at the end of the semester. The defensed project/thesis has to be completed in the continuation course ICE-4000 (Part-II) in next semester.

***Note: Semester digit number depends on theory/sessional course chosen from elective courses.

LEVEL - 4, TERM - II

Ser	Course Code	Course Titles	Hours/Week		Credits
			Theory	Sessional	
1	ICE4000	Capstone Project / Thesis**	-	4.00	2.00
2	ICE4211	Artificial Intelligence and Neural Computing	3.00	-	3.00
3	ICE4212	Artificial Intelligence and Neural Computing Sessional	-	3.00	1.50
4	ICE4231	Software Engineering	3.00	-	3.00
5	ICE4232	Software Engineering Sessional	-	3.00	1.50
6	ICE4***	Elective IV	3.00	-	3.00
7	ICE4***	Elective IV Sessional	-	3.00	1.50
8	ICE4***	Elective V	3.00	-	3.00
Total			**12.00**	**13.00**	**18.50**

*** Note: Semester digit number depends on theory/sessional course chosen from elective courses.

LIST OF ELECTIVE COURSES

Communication Engineering

Ser	Course Code	Course Titles	Year, Semester	Hours/Week		Credits
				Theory	Sessional	
1	ICE4*13	Satellite Communication and Radar	Year 4, Sem I/II	3.00	-	3.00
2	ICE4*14	Satellite Communication and Radar Sessional	Year 4, Sem I/II	-	3.00	1.50
3	ICE4*15	Telecommunication and switching	Year 4, Sem I/II	3.00	-	3.00
4	ICE4*17	Communication Theory	Year 4, Sem I/II	3.00	-	3.00
5	ICE4*19	Multimedia System & Application	Year 4, Sem I/II	3.00	-	3.00
6	ICE4*23	Information Theory and Coding	Year 4, Sem I/II	3.00	-	3.00
7	ICE4*25	Microwave Engineering	Year 4, Sem I/II	3.00	-	3.00
8	ICE4*26	Microwave Engineering Sessional	Year 4, Sem I/II	-	3.00	1.50

* Note: Semester digit number depends on semester I/ semester II course chosen for 4th year.

IT/Software Engineering

Ser	Course Code	Course Titles	Year, Semester	Hours/Week		Credits
				Theory	Sessional	
1	ICE4*29	Cloud Computing	Year 4, SemI/II	3.00	-	3.00
2	ICE4*33	Software Quality Assurance	Year 4, SemI/II	3.00	-	3.00
3	ICE4*35	Human Computing Interfacing	Year 4, SemI/II	3.00	-	3.00
4	ICE4*37	Speech Processing and Speech Recognition	Year 4, SemI/II	3.00	-	3.00
5	ICE4*38	Speech Processing and Speech Recognition Sessional	Year 4, SemI/II	-	3.00	1.50
6	ICE4*39	Big Data Analytics and Social Networking	Year 4, SemI/II	3.00	-	3.00

7	ICE4*41	Mobile Application Development	Year 4, SemI/II	3.00	-	3.00
8	ICE4*42	Mobile Application Development Sessional	Year 4, SemI/II	-	3.00	1.50
9	ICE4*43	Data Mining	Year 4, SemI/II	3.00	-	3.00
10	ICE4*45	Internet and Web Programming	Year 4, SemI/II	3.00	-	3.00
10	ICE 4*46	Internet and Web Programming Sessional	Year 4, SemI/II	-	3.00	1.50
11	ICE4*47	Machine Learning	Year 4, SemI/II	3.00	-	3.00
12	ICE4*51	Natural Language Processing	Year 4, SemI/II	3.00	-	3.00
13	ICE4*52	Natural Language Processing Sessional	Year 4, SemI/II	-	3.00	1.50
14	ICE4*53	Computer Graphics and Animation	Year 4, SemI/II	-	3.00	1.50

* Note: Semester digit number depends on semester I/ semester II course chosen for 4th year.

Interdisciplinary

Ser	Course Code	Course Titles	Year, Semester	Hours/Week		Credits
				Theory	Sessional	
1	ICE4*55	Management Information System	Year 4, SemI/II	3.00	-	3.00
	ICE4*57	Bio Medical Engineering	Year 4, SemI/II	3.00	-	3.00
2	ICE4*59	Mechatronics and Robotics Engineering	Year 4, SemI/II	3.00	-	3.00
3	ICE4*61	Digital Image Processing	Year 4, SemI/II	3.00	-	3.00
4	ICE4*62	Digital Image Processing Sessional	Year 4, SemI/II	-	3.00	1.50
5	ICE4*63	Internet of Thing (IoT)	Year 4, SemI/II	3.00	-	
6	ICE4*64	Internet of Thing (IoT) Sessional	Year 4, SemI/II	-	3.00	1.50

* Note: Semester digit number depends on semester I/semester II course chosen for 4th year.

SYLLABUS FOR BACHELOR DEGREE IN EEE

4. Term Wise Distribution of Courses for BSc in Electrical and Electronics Engineering (EEE)

LEVEL 1, TERM-I

Ser	Course No	Course Name	Type of Course	Contact hours	Credits
1	EECE 101	Electrical Circuits I	Theory	3.0	3.0
2	PHY 101	Waves & Oscillation, Optics and Modern Physics	Theory	3.0	3.0
3	MATH 101	Differential and Integral Calculus	Theory	3.0	3.0
4	CHEM 101	Fundamentals of Chemistry	Theory	3.0	3.0
5	GEBS 101	Bangladesh Studies	Theory	2.0	2.0
		Subtotal (Theory)		**14.0**	**14.0**
6	EECE 102	Electrical Circuits and Simulation Laboratory I	Sessional	3.0	1.5
7	PHY 102	Physics Sessional	Sessional	3.0	1.5
8	CHEM 102	Chemistry Sessional	Sessional	3.0	1.5
Subtotal (Sessional)				**9.0**	**4.5**
Total = Contact hours: 23.0; Credits: 18.5					

LEVEL 1, TERM-II

Ser	Course No	Course Name	Type of Course	Contact hours	Credits
1	EECE 105	Electrical Circuits II	Theory	3.0	3.0
2	PHY 103	Electricity & Magnetism, Thermal Physics,Quantum Mechanics & Photonics	Theory	3.0	3.0
3	MATH 105	Vector analysis, Matrices and Coordinate Geometry	Theory	3.0	3.0
4	CSE 109	Computer Programming	Theory	3.0	3.0
5	GES 101	Fundamentals of Sociology	Theory	2.0	2.0
		Subtotal (Theory)		**14.0**	**14.0**
6	EECE 106	Electrical Circuits and Simulation Laboratory II	Sessional	3.0	1.5
7	CSE 110	Computer Programming Laboratory	Sessional	3.0	1.5
8	LANG 102	Communicative English I	Sessional	3.0	1.5
Subtotal (Sessional)				**9.0**	**4.5**
Total = Contact hours: 23.0; Credits: 18.5					

LEVEL 2, TERM-I

Ser	Course No	Course Name	Type of Course	Contact hours	Credits
1	EECE 201	Electronics-I	Theory	3.0	3.0
2	EECE 203	Electrical Machines-I/ Energy Conversion-I	Theory	3.0	3.0
3	ME 283	Fundamental of Mechanical Engineering	Theory	3.0	3.0
4	MATH 205	Differential Equation, Laplace Transform and Fourier Transform	Theory	3.0	3.0
5	GEE 201	Fundamentals of Economics	Theory	2.0	2.0
		Subtotal (Theory)		**14.0**	**14.0**
6	EECE 202	Electronics Circuit and Simulation Laboratory	Sessional	3.0	1.5
7	EECE 212	Numerical Technique Laboratory	Sessional	3.0	1.5
8	ME 284	Fundamental of Mechanical Engineering Laboratory	Sessional	3.0	1.5
9	LANG 202	Communicative English II	Sessional	3.0	1.5
Subtotal (Sessional)				**12.0**	**6.0**
Total = Contact hours: 26.0; Credits: 20.0					

LEVEL 2, TERM-II

Ser	Course No	Course Name	Type of course	Contact hours	Credits
1	EECE 205	Electrical Machines-II/ Energy Conversion-II	Theory	3.0	3.0
2	EECE 207	Electronics II	Theory	3.0	3.0
3	EECE 217	Engineering Electromagnetic	Theory	3.0	3.0
4	MATH 213	Complex Variable, Harmonic Function and Statistics	Theory	3.0	3.0
5	GELM 275	Leadership and Management	Theory	2.0	2.0
		Subtotal (Theory)		**14.0**	**14.0**
6	EECE 206	Electrical Machines Laboratory/ Energy Conversion Laboratory	Sessional	3.0	1.5
7	EECE 208	Electronics Circuit and Simulation Laboratory II	Sessional	3.0	1.5
8	EECE 222	Electrical Service Design and CAD Laboratory	Sessional	4.0	2.0
Subtotal (Sessional)				**10.0**	**5.0**
Total = Contact hours: 24.0; Credits: 19.0					

LEVEL 3, TERM-I

Ser	Course No	Course Name	Type of course	Contact hours	Credits
1	EECE 301	Continuous Signals and Linear Systems	Theory	3.0	3.0
2	EECE 303	Digital Electronics	Theory	3.0	3.0
3	EECE 305	Power System I	Theory	3.0	3.0
4	EECE 313	Electrical Measurement, Instrumentation and Sensors	Theory	3.0	3.0
5	GESL 305	Environment, Sustainability and Law	Theory	2.0	2.0
		Subtotal (Theory)		**14.0**	**14.0**
6	GERM 352	Fundamentals of Research Methodology	Sessional	4.0	2.0
7	EECE 304	Digital Electronics Laboratory	Sessional	3.0	1.5
8	EECE 306	Power System I Laboratory	Sessional	3.0	1.5
9	EECE 314	Electrical Measurement, Instrumentation and Sensors Laboratory	Sessional	3.0	1.5
Subtotal (Sessional)				**13.0**	**6.5**
Total = Contact hours : 27.0 ; Credits : 20.5					

LEVEL 3, TERM-II

Ser	Course No	Course Name	Type of course	Contact hours	Credits
1	EECE 309	Communication Theory I	Theory	3.0	3.0
2	EECE 315	Electrical Properties of Material	Theory	3.0	3.0
3	EECE 311	Digital Signal Processing I	Theory	3.0	3.0
4	EECE 317	VLSI I	Theory	3.0	3.0
5	CSE 371	Microprocessors and Interfacing	Theory	3.0	3.0
		Subtotal (Theory)		**15.0**	**15.0**
6	EECE 310	Communication Theory I Laboratory	Sessional	3.0	1.5
7	EECE 312	Digital Signal Processing I Laboratory	Sessional	3.0	1.5
8	EECE 318	VLSI I Laboratory	Sessional	3.0	1.5
9	CSE 372	Microprocessors and Interfacing Laboratory	Sessional	3.0	1.5
10	EECE 330	Industrial Training	Sessional	1.0	1.0
Subtotal (Sessional)				**12.0+1.0 (6weeks)**	**7.0**
Total = Contact hours : 28.0; Credits : 22.0					

EECE 330 (Industrial Training/attachment) will be conducted at any convenient time after the term end exam of Fall Term (Jul-Dec) for a duration of 6 weeks as applicable or decided bythe department.

LEVEL 4, TERM-I

Ser	Course No	Course Name	Type of Course	Contact hours	Credits
1	EECE 401	Control System I	Theory	3.0	3.0
2	EECE 473	Power Electronics and Industrial Drives	Theory	3.0	3.0
3	EECE 475	Power Plant Engineering	Theory	3.0	3.0
4	EECE 4**	Elective I	Theory	3.0	3.0
5	EECE 4 **	Elective II	Theory	3.0	3.0
	Subtotal (Theory)			**15.0**	**15.0**
6	EECE 400	Final Year Design and Research/ Capstone Project		6.0	3.0
7	EECE 402	Control System I Laboratory	Sessional	3.0	1.5
8	EECE 474	Power Electronics and Industrial Drives Laboratory	Sessional	3.0	1.5
Subtotal (Sessional)				**12.0**	**6.0**
Total = Contact hours : 27.0; Credit hours : 21.0					

LEVEL 4, TERM-II

Ser	Course No	Course Name	Type of course	Contact hours	Credits
1	EECE 409	Communication Theory II	Theory	3.0	3.0
2	GEEM 435	Engineering Ethics and Moral Philosophy	Theory	2.0	2.0
3	GEPM 465	Project Management and Finance	Theory	2.0	2.0
4	EECE 4 **	Elective III	Theory	3.0	3.0
5	EECE 4 **	Elective IV	Theory	3.0	3.0
6	EECE 4 **	Elective V	Theory	3.0	3.0
		Subtotal (Theory)		**16.0**	**16.0**
7	EECE 400	Final Year Design and Research/ Capstone Project		6.0	3.0
8	EECE 4 **	Elective III Laboratory	Sessional	3.0	1.5
Subtotal (Sessional)				**9.0**	**4.5**
Total = Contact hours : 25.0 ; Credits : 20.5					

List of Elective Courses Power

Ser	Course Code	Course Name	Level	Contact Hour	Credit Hour
1	EECE 471	Power System II	4-I/ 4-II	3.0	3.0
2	EECE 405	Solid State Devices	4-I/ 4-II	3.0	3.0
3	EECE 477	Power System Protection	4-II	3.0	3.0
4	EECE 478	Power System Protection Laboratory	4-II	3.0	1.5
5	EECE 483	High Voltage Engineering	4-II	3.0	3.0
6	EECE 484	High Voltage Engineering Laboratory	4-II	3.0	1.5
7	EECE 479	Power System Reliability	4-I/ 4-II	3.0	3.0
8	EECE 481	Power System Operation and Control	4-I/ 4-II	3.0	3.0
9	EECE 485	Electrical Machines III / Energy Conversion III	4-I/ 4-II	3.0	3.0

Electronics

Ser	Course Code	Course Name	Level	Contact Hour	Credit Hour
1	EECE 451	Processing and Fabrication Technology	4-I/ 4-II	3.0	3.0
2	EECE 453	Analog Integrated Circuits	4-I/ 4-II	3.0	3.0
3	EECE 455	Compound Semiconductor and Hetero-junction Devices	4-I/ 4-II	3.0	3.0
4	EECE 457	VLSI II	4-II	3.0	3.0
5	EECE 458	VLSI II Laboratory	4-II	3.0	1.5
6	EECE 459	Optoelectronics	4-I/ 4-II	3.0	3.0
7	EECE 461	Semiconductor Device Theory	4-I/ 4-II	3.0	3.0
8	EECE 463	Introduction to Nanotechnology	4-I/ 4-II	3.0	3.0
9	EECE 465	Semiconductor and Nano-scale Devices	4-I/ 4-II	3.0	3.0

Communication

Ser	Course Code	Course Name	Level	Contact Hour	Credit Hour
1	EECE 403	Telecommunication Engineering	4-I/ 4-II	3.00	3.00
2	EECE 433	Microwave Engineering	4-II	3.00	3.00
3	EECE 434	Microwave Engineering Laboratory	4-II	3.00	1.50
4	EECE 435	Optical Fiber Communication	4-I/ 4-II	3.00	3.00
5	EECE 437	Digital Communication	4-II	3.00	3.00
6	EECE 438	Digital Communication Laboratory	4-II	3.00	1.50
7	EECE 439	Mobile Cellular Communication	4-I/ 4-II	3.00	3.00
8	EECE 441	Random Signals and Processes	4-I/ 4-II	3.00	3.00
9	EECE 443	Satellite Communication	4-II	3.00	3.00
10	EECE 444	Satellite Communication Laboratory	4-II	3.00	1.50
11	EECE 445	Communications Network	4-II	3.00	3.00
12	EECE 446	Communications Network Laboratory	4-II	3.00	1.50

Interdisciplinary

Ser	Course Number	Course Name	Level	Contact Hour	Credit Hour
1	EECE 421	Control System II	4-II	3.00	3.00
2	EECE 422	Control System II Laboratory	4-II	3.00	1.50
3	EECE 423	Numerical Methods	4-II	3.00	3.00
4	EECE 424	Numerical Methods Laboratory	4-II	3.00	1.50
5	EECE 425	Biomedical Instrumentation	4-II	3.00	3.00
6	EECE 426	Biomedical Instrumentation Laboratory	4-II	3.00	1.50
7	EECE 429	Radar Engineering	4-II	3.00	3.00
8	EECE 430	Radar Engineering Laboratory	4-II	3.00	1.50
9	EECE 491	Sonar and Underwater Engineering	4-II	3.00	3.00
10	EECE 492	SonarandUnderwaterEngineering Laboratory	4-II	3.00	1.50
11	EECE 493	Electronic Warfare	4-II	3.00	3.00
12	EECE 494	Electronic Warfare Laboratory	4-II	3.00	1.50
13	EECE 495	Avionics Engineering	4-II	3.00	3.00
14	EECE 496	Avionics Engineering Laboratory	4-II	3.00	1.50
15	EECE 497	Biomedical Signal Processing	4-II	3.00	3.00
16	EECE 498	BiomedicalSignalProcessingLaboratory	4-II	3.00	1.50
17	CSE491	IntroductiontoEmbeddedSystems	4-II	3.00	3.00
18	CSE492	IntroductiontoEmbeddedSystems Laboratory	4-II	3.00	1.50

SYLLABUS FOR BACHELOR DEGREE IN ME

5. Term Wise Distribution of Courses for BSc in Mechanical Engineering (ME)

LEVEL - 1, TERM - I

Ser	Course No	Course Name	Type of Course	Contact hours	Credit Hours
1	ME 161	Introduction to Mechanical Engineering	Theory	3.00	3.00
2	ME 103	Thermodynamics	Theory	3.00	3.00
3	EECE159	Fundamentals of Electrical Engineering	Theory	3.00	3.00
4	PHY 101	Physics (Waves and Oscillations, Optics and Modern Physics)	Theory	3.00	3.00
5	MATH101	Differential and Integral Calculus	Theory	3.00	3.00
				15.00	**15.00**
6	PHY 102	Physics Sessional	Sessional	3.00	1.50
7	ME 104	Thermodynamics Sessional	Sessional	3.00	1.50
8	SHOP162	Workshop Practice Sessional	Sessional	3.00	1.50
				9.00	**4.50**
Contact hours: **24.00**; Credit hours: **19.50**					

LEVEL - 1, TERM - II

Ser	Course No	Course Name	Type of Course	Contact hours	Credit Hours
1	ME 193	Engineering Materials	Theory	3.00	3.00
2	CHEM101	Fundamentals of Chemistry	Theory	3.00	3.00
3	MATH103	Differential Equations and Matrix	Theory	3.00	3.00
4	EECE 173	Electrical and Electronics Technology	Theory	3.00	3.00
5	GEBS101	Bangladesh Studies	Theory	2.00	2.00
				14.00	**14.00**
6	CHEM102	Chemistry Sessional	Sessional	3.00	1.50
7	LANG102	Communicative English I	Sessional	3.00	1.50
8	ME 194	Engineering Materials Sessional	Sessional	3.00	1.50
9	EECE174	Electrical and Electronics Technology Sessional	Sessional	3.00	1.50
				12.00	**6.00**
Contact hours: **26.00**; Credit hours: **20.00**					

LEVEL - 2, TERM - I

Ser	Course No	Course Name	Type of course	Contact hours	Credit hours
1	CSE 275	Computer Programming Language	Theory	3.00	3.00
2	ME 245	Engineering Mechanics-I	Theory	3.00	3.00
3	MATH201	Vector Analysis, Laplace Transform& Co-ordinate Geometry	Theory	3.00	3.00
4	ME 205	Heat and Mass Transfer	Theory	3.00	3.00
5	GES307	Fundamentals of Sociology	Theory	2.00	2.00
				14.00	**14.00**
6	CSE 276	Computer Programming Language Sessional	Sessional	3.00	1.50
7	ME 258	Mechanical Engineering Drawing –I	Sessional	3.00	1.50
8	ME 206	Heat and Mass Transfer Sessional	Sessional	3.00	1.50
9	LANG202	Communicative English II	Sessional	3.00	1.50
				12.00	**6.00**
Contact hours: **26.00**; Credit hours: **20.00**					

LEVEL - 2, TERM - II

Ser	Course No	Course Name	Type of course	Contact hours	Credit hours
1	ME 247	Engineering Mechanics - II	Theory	3.00	3.00
2	ME 233	Manufacturing Technology	Theory	3.00	3.00
3	ME 207	Heat Transfer Equipment Design	Theory	3.00	3.00
4	MATH265	Complex Variable, Harmonic Function and Fourier Analysis	Theory	3.00	3.00
5	ME 263	Numerical Analysis	Theory	3.00	3.00
				15.00	**15.00**
6	ME 234	Manufacturing Technology Sessional	Sessional	3.00	1.50
7	ME 264	Numerical Analysis Sessional	Sessional	3.00	1.50
8	ME 260	Mechanical Engineering Drawing –II	Sessional	3.00	1.50
				9.00	**4.50**
Contact hours: **24.00**; Credits hours: **19.50**					

LEVEL - 3, TERM - I

Ser	Course No	Course Name	Type of course	Contact hours	Credit hours
1	ME 361	Instrumentation and Measurement	Theory	2.00	2.00
2	ME 343	Mechanics of Solids	Theory	3.00	3.00
3	ME 375	Control Engineering	Theory	2.00	2.00
4	ME 303	Power plant Engineering	Theory	3.00	3.00
5	ME 321	Fluid Mechanics-I	Theory	3.00	3.00
6	GEE 305	Fundamentals of Economics	Theory	2.00	2.00
				15.00	**15.00**
7	ME 344	Mechanics of Solids Sessional	Sessional	3.00	1.50
8	ME 376	Control Engineering Sessional	Sessional	3.00	1.50
9	ME 304	Power plant Engineering Sessional	Sessional	3.00	1.50
10	GERM 352	Fundamentals of Research Methodology	Sessional	4.00	2.00
				13..00	**6.50**
Contact hours: **28.00;** Credit hours: **21.50**					

LEVEL - 3, TERM - II

	Course No	Course Name	Type of course	Contact hours	Credit hours
1	ME 345	Mechanics of Machinery	Theory	3.00	3.00
2	ME 323	Fluid Mechanics-II	Theory	2.00	2.00
3	ME 341	Machine Design	Theory	3.00	3.00
4	ME 367	Automobile Engineering	Theory	3.00	3.00
5	GELM 275	Leadership and Management	Theory	2.00	2.00
				13.00	**13.00**
6	ME 324	Fluid Mechanics Sessional	Sessional	3.00	1.50
7	ME 346	Mechanics of Machinery Sessional	Sessional	3.00	1.50
8	ME 368	Automobile Engineering Sessional	Sessional	3.00	1.50
9	ME 366	Engineering Simulation	Sessional	2.00	1.00
10	ME 372*	Industrial Training	Training	4 weeks	1.00
				11 Hr + 4 weeks	**6.50**
Contact hours: **24.00 + 04** Weeks; Credit hours: **19.50**					

* Will be conducted after the completion of Level- 3, at any convenient time as can be arranged by the Department.

LEVEL - 4, TERM - I

Ser	Course No	Course Name	Type of course	Contact hours	Credit hours
1	GEPM 467	Project Management & Finance	Theory	2.00	2.00
2	ME 421	Fluid Machinery	Theory	3.00	3.00
3	ME 401	IC Engine	Theory	3.00	3.00
4	ME 405	Heating, Ventilation and Air conditioning	Theory	3.00	3.00
5	Optional I[1]	Selected from prescribed optional subjects	Theory	3.00	3.00
6	Optional II[1]	Selected from prescribed optional subjects	Theory	3.00	3.00
				17.00	**17.00**
7	ME 402	IC Engine Sessional	Sessional	3.00	1.50
8	ME 400	Final Year Design and Research Project - I	Sessional	6.00	3.00
				9.00	**4.50**
Contact hours: **26.00**; Credit hours: **21.50**					

LEVEL - 4, TERM - II

Ser	Course No	Course Name	Type of course	Contact hours	Credit hours
1	ME 445	Noise and vibration	Theory	3.00	3.00
2	GESL 407	Environment, Sustainability and Law	Theory	2.00	2.00
3	GEEM 437	Engineering Ethics & Moral Philosophy	Theory	2.00	2.00
4	IPE 463	CAD/CAM	Theory	2.00	2.00
5	Optional III[2]	Selected from prescribed optional subjects	Theory	3.00	3.00
6	Optional IV[2]	Selected from prescribed optional subjects	Theory	3.00	3.00
				15.00	**15.00**
7	IPE 464	CAD/CAM Simulation sessional	Sessional	3.00	1.50
8	ME 400	Final Year Design and Research Project - II	Sessional	6.00	3.00
				9.00	**4.50**
	Contact hours: **24.00;** Credit hours: **19.50**				

List of Elective Courses

Ser	Course No	Course Name	Level-Term	Contact Hours	Credit Hours
1	ME 407	Advanced Thermodynamics	4-I or 4-II	3.0	3.00
2	ME 409	Renewable Energy	4-I or 4-II	3.0	3.00
3	ME 411	Combustion and Pollution	4-I or 4-II	3.0	3.00
4	ME 413	Energy and Environment	4-I or 4-II	3.0	3.00
5	ME 415	Advanced Programming with MATLAB	4-I or 4-II	3.0	3.00
6	ME 417	Multiphase Flows	4-I or 4-II	3.0	3.00
7	ME 419	Introduction to Nanomaterials and Nanotechnology	4-I or 4-II	3.0	3.00
8	ME 423	Fluid Engineering	4-I or 4-II	3.0	3.00
9	ME 425	Aerodynamics	4-I or 4-II	3.0	3.00
10	ME 427	Applied Engineering Mathematics	4-I or 4-II	3.0	3.00
11	ME 429	Gas Dynamics	4-I or 4-II	3.0	3.00
12	ME 431	Finite Element Method	4-I or 4-II	3.0	3.00
13	ME 433	Fluid Power and Control	4-I or 4-II	3.0	3.00
14	ME 435	Introduction to CFD	4-I or 4-II	3.0	3.00
15	ME 437	Design of Fluid Machines	4-I or 4-II	3.0	3.00
16	ME 439	Biomedical Fluid Mechanics	4-I or 4-II	3.0	3.00
17	ME 441	Theory of Structures	4-I or 4-II	3.0	3.00
18	ME 447	Robotics	4-I or 4-II	3.0	3.00
19	ME 449	Composite Materials	4-I or 4-II	3.0	3.00
20	ME 451	Aircraft & Aero-engine Structure	4-I or 4-II	3.0	3.00
21	ME 453	Applied Aerodynamics	4-I or 4-II	3.0	3.00
22	ME 455	Fire Safety and Engineering	4-I or 4-II	3.0	3.00

23	ME 459	Preventive Maintenance	4-I or 4-II	3.0	3.00
24	ME 463	Petroleum Engineering	4-I or 4-II	3.0	3.00
25	ME 465	Automotive Chassis Engineering	4-I or 4-II	3.0	3.00
26	ME 467	Autotronics	4-I or 4-II	3.0	3.00
27	ME 469	Vehicle Dynamics	4-I or 4-II	3.0	3.00
28	ME 471	Bio-Engineering	4-I or 4-II	3.0	3.00
29	ME 473	Plastic Process Technology	4-I or 4-II	3.0	3.00
30	ME 475	Modern Manufacturing Technology	4-I or 4-II	3.0	3.00
31	ME 477	Metal Cutting Processes	4-I or 4-II	3.0	3.00
32	ME 479	Occupational Health and safety engineering	4-I or 4-II	3.0	3.00
33	ME 483	Standards and inspection	4-I or 4-II	3.0	3.00
34	ME 485	Introduction to Nuclear Engineering	4-I or 4-II	3.0	3.00
35	ME 487	Tools Engineering	4-I or 4-II	3.0	3.00
36	ME 489	Automobile Maintenance Engineering	4-I or 4-II	3.0	3.00
37	ME 491	Mems Devices - Design and Fabrication	4-I or 4-II	3.0	3.00
38	ME 493	Material Handling	4-I or 4-II	3.0	3.00
39	ME 495	Mechatronics	4-I or 4-II	3.0	3.00
40	ME 497	Textile Technology	4-I or 4-II	3.0	3.00
41	ME 499	Weapon Engineering	4-I or 4-II	3.0	3.00

SYLLABUS FOR BACHELOR DEGREE IN IPE

6. Term Wise Distribution of Courses for BSc in Industrial and Production Engineering (IPE)

Level - 1, Term - I

Ser	Course No	Course Title	Contact Hour	Credit Hour
1	IPE 101	Introduction to Industrial and Production Engineering	3	3.00
2	MATH 101	Differential and Integral Calculus	3	3.00
3	CHEM 101	Fundamentals of Chemistry	3	3.00
4	PHY 101	Waves & Oscillations, Optics and Modern Physics	3	3.00
5	GES 101	Fundamentals of Sociology	2	2.00
	Total Theoretical		**14**	**14.00**
6	PHY 102	Physics Sessional	3	1.50
7	SHOP 172	Machine Shop Practice	2	1.00
8	CHEM 102	Chemistry Sessional	3	1.50
	Total Sessional		**8**	**4.00**
Grand Term Total			**22.00**	**18.00**

Level - 1, Term - II

Ser	Course No	Course Title	Contact Hour	Credit Hour
1	MATH 103	Differential Equations and Matrix	3	3.00
2	IPE 105	Engineering Materials	3	3.00
3	EECE 171	Basic Electrical & Electronic Circuit	3	3.00
4	GEA 101	Principles of Accounting	2	2.00
5	GEBS 101	Bangladesh Studies	2	2.00
	Total Theoretical		**13**	**13.00**
6	ME 160	Engineering Drawing	3	1.50
7	LANG 102	Communicative English I	3	1.50
8	EECE 172	Basic Electrical & Electronic Circuit Sessional	1.50	0.75
9	IPE 106	Engineering Materials Sessional	3	1.50
	Total Sessional		**10.5**	**5.25**
Grand Term Total			**23.5**	**18.25**

Level - 2, Term - I

Ser	Course No.	Course Title	Contact Hour	Credit Hour
1	MATH 201	Vector Analysis, Laplace Transformation & Co-ordinate Geometry	3	3.00
2	EECE 271	Electrical Machines and Electronics	3	3.00
3	CSE 281	Computer Programming	3	3.00
4	IPE 201	Manufacturing Processes I	3	3.00
5	GELM 275	Leadership and Management	2	2.00
6	IPE 207	Engineering Economy	3	3.00
	Total Theoretical		**17**	**17.00**
7	EECE 272	Electrical Machines and ElectronicsSessional	1.50	0.75
8	CSE 282	Computer Programming Sessional	3	1.50
9	IPE 202	Manufacturing Processes I Sessional	1.5	0.75
10	IPE 200	Engineering Graphics and CAD Sessional	3	1.50
11	LANG 202	Communicative English II	3	1.50
	Total Sessional		**12.0**	**6.0**
	Grand Term Total		**29.0**	**23.00**

Level - 2, Term - II

Ser	Course No.	Course Title	Contact Hour	Credit Hour
	IPE 203	Manufacturing Process II	3	3.00
	IPE 205	Probability and Statistics	3	3.00
	IPE 243	Mechanics of Solids	3	3.00
	IPE 251	Thermodynamics and Heat Transfer	3	3.00
	MATH 215	Numerical Analysis	3	3.00
	IPE 271	Engineering Mechanics and Mechanics of Machinery	3	3.00
	Total Theoretical		**18**	**18.00**
	IPE 204	Manufacturing Processes II Sessional	1.5	0.75
	IPE 206	Probability and Statistics Sessional	1.5	0.75
	IPE 244	Mechanics of Solids Sessional	1.5	0.75
	IPE 252	Thermodynamics and Heat Transfer Sessional	1.5	0.75
	Total Sessional		**6.0**	**3.00**
	Grand Term Total		**24.0**	**21.00**

Level - 3, Term - I

Ser	Course No.	Course Title	Contact Hour	Credit Hour
1	IPE 351	Fluid Mechanics & Machinery	3	3.00
2	IPE 301	Measurement, Instrumentation andControl	3	3.00
3	IPE 303	Product Design I	3	3.00
4	IPE 305	Operations Research	4	4.00
5	GEEM 343	Engineering Ethics and MoralPhilosophy	2	2.00
6	GESL 313	Environment, Sustainability and Law	2	2.00
	Total Theoretical		**17**	**17.00**
7	IPE 352	Fluid Mechanics & Machinery Sessional	1.5	0.75
8	IPE 302	Measurement, Instrumentation and Control Sessional	1.5	0.75
9	IPE 306	Operations Research Sessional	1.5	0.75
10	GERM 352	Fundamentals of ResearchMethodology	4	2.00
	Total Sessional		**8.5**	**4.25**
Grand Term Total			**25.5**	**21.25**

Level - 3, Term - II

Ser	Course No.	Course Title	Contact Hour	Credit Hour
1	IPE 309	Material Handling and MaintenanceManagement	3	3.00
2	IPE 311	Operations Management	3	3.00
3	IPE 313	Quality Management	3	3.00
4	IPE 315	Entrepreneurship Development and Micro Industries	2	2.00
5	IPE 317	Ergonomics and Safety Management	3	3.00
6	IPE 307	Product Design II	3	3.00
	Total Theoretical		**17**	**17.00**
7	IPE 308	Product Design Sessional	1.5	0.75
8	IPE 310	Material Handling and MaintenanceManagement Sessional	1.5	0.75
9	IPE 314	Quality Management Sessional	1.5	0.75
10	IPE 318	Ergonomics and Safety Management	1.5	0.75
11	IPE 320	Industrial Practice	4 Weeks	1.00
	Total Sessional		**6**	**4.00**
Grand Term Total			**23**	**21.00**

Level - 4, Term - I

Ser	Course No.	Course Title	Contact Hour	Credit Hour
1	IPE 421	Machine Tools	3	3.00
2	IPE 419	Modeling and Simulation	3	3.00
3	IPE 415	Project Management	3	3.00
4	IPE ---	Optional I	3	3.00
5	IPE ---	Optional II	3	3.00
	Total Theoretical		**15**	**15.00**
6	IPE 400	Final Year Design & Research ProjectI	6	3.00
7	IPE 420	Modeling and Simulation Sessional	1.5	0.75
8	IPE 422	Machine Tools Sessional	3	1.50
9	IPE 450	Business Communication Seminar	1.5	0.75
	Total Sessional		**12**	**6.00**
Grand Term Total			**27**	**21.00**

Level – 4, Term - II

	Course No.	Course Title	Contact Hour	Credit Hour
	IPE 405	Supply Chain Management	3	3.00
	IPE 411	CAD/CAM	3	3.00
	IPE ---	Optional III	3	3.00
	IPE ---	Optional IV	3	3.00
	Total Theoretical		**12**	**12.00**
	IPE 400	Final Year Design & Research ProjectII	6	3.00
	IPE 412	CAD/CAM Sessional	1.5	0.75
	IPE 418	Mechatronics and IndustrialAutomation Sessional	1.5	0.75
	Total Sessional		**9**	**4.50**
	Grand Term Total		**21**	**16.50**

The grand total credit hours required for the degree of B.Sc. in Industrial and Production Engineering is **160.00**.

List of Optional Courses

Ser	Course No.	Course Title	Contact Hour	Credit Hour
	Optional I			
1	IPE 447	Advanced Material & Process	3	3.00
2	IPE 425	Marketing Management	3	3.00
3	IPE 441	Modern Manufacturing Process	3	3.00
4	IPE 433	Production Planning and Control	3	3.00
5	IPE 445	Machine Learning	3	3.00
	Optional II			
6	IPE 431	Computer Integrated Manufacturing	3	3.00
7	IPE 429	Organizational Behavior	3	3.00
8	IPE 439	Green Manufacturing	3	3.00
9	IPE 427	Control Engineering	3	3.00
10	IPE 453	Data Analytics	3	3.00
	Optional III			
11	IPE 417	Industrial Automation	3	3.00
12	IPE 423	Robotics	3	3.00
13	CSE 403	Artificial Intelligence	3	3.00
14	IPE 437	Mechatronics	3	3.00
	Optional IV			
15	IPE 449	Industrial Fire Safety	3	3.00
16	IPE 451	Micromanufacturing	3	3.00
17	IPE 435	Metal Cutting	3	3.00
18	IPE 443	Total Quality Management	3	3.00

List of Courses Offered to Other Departments

Ser	Course No	CourseTitle	Contact Hour	Credit Hour
1	GELM 275	Leadership and Management	2	2.00
2	IPE 351	Production Process	4	4.00
3	IPE 352	Production Process Sessional	1.5	0.75

4	IPE 353	Measurement and Quality Control	3	3.00
5	IPE 354	Measurement and Quality Control sessional	1.5	0.75
6	IPE 411	CAD/CAM	3	3.00
7	IPE 433	Production Planning and control	3	3.00
8	IPE 435	Metal Cutting Process	3	3.00
9	IPE 441	Modern Manufacturing Process	3	3.00
10	IPE 455	Machine Tools & Machining	3	3.00
11	IPE 456	Machine Tools & Machining Sessional	1.5	0.75
12	IPE 481	Industrial Management	4	4.00
13	IPE 485	Operations Research	3	3.00
14	IPE 487	Material Handling	3	3.00