Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Applied Electronics and Instrumentation Engineering (AEIE)
(Applicable from the academic session 2018-2019)

Course Structure

SI No	Category	Code	Course Title	L	T	P	Total	Credit Points
Second Year Third Semester								
Theory								
				Contact hrs/wk				
1	Basic Science Courses	BS-M301	Mathematics –III (Probability, Transformations and Numerical Methods)	2	1	0	3	3
2	Professional Core Courses	PC-EI301	Network Analysis	3	0	0	3	3
3	Professional Core Courses	PC-EI302	Sensors and Transducers	3	0	0	3	3
4	Professional Core Courses	PC-EI303	Analog Integrated Circuit	3	0	0	3	3
5	Professional Core Courses	PC-EI304	Digital Electronic Circuits	3	0	0	3	3
6	Mandatory Courses	MC-ES301	Environmental Science	2	0	0	2	
		Total Theory						15
Practical								
1	Professional Core Courses	PC-EI391	Circuits and Network Lab	0	0	3	3	1.5
2	Professional Core Courses	PC-EI392	Sensors and Transducers Lab	0	0	3	3	1.5
3	Professional Core Courses	PC-EI393	Analog Circuits Design Lab	0	0	3	3	1.5
4	Professional Core Courses	PC-EI394	Digital Circuits Design Lab	0	0	3	3	1.5
		Total Practical						6
		Total of Third Semester						21

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Second Year Fourth Semester								
Theory								
Sl No	Category	Code	Course Title	Contact hrs/wk				Credit Points
				L	T	P	Total	
1	Professional Core Courses	PC-EI401	Electrical & Electronic Measurement	3	0	0	3	3
2	Professional Core Courses	PC-EI402	Industrial Instrumentation	3	0	0	3	3
3	Professional Core Courses	PC-EI403	Microprocessor and Microcontroller	3	1	0	4	4
4	Engineering Science Courses	ES-CS401	Data Structure and algorithm	3	0	0	3	3
5	Basic Science Courses	BS-BIO401	Biology	3	0	0	3	3
6	Humanities and Social Sciences including Management Courses	HM-HU401	Values and Ethics in Profession	2	0	0	2	2
Total Theory								18
Practical								
1	Professional Core Courses	PC-EI491	Electrical & Electronic Measurement Lab	0	0	3	3	1.5
2	Professional Core Courses	PC-EI492	Microprocessor and Microcontroller Lab	0	0	3	3	1.5
3	Engineering Science Courses	ES-CS491	Data Structure and algorithm Lab	0	0	3	3	1.5
4	Humanities and Social Sciences including Management Courses	HM-HU481	Advanced Language Lab	0	0	2	2	1
Total Practical								5.5
Total of Fourth Semester								23.5

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\<td colspan=9>**Third Year Fifth Semester**								
Theory								
Sl No	**Category**	**Code**	**Course Title**	**Contact hrs/wk**				**Credit Points**
				L	**T**	**P**	**Total**	
1	Professional Core Courses	PC-EI501	Control System	3	0	0	3	3
2	Professional Core Courses	PC-EI502	Communication Techniques	3	0	0	3	3
3	Professional Core Courses	PC-EI503	Electromagnetic Theory	3	0	0	3	3
4	Professional Elective Courses-I	PE-EI501/ PE-EI502	Optical Instrumentation/Introduction to MEMS	3	0	0	3	3
5	Professional Elective Courses-II	PE-EI503/ PE-EI504	Embedded System/Power Electronics & Drives	3	0	0	3	3
6	Open Elective Courses-I	OE-EI501/ OE-EI502	Object Oriented Programming Language/Data Base Management System	3	0	0	3	3
Total Theory								18
Practical								
1	Professional Core Courses	PC-EI591	Control System Lab	0	0	3	3	1.5
2	Open Elective Courses -I	OE-EI591/OE-EI592	Object Oriented Programming Language Lab/Data Base Management System Lab	0	0	3	3	1.5
3	Professional Core Courses	PC-EI592	Industrial Instrumentation Lab	0	0	3	3	1.5
4	Seminar	EI581	Seminar	0	0	4	4	2
Total Practical								6.5
Total of Fifth Semester								24.5

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Sl No	Category	Code	Course Title	Contact hrs/wk				Credit Points
Third Year Sixth Semester								
Theory								
				L	T	P	Total	
1	Professional Core Courses	PC-EI601	Process Control	3	0	0	3	3
2	Professional Core Courses	PC-EI602	Biomedical Instrumentation	3	0	0	3	3
3	Open Elective Courses-II	OE-EI601/ OE-EI602	Internet of Things(IoT)/Artificial Intelligence(AI)	3	0	0	3	3
4	Open Elective Courses-III	OE-EI603/ OE-EI604	Digital signal Processing /Soft Computing Techniques	3	0	0	3	3
5	Humanities and Social Sciences including Management Courses	HM-HU601	Economics for Engineers	2	0	0	2	2
6	Mandatory Courses	MC-ES601	Indian Constitution and Cultures	1	0	0	1	
Total Theory								14
Laboratory								
1	Professional Core Courses	PC-EI691	Process Control Lab	0	0	3	3	1.5
2	Professional Core Courses	PC-EI692	Instrumentation System Design Lab	0	0	3	3	1.5
3	Open elective -II	OE-EI691/ OE-EI692	Internet of Things Lab(IoT)/Artificial Intelligence Lab(AI)	0	0	3	3	1.5
Total Practical								4.5
Total of Sixth Semester								18.5

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\multicolumn{9}{c} Fourth Year Seventh Semester								
Theory								
Sl No	Category	Code	Course Title	Contact hrs/wk				Credit Points
				L	T	P	Total	
1	Professional Elective Courses-III	PE-EI701/ PE-EI702	Mechatronics & Robotics/Digital Control System	3	0	0	3	3
2	Professional Elective Courses-IV	PE-EI703/ PE-EI704	Analytical Instrumentation/ Non Destructive Testing	3	0	0	3	3
3	Open Elective Courses-IV	OE-EI701/ OE-EI702	Telemetry & wireless Sensor Network/Non-Conventional Energy System	3	0	0	3	3
4	Engineering Science Courses	ES-CS701	Computer Networks	3	0	0	3	3
Total Theory								12
Practical								
1	Project Stage-I	PW-EI791	Project I	0	0	8	8	4
2	Industrial Training	EI781	Industrial Training Evaluation	0	0	2	2	1
Total Practical								5
Total of Seventh Semester								17

Fourth Year Eighth Semester								
Theory								
Sl No	Category	Code	Course Title	Contact hrs/wk				Credit Points
				L	T	P	Total	
1	Professional Elective Courses-V	PE-EI801/ PE-EI802	Power Plant Instrumentation/Nano Electronics	3	0	0	3	3
2	Open Elective Courses-V	OE-EI801/ OE-EI802	Digital Image Processing /Big Data Analysis	3	0	0	3	3
3	Humanities and Social Sciences including Management Courses	HM-HU801	Project Management & Entrepreneurship	2	0	0	2	2
Total Theory								8
Practical								
1	Project Stage-I	PW-EI881	Project II	0	0	16	16	8
2	Grand Viva	EI882	Grand Viva-Voce					1.5
Total Practical								9.5
Total of Eighth Semester								17.5

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Sl No	Category	Suggested Breakup of Credits (total 160)	
		Dept. of AEIE	**As per AICTE**
1	Humanities and Social Science including Management courses	10	**12**
2	Basic Science Courses	25	**25**
3	Engineering Science Courses including workshop, drawing basic of electrical/mechanical/computer etc.	23.5	**24**
4	Professional Core Courses	52	**48**
5	Professional Elective Courses relevant to chosen specialization/branch	15	**18**
6	Open subjects-Elective from other technical or emerging subject	18	**18**
7	Project work ,seminar and internship in industry or elsewhere	16.5	**15**
8	Mandatory Courses [Environmental Sciences, Induction Program, Indian Constitution, Essence of Indian Traditional Knowledge]		**(non-credit)**
	Total	160	**160**

❖ Minor variation is allowed as per need of the respective disciplines.