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

Second Year Third Semester

Sl. No.	Category	Subject Code	Subject Name	L	T	P	Credits
				Total Number of contact hours			
Theory							
1	Basic science Courses	BS-CS301	Numerical Methods	2	1	0	3
2	Professional Core Courses	PC-IC301	Electric Circuit Theory	3	0	0	3
3	Professional Core Courses	PC-IC302	Analog Integrated circuits	3	0	0	3
4	Professional Core Courses	PC-IC303	Digital Electronic Circuits	3	0	0	3
5	Engineering Science Courses	ES-CS301	Data Structure and algorithm	3	0	0	3
6	Mandatory Courses	MC-ES301	Environmental Science	2	0	0	0
			Total Theory				**15**
Practical							
1	Professional core Courses	PC-IC391	Electric Circuit Lab	0	0	3	1.5
2	Professional core Courses	PC-IC392	Analog circuits Design Lab	0	0	3	1.5
3	Professional core Courses	PC-IC393	Digital Circuits Design Lab	0	0	3	1.5
4	Engineering Science Courses	ES-CS391	Data Structure and algorithm Lab	0	0	3	1.5
			Total Practical				**6**
			Total of Third Semester				**21**

Second Year Fourth Semester

Sl. No.	Category	Subject Code	Subject Name	L	T	P	Credits
				Total Number of contact hours			
Theory							
1	Professional Core Courses	PC-IC401	Electrical &Electronic Measurement	3	0	0	3
2	Professional Core Courses	PC-IC402	Sensor & Transducer	3	0	0	3
3	Professional Core Courses	PC-IC403	Microprocessor and Microcontroller	3	0	0	3
4	Professional Core Courses	PC-IC404	Control System I	3	0	0	3
5	Basic Science Courses	BSC-401	Biology	3	0	0	3
6	Humanities and	HM-	Values and Ethics in Profession	2	0	0	2

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	Social Sciences including Management Courses	HU401					
	Total Theory						**17**

Practical

1	Professional core Courses	PC-IC491	Electrical &Electronic Measurement Lab	0	0	3	1.5
2	Professional core Courses	PC-IC492	Sensor & Transducer	0	0	3	1.5
3	Professional core Courses	PC-IC493	Microprocessor and Microcontroller Lab	0	0	3	1.5
4	Professional core Courses	PC-IC494	Control system I Lab	0	0	3	1.5
	Total Practical						**6**
	Total of Fourth Semester						**23**

Third Year Fifth Semester							
Sl No.	Category	Subject Code	Subject Name	**Total Number of contact hours**			Credits
				L	T	P	

Theory

1	Professional Core Courses	PC-IC501	Industrial Instrumentation	3	0	0	3
2	Professional Core Courses	PC-IC502	Digital Signal Processing	3	0	0	3
3	Professional Core Courses	PC-IC503	Control System II	3	0	0	3
4	Professional Elective Courses-1	PE-IC501/PE-IC502	Optical Instrumentation/Introduction to MEMS	3	0	0	3
5	Open Elective Courses-1	OE-IC501/OE-IC502	Embedded System/DBMS	3	0	0	3
6	Humanities and Social Sciences including Management Courses	HM-HU501	Economics for Engineers	3	0	0	3
	Total Theory						**18**

Practical/ Sessional

1	Professional core Courses	PC-IC591	Industrial Instrumentation Lab	0	0	3	1.5
2	Professional core Courses	PC-IC592	Control System II	0	0	3	1.5
3	Open Elective-1	OE-IC591/OE-	Embedded System/DBMS Lab	0	0	3	1.5

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		IC592					
4	Seminar	IC581	Seminar				1.5
			Total Practical				**6**
			Total of Fifth Semester				**24**

Third Year Sixth Semester

Sl No.	Category	Subject Code	Subject Name	Total Number of contact hours			Credits
				L	**T**	**P**	
Theory							
1	Professional Core Courses	PC-IC601	Process control	3	0	0	3
2	Professional Core Courses	PC-IC602	Data Communication and Telemetry	3	0	0	3
3	Professional Core Courses	PC-IC603	Biomedical Instrumentation	3	0	0	3
4	Professional Elective Courses-2	PE-IC601/PE-IC602	Power Electronics & Drivers/Microelectronics and VLSI Technology	3	0	0	3
5	Open Elective Courses-2	OE-IC601/OE-IC602	IOT/Artificial Intelligence	3	0	0	3
6	Mandatory Courses	MC-ES601	Indian Constitution and culture	1	0	0	
			Total Theory				**15**
Practical/ Sessional							
1	Professional core Courses	PC-IC691	Process control Lab	0	0	3	1.5
2	Professional core Courses	PC-IC692	Instrumentation system Design Lab	0	0	3	1.5
3	Open Elective 2	OE-IC691/OE-IC692	IOT Lab/AI lab	0	0	3	1.5
			Total Practical				**4.5**
			Total of Sixth Semester				**19.5**

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Sl No.	Category	Subject Code	Subject Name	L	T	P	Credits
			Fourth Year Seventh Semester				
Theory							
1	Professional Elective Courses-3	PE-IC701/PE-IC702	Control System Design/Robotics and automation	3	0	0	3
2	Professional Elective Courses-4	PE-IC703/PE-IC704	Analytical Instrumentation/ Digital control system	3	0	0	3
3	Open Elective Courses-3	OE-IC701/OE-IC702	Non-Convectional Energy System/Non-destructive testing	3	0	0	3
4	Engineering Courses	ES-CS701	Computer Networks	3	0	0	3
			Total Theory				**12**
Practical/ Sessional							
1	Project Stage-1	PW-IC791	Project I				4
2	Industrial Training	IC781	Industrial Training Evaluation				1
			Total Practical				**5**
			Total of Seventh Semester				**17**
			Fourth Year Eighth Semester				
Theory							
1	Professional Elective Courses-5	PE-IC801/PE-IC802	Power Plant Instrumentation/Nano Electronics	3	0	0	3
2	Open Elective Courses-4	OE-IC801/OE-IC802	Logic and Distributed control systems /Smart and Wireless instrumentation	3	0	0	3
3	Humanities and Social sciences including Management Courses	HM-HU801	Management Concept and Practice	2	0	0	2
			Total Theory				**8**
Practical/ Sessional							
1	Project Stage-1	PW-IC881	Project II				8
2	Grand Viva	IC882	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 (Dept. of ICE)	Suggested Breakup of Credits (160) (As per AICTE)
1	Humanities and Social sciences including Management Courses	10	12
2	Basic Science course	22	25
3	Engineering Science courses	23.5	24
4	Professional core Courses	55.5	48
5	Professional Elective Courses	15	18
6	Open Elective Courses	18	18
7	Project work Seminar and internship in industry	16	15
8	Mandatory Courses		(NON-CREDIT)
	TOTAL	160	160