

**13. Courses of Study and Scheme of Assessment**  
**BE INSTRUMENTATION AND CONTROL ENGINEERING**

**(2019 Regulations)**

Course Code	Course Title	Periods / week			Maximum Marks				
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
<b>SEMESTER VII</b>									
19U701	Logic and Distributed Control System	3	0	0	3	50	50	100	PC
19U702	Analytical Instrumentation	3	0	0	3	50	50	100	PC
19U____	Professional Elective IV	3	0	0	3	50	50	100	PE
19U____	Professional Elective V	3	0	0	3	50	50	100	PE
19____	Open Elective I	3	0	0	3	50	50	100	OE
19U710	Industrial Automation Laboratory	0	0	2	1	50	50	100	PC
19U711	Industrial and Virtual Instrumentation Laboratory	0	0	2	1	50	50	100	PC
19U720	Project Work I	0	0	4	2	100	0	100	EEC
<b>Total 23 periods</b>		<b>15</b>	<b>0</b>	<b>8</b>	<b>19</b>	<b>450</b>	<b>350</b>	<b>800</b>	
<b>SEMESTER VIII</b>									
19U____	Professional Elective VI	3	0	0	3	50	50	100	PE
19____	Open Elective II	3	0	0	3	50	50	100	OE
19U820	Project Work II	0	0	8	4	100	0	100	EEC
<b>Total 14 periods</b>		<b>6</b>	<b>0</b>	<b>8</b>	<b>10</b>	<b>200</b>	<b>100</b>	<b>300</b>	
CA	Continuous Assessment								
FE	Final Examination								

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## PROFESSIONAL ELECTIVES

- 19U001 Biomedical Instrumentation
- 19U002 Fiber Optics and Laser Instrumentation
- 19U003 Instrumentation System Design
- 19U004 Power Plant Instrumentation
- 19U005 Instrumentation and Control in Petro Chemical Industries
- 19U006 Optimal and Adaptive Control Systems
- 19U007 System Identification
- 19U008 Industrial Chemical Processes
- 19U009 Applied Soft Computing
- 19U010 VLSI Design
- 19U011 Operating Systems
- 19U012 Robotics and Automation
- 19U013 Product Design and Development
- 19U014 Measurement Data Analytics
- 19U015 Advanced Digital Signal Processing
- 19U016 Digital Image Processing
- 19U017 Computer Architecture
- 19U018 Non Linear Systems Theory
- 19U019 Fundamentals of Pneumatics and Hydraulics
- 19U020 Safety Instrumented Systems
- 19U021 Smart Sensors and Actuators
- 19U022 Industrial Internet of Things
- 19U023 Non-Conventional Energy Systems

## ONE-CREDIT COURSES

### INSTRUMENTATION AND CONTROL SYSTEMS ENGINEERING

- 19UF01 Distributed Control System in Industries
- 19UF02 Advanced Industrial Automation Systems
- 19UF03 Marine Instrumentation and Systems
- 19UF04 Medical Image Analysis
- 19UF05 System Design and Implementation
- 19UF06 Calibration Techniques
- 19UF07 Motion Control Systems
- 19UF08 Electrical Metrology
- 19UF09 Standard Practices for Power Plant Instrumentation
- 19UF10 Automotive Instrumentation and Control
- 19UF11 Aircraft Instrumentation
- 19UF12 Automatic Flight Control System

### ENGLISH

- 19GF01 Interpersonal and Organizational Communication
- 19GF02 Human Values Through Literature

### HUMANITIES

- 19OFA1 Export – Import Practices
- 19OFA2 Insurance - Concepts and Practices
- 19OFA3 Public Finance
- 19OFA4 Public Finance and Taxation

### LANGUAGE ELECTIVES

19G001 Communication Skills for Engineers

19G002 German- Level A1.1

19G003 French Language Level 1

19G004 Basic Japanese

### Summary of Credit Distribution

<b>BE INSTRUMENTATION AND CONTROL ENGINEERING</b>										
<b>S. No</b>	<b>Course Category</b>	<b>Credits Per Semester</b>								<b>Total Credits</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	
1	HS	3	2	3	0	0	0	0	0	8
2	BS	10	10	4	4	0	0	0	0	28
3	ES	9	6	8	5	0	0	0	0	28
4	PC	0	0	9	14	18	11	8	0	60
5	PE	0	0	0	0	3	6	6	3	18
6	OE	0	0	0	0	0	0	3	3	6
7	EEC	0	0+2	0	1	1	7	2	4	17
8	MC	-	-	-	-	-	-	-	-	-
	<b>TOTAL</b>	<b>22</b>	<b>18+2</b>	<b>24</b>	<b>24</b>	<b>22</b>	<b>24</b>	<b>19</b>	<b>10</b>	<b>165</b>

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