

**List of Courses for PG**

Programme: M. Tech. in Control and Instrumentation (CIS)  
M. Tech. in Electrical Power System Management (EPSM)

**The overall credits structure for CIS**

Core Courses		Elective Courses	
Category	Credits	Category	Credits
DC:	32	CBCS:	12
SEC:	10	DE:	16
AECC	04	-	-
Total	46	Total	28

**Total Credits=74**

**The overall credits structure for EPSM**

Core Courses		Elective Courses	
Category	Credits	Category	Credits
DC:	36	CBCS:	12
SEC:	10	DE:	12
AECC	04	-	-
Total	50	Total	24

**Total Credits=74**

**CBCS: Choice Based Credit System**

Course No.	Course Title	L	T	P	Credits
EEM-101	Intelligent Techniques	3	1	0	4
EEM-201	Optimization Techniques	3	1	0	4
EEM-303	Multi Sensor Data Fusion	3	1	0	4
EEM-304	Biomedical Instrumentation	3	1	0	4
EEM-305	Non Linear Control System	3	1	0	4
EEM-306	Advanced Power Electronics	3	1	0	4
EEM-308	Smart Grid Technologies	3	1	0	4
EEM-309	EHVAC and DC Transmission	3	1	0	4

**DC: Departmental core**

EEM-102	Instrumentation Systems	3	1	0	4
EEM-103	Optimal Control Theory	3	1	0	4
EEM-109	Power System Modeling	3	1	0	4
EEM-111	Renewable and Sustainable Energy Systems	3	1	0	4
EEM-202	Adaptive and Robust Control	3	1	0	4
EEM-209	Power System Dynamics and Stability	3	1	0	4
EEM-350	Minor Project	0	0	16	8
EEM-450	Dissertation	0	0	24	12

**DE: Departmental electives**

EEM-104	Modelling and Simulation	3	1	0	4
EEM-105	Robotics and Control	3	1	0	4
EEM-106	Applied Mathematics for Engineers	3	1	0	4
EEM-107	Automation Systems	3	1	0	4
EEM-108	Process Control	3	1	0	4
EEM-112	Modeling and Simulation	3	1	0	4
EEM-113	Power Quality and FACTS	3	1	0	4
EEM-204	Communication Protocol	3	1	0	4
EEM-205	Advance Digital Signal Processing	3	1	0	4
EEM-206	Smart sensors and Internet of Things	3	1	0	4
EEM-207	Embedded Systems	3	1	0	4
EEM-208	Digital Control System	3	1	0	4
EEM-213	Digital Power System Protection	3	1	0	4
EEM-214	Power System Planning and Reliability	3	1	0	4
EEM-215	Power System Analysis	3	1	0	4

**SEC: Skill Enhancement Courses**

EEM-132	Instrumentation System Lab	0	0	4	2
EEM-134	SCADA Lab	0	0	4	2
EEM-232	Advance Control System Lab	0	0	4	2
EEM-339	Power System Automation Laboratory	0	0	4	2
EEM-240	Seminar	0	0	4	2
EEM-301	Digital Instrumentation	3	1	0	4
EEM-302	Wireless Sensor Networks	3	1	0	4
EEM-306	Advanced Power Electronics	3	1	0	4
EEM 307	Restructuring and Deregulation of Power System	3	1	0	4

**AECC: Ability Enhancement Compulsory Course**

EEM-203	Transducer technology	3	1	0	4
EEM-211	Transmission and Distribution Automation	3	1	0	4

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M. Tech. in Control and Instrumentation (CIS)

**Course Structure under the Choice Base Credit System (CBCS)**

**Category of Courses**

**DC:** Departmental core  
**CBCS:** Choice Based Credit System  
**SEC:** Skill Enhancement Courses  
**AECC:** Ability Enhancement Compulsory Course  
**DE:** Departmental electives

**Abbreviation**

L Lecture  
T Tutorial  
P Practical  
CCA Continuous Class Assessment  
MSE Mid Semester Evaluation

**M. Tech. in Control and Instrumentation–I Year, Effective from July 2015, I Year Batch**

**First Semester**

S. No	Course No.	Course Name	Type of Course	CREDI	Periods Per week			Examination Scheme (Distribution of Marks)				
					L	T	P	Mid Semester Evaluation			End Semester Evaluation	Total Marks
								CCA	MSE-1	MSE-2		
01	EEM-101	Intelligent Techniques	CBCS	4	3	1	-	10	15	15	60	100
02	EEM-102	Instrumentation Systems	DC	4	3	1	-	10	15	15	60	100
03	EEM-103	Optimal Control Theory	DC	4	3	1	-	10	15	15	60	100
04	-	Elective I	DE	4	3	1	-	10	15	15	60	100
05	-	Elective –II	DE	4	3	1	-	10	15	15	60	100
<b>PRACTICAL (LAB.)</b>												
06	EEM-132	Instrumentation System Lab	SEC	2	-	-	4	30	-	-	20	50
				<b>Total</b>	<b>22</b>							<b>550</b>

**Elective –I:** EEM-104 Modelling and Simulation/EEM-105 Robotics and Control/EEM-106 Applied Mathematics for Engineers

**Elective –II:** EEM-107 Automation Systems/EEM-108 Process Control

**Second Semester**

01	EEM-201	Optimization Techniques	CBCS	4	3	1	-	10	15	15	60	100	
02	EEM-202	Adaptive and Robust Control	DC	4	3	1	-	10	15	15	60	100	
03	EEM-203	Transducer Technology	AECC	4	3	1	-	10	15	15	60	100	
04	-	Elective III	DE	4	3	1	-	10	15	15	60	100	
05	-	Elective –IV	DE	4	3	1	-	10	15	15	60	100	
<b>PRACTICAL (LAB.)</b>													
06	EEM-232	Advance Control System Lab	SEC	2	-	-	4	30	-	-	20	50	
07	EEM-240	Seminar	SEC	2	-	-	4	30	-	-	20	50	
				<b>Total</b>	<b>24</b>							<b>Total</b>	<b>600</b>

**Elective –III:** EEM-204 Communication Protocol/ EEM-205 Advance Digital Signal Processing

**Elective –IV:** EEM-206 Smart sensors and Internet of Things/EEM-207 Embedded Systems/EEM-208 Digital Control System

**M. Tech. in Control and Instrumentation–II Year, Effective from July 2016, I Year Batch**

**Third Semester**

S. No	Course No.	Course Name	Type of Course	CREDI	Periods Per week			Examination Scheme (Distribution of Marks)				
					L	T	P	Mid Semester Evaluation			End Semester Evaluation	Total Marks
								CCA	MSE-1	MSE-2		
01	-	Elective –V	SEC	4	3	1	-	10	15	15	60	100
02	-	Elective –VI	CBCS	4	3	1	-	10	15	15	60	100
<b>PRACTICAL (LAB.)</b>												
06	EEM-350	Minor Project	DC	8	-	-	16	120	-	-	80	200
				<b>Total</b>	<b>16</b>							<b>400</b>

**Elective –V:** EEM-301 Digital Instrumentation/EEM-302 Wireless Sensor Networks

**Elective –VI:** EEM-303 Multi Sensor Data Fusion/EEM-304 Biomedical Instrumentation/EEM-305 Non Linear Control System/  
EEM-306 Advanced Power Electronics

**Fourth Semester**

01	EEM-450	Dissertation	DC	12	-	-	24	180	-	-	120	300	
				<b>Total</b>	<b>12</b>							<b>Total</b>	<b>300</b>

Total Credits (22+24+16+12) =74

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