

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON.

Department of Instrumentation Engineering. Proposed Scheme for B. Tech. (Instrumentation Engineering)

SEM I

Course Code	Name of the Course	Group	Teaching Scheme Hrs/week				Evaluation Scheme							Credits
							Theory				Practical		Total	
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA	ESE		
SH101	Engineering Mathematics-I	A	3	1	---	4	10	15	15	60	---	---	100	4
SH152	Applied Chemistry	A	4	---	---	4	10	15	15	60	---	---	100	4
ME151	Engineering Graphics	B	3	---	---	3	10	15	15	60	---	---	100	3
EE151	Basic Electrical Engineering	B	2	---	---	2	4	8	8	30	---	---	50	2
SH153	Environmental Studies	A	3	---	---	3	10	15	15	60	---	---	100	3
ME152	Workshop Practice-II	B	---	---	2	2	---	---	---	---	50	---	50	1
SH154	Applied Chemistry Lab	A	---	---	2	2	---	---	---	---	50	---	50	1
ME153	Engineering Graphics Lab	B	---	---	4	4	---	---	---	---	50	---	50	2
EE152	Basic Electrical Engineering Lab	B	---	---	2	2	---	---	---	---	50	---	50	1
SH155	General Proficiency I	C	1		2	3	---	---	---	---	50	---	50	2
Total			15	2	12	29	44	68	68	270	250	---	700	23

SEM II

Course Code	Name of the Course	Group	Teaching Scheme Hrs/week				Evaluation Scheme							Credits
							Theory				Practical		Total	
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA	ESE		
SH151	Engineering Mathematics-II	A	3	1	---	4	10	15	15	60	---	---	100	4
SH102	Applied Physics	A	4	---	---	4	10	15	15	60	---	---	100	4
CO101	Computer Fundamental & C Programming	B	3	---	---	3	10	15	15	60	---	---	100	3
CE101	Engineering Mechanics	B	3	1	---	4	10	15	15	60	---	---	100	4
ET101	Basic Electronics Engineering	B	2	---	---	2	4	8	8	30	---	---	50	2
ME101	Workshop Practice-I	B	---	---	2	2	---	---	---	---	50	---	50	1
SH103	Applied Physics Lab	A	---	---	2	2	---	---	---	---	50	---	50	1
CO102	Computer Fundamental & C Programming Lab	B	---	---	4	4	---	---	---	---	50	---	50	2
CE102	Engineering Mechanics Lab	B	---	---	2	2	---	---	---	---	50	---	50	1
ET102	Basic Electronics Engineering Lab	B	---	---	2	2	---	---	---	---	50	---	50	1
Total			16	1	12	29	44	68	68	270	250	---	700	23

TH: Theory Lecture,
ISA :Internal Sessional Assessment

TUT: Tutorial,
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Department of Instrumentation Engineering.

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SEM III

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme							Credits
							Theory				Practical		Total	
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA	ESE		
SH201	Engineering Mathematics-III	A	3	1	-	4	10	15	15	60	-	-	100	4
EE221	Electrical Machine and Network	B	3	-	-	3	10	15	15	60	-	-	100	3
IN201	Analog Circuit and Analysis	D	3	1	-	4	10	15	15	60	-	-	100	4
IN202	Measurement Fundamentals	D	3	-	-	3	10	15	15	60	-	-	100	3
IN203	Computational Methods and Programming	D	3	-	-	3	10	15	15	60	-	-	100	3
SH204	General Proficiency II	C	1	-	2	3	-	-	-	-	25	25	50	2
EE222	Electrical Machines and Networks Lab	B	-	-	2	2	-	-	-	-	50	-	50	1
IN204	Analog Circuits and Analysis Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN205	Measurement Fundamentals Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN206	Computational Methods and Programming Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
Total			16	2	10	28	50	75	75	300	150	100	750	23

SEM IV

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme							Credits
							Theory				Practical		Total	
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA	ESE		
IN251	Automatic Control Systems	D	3	1	-	4	10	15	15	60	-	-	100	4
IN252	Signals and Systems	D	3	1	-	4	10	15	15	60	-	-	100	4
IN253	Electronics Instrumentation	D	3	-	-	3	10	15	15	60	-	-	100	3
IN254	Sensors and Transducers	D	3	-	-	3	10	15	15	60	-	-	100	3
IN255	Digital Circuits Design	D	3	-	-	3	10	15	15	60	-	-	100	3
IN256	Programming in MATLAB	B	1	-	2	3					50	-	50	2
IN257	Electronics Instrumentation Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN258	Automatic Control System Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN259	Sensors and Transducers Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN260	Digital Circuits Design Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
Total			16	2	10	28	50	75	75	300	150	100	750	23

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Department of Instrumentation Engineering. Proposed Scheme for B. Tech. (Instrumentation Engineering)

SEM V

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme						Credits	
							Theory			Practical		Total		
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA			ESE
IN301	Industrial Automation and Management	C	3	-	-	3	10	15	15	60	-	-	100	3
IN302	Control System Components	D	3		-	3	10	15	15	60	-	-	100	3
IN303	Micro Controller and Applications	D	3	-	-	3	10	15	15	60	-	-	100	3
IN304	Power Electronics	D	3	-	-	3	10	15	15	60	-	-	100	3
IN305	Instrumentation In Unit Operations	D	3	-	-	3	10	15	15	60	-	-	100	3
IN306	Control System Components Lab	D	-	-	2	2	-	-	-	-	50	-	50	1
IN307	Industrial Automation & Management Lab	C	-	-	2	2	-	-	-	-	25	25	50	1
IN308	Microcontroller & Application Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN309	Power Electronics Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN310	Virtual Instrumentation & Lab VIEW Lab	B	1	-	2	3	-	-	-	-	25	25	50	2
IN311	Self Study I	D	-	-	-	-	-	-	-	-	--	-	50**	2
Total			16		10	26	50	75	75	300	150	100	800	23

TH: Theory Lecture,

ISA :Internal Sessional Assessment

TUT: Tutorial,

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- ****Marks and hence grade of course Self Study shall be based on one test each conducted on 20% syllabus of five subjects-IN301, IN302, IN303, IN 304, IN305. One faculty member should be appointed as course coordinator for the course 'self study' to compile the marks of all tests and enter in to MIS.**
- **The 20% syllabus for self - study shall be declared by subject teacher at the beginning of semester and he/she shall conduct the test examination for that course, assess answer papers of test examination and submit the marks to course coordinator.**

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SEM VI

Course Code	Name of the Course	Group	Teaching Scheme Hrs /week				Evaluation Scheme							Credits
							Theory				Practical		Total	
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA	ESE		
IN351	Digital Control System	D	3	-	-	3	10	15	15	60	-	-	100	3
IN352	Digital Signal Processing	D	3	-	-	3	10	15	15	60	-	-	100	3
IN353	Data Communication and Telemetry	D	3	-	-	3	10	15	15	60	-	-	100	3
IN354	Analytical Instrumentation	D	3	-	-	3	10	15	15	60	-	-	100	3
SH351	Entrepreneurship & Business Management	C	3	-	-	3	10	15	15	60	-	-	100	3
IN355	Digital Signal Processing Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN356	Data Communication & Telemetry Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN357	Analytical Instrumentation Lab	D	-	-	2	2	-	-	-	-	50	-	50	1
IN358	Electronic Workshop Lab	B	-	-	2	2	-	-	-	-	25	25	50	1
IN359	Mini Project	D	-	-	2	2	-	-	-	-	25	25	50	2
IN360	Self Study - II	D	-	-	-	-	-	-	-	-	-	-	50**	2
IN361	Industrial Lectures*	D	1	-	-	1	-	-	-	-	--	-	-	-
Total			16	--	10	26	50	75	75	300	150	100	800	23

TH: Theory Lecture,

ISA :Internal Sessional Assessment

TUT: Tutorial,

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*Evaluation of the course IN361 Industrial Lectures shall be done in VIIIth semester along with the subject IN461 Industrial Lectures

- ****Marks and hence grade of course Self Study shall be based on one test each conducted on 20% syllabus of five subjects-IN351, IN352, IN353, IN 354, SH351 One faculty member should be appointed as course coordinator for the course 'self study' to compile the marks of all tests and enter in to MIS.**
- **The 20% syllabus for self - study shall be declared by subject teacher at the beginning of semester and he/she shall conduct the test examination for that course, assess answer papers of test examination and submit the marks to course coordinator.**

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON.

Department of Instrumentation Engineering. Proposed Scheme for B. Tech. (Instrumentation Engineering)

SEM VII

Course Code	Name of the Course	Group	Teaching Scheme Hrs/week				Evaluation Scheme						Credits	
							Theory				Practical			Total
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA	ESE		
IN401	Digital Image Processing	D	3	-		3	10	15	15	60	-	-	100	3
IN402	Biomedical Instrumentation	D	3	-		3	10	15	15	60	-	-	100	3
IN403	Project Planning & Estimation	C	2	-		2	4	08	08	30	-	-	50	2
IN404	Interdisciplinary Elective	E	3	-		3	10	15	15	60	-	-	100	3
IN405	Elective-I	E	3	-		3	10	15	15	60	-	-	100	3
IN406	Digital Image Processing Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN407	Biomedical Instrumentation Lab	D	-	-	2	2	-	-	-	-	25	25	50	1
IN408	Elective-I Lab	E	-	-	2	2	-	-	-	-	25	25	50	1
IN409	Project Phase - I	D	-	-	2	2	-	-	-	-	50	50	100	2
IN410	Seminar	D	-	-	2	2	-	-	-	-	50	-	50	2
IN411	Self Study -III	D	-	-	-	-	-	-	-	-	--	-	50**	2
Total			14	---	10	24	44	68	68	270	200	100	800	23

TH: Theory Lecture,

ISA :Internal Sessional Assessment

TUT: Tutorial,

ISE : In Semester Examination

PR: Practical

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ICA : Internal Continuous Assessment

Interdisciplinary Elective

- | | |
|---|-------------------------|
| A | PLC and DCS |
| B | Virtual Instrumentation |

Elective I

- | | |
|---|--------------------------------|
| A | Industrial Drives and Control |
| B | Environmental Instrumentation |
| C | Optical Instrumentation |
| D | Neural Network and Fuzzy Logic |

- ****Marks and hence grade of course Self Study shall be based on one test each conducted on 20% syllabus of five subjects-IN401, IN402, IN403, IN 404, IN405. One faculty member should be appointed as course coordinator for the course 'self study' to compile the marks of all tests and enter in to MIS.**
- **The 20% syllabus for self - study shall be declared by subject teacher at the beginning of semester and he/she shall conduct the test examination for that course, assess answer papers of test examination and submit the marks to course coordinator.**

GOVERNMENT COLLEGE OF ENGINEERING, JALGAON.

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Course Code	Name of the Course	Group	Teaching Scheme Hrs/week				Evaluation Scheme							Credits
							Theory				Practical			
			TH	TUT	PR	Total	ISA	ISE1	ISE2	ESE	ICA	ESE	Total	
IN451	Instrumentation System Design	D	3			3	10	15	15	60			100	3
IN452	Process Instrumentation	D	3	--	--	3	10	15	15	60	--	--	100	3
IN453	Elective -II	E	3	--	--	3	10	15	15	60	--	--	100	3
IN454	Elective-III	E	3	--	--	3	10	15	15	60	--	--	100	3
IN455	Instrumentation System Design Lab	D	--	--	2	2	--	--	--	--	25	25	50	1
IN456	Process Instrumentation Lab	D	--	--	2	2	--	--	--	--	25	25	50	1
IN457	Elective II Lab	E	--	--	2	2	--	--	--	--	25	25	50	1
IN458	Project Phase - II	D	--	--	4	4	--	--	--	--	50	100	150	4
IN459	Industrial Visit/Industrial Training	D	--	--	--	--	--	--	--	--	25	--	25	1
IN460	Self Study IV	D	--	--	--	--	--	--	--	--	--	--	50**	2
IN461	Industrial Lectures	D	1	--		1	--	--	--	--	25	--	25	1
Total			13		10	23	40	60	60	240	175	175	800	23

TH: Theory Lecture,

ISA :Internal Sessional Assessment

TUT: Tutorial,

ISE : In Semester Examination

PR: Practical

ESE: End Semester Examination

ICA : Internal Continuous Assessment

Elective II

- A Power Plant Instrumentation
- B Agriculture Instrumentation
- C Computer Networks
- D Soft Computing

Elective III

- A Optimal and Adaptive control
- B MEMS & Nano Instrumentation
- C Automotive Instrumentation
- D Embedded Systems

- ****Marks and hence grade of course Self Study shall be based on one test each conducted on 20% syllabus of four subjects-IN451, IN452, IN453, IN 454. One faculty member should be appointed as course coordinator for the course 'self study' to compile the marks of all tests and enter in to MIS.**
- **The 20% syllabus for self - study shall be declared by subject teacher at the beginning of semester and he/she shall conduct the test examination for that course, assess answer papers of test examination and submit the marks to course coordinator.**
- **In the course Industrial Lecture, at least 12 lectures from industrial expert should be arranged and continuously assessed (6 lectures in VIth and VIIIth semester each)**