SRI VENKATESWARA UNIVERSITY::TIRUPATI

DEPARTMENT OF INSTRUMENTATION

TWO YEAR M.Sc. COURSE IN INSTRUMENTATION (2021-2022)

COURSE STRUCTURE AND EXAMINATION SCHEME

Semester -I : OVERVIEW

S.No	Components of Study	Title of the Course	Title of the Paper	Credit Hrs/ Week	No. of Credits	IA Marks	Sem End Marks	Total
1.	**Mandatory Core**	INS – 101	1.Introduction to Instrumentation and Control System	6	4	20	80	100
2.		INS – 102	2. Analog Devices and Industrial Electronics	6	4	20	80	100
3.	**Compulsory Foundation**	INS - 103(a)	1. Digital Techniques and Principles of Communications	6	4	20	80	100
		INS - 103(b)	2. Power Electronics					
		INS - 103(c)	3. Industrial Product Instrumentation					
4.	**Elective Foundation**	INS - 104 (a)	1. Programming in "C"	6	4	20	80	100
		INS - 104 (b)	2. Renewable Sources of Energy					
		INS -104 (c)	3. Opto Electronics					
5.	**Practical –I**	INS - 105	Paper 1& 3 (Analog and Digital Electronics Lab)	6	4	--	100	100
6.	**Practical-II**	INS – 106	Paper 3 &4 (" C " Programs Lab)	6	4	--	100	100
	Total			36	24	80	520	600
7.	Audit Course			0	0	100	0	0

 *All core papers are Mandatory

- Compulsory Foundation choose one paper.
- Elective Foundation – Choose one paper.
- Audit course-100 Marks (Internals) Zero Credits under self-study.
- Interested students may register for MOOC with the approval of the concerned DDC but it will be considered for the award of the grade as open elective only giving extra credits.

S.No	Components of Study	Title of the Course	Title of the Paper	Credit Hrs/ Week	No. of Credits	IA Marks	Sem End Marks	Total
1.	**Mandatory Core**	INS – 201	1.Industrial Instrumentation	6	4	20	80	100
2.		INS – 202	2. Electronic Instrumentation	6	4	20	80	100
3.	**Compulsory Foundation**	INS - 203(a)	1. Sensors and Signal Conditioners	6	4	20	80	100
		INS - 203(b)	2.Network Analysis					
		INS - 203(c)	3. Spectroscopic Instrumentation					
4.	**Elective Foundation**	INS - 204(a)	1.Microprocessors and Interfacing	6	4	20	80	100
		INS - 204(b)	2. Robotics					
		INS - 204(c)	3. Electronic Measurement Instruments					
5.	**Practical -I**	INS – 205	Paper 1& 3 (Transducers Lab)	6	4	--	100	100
6.	**Practical-II**	INS – 206	Paper 3 & 4 (Microprocessors Lab)	6	4	--	100	100
	Total			36	24	80	520	600
7.	Audit Course			0	0	100	0	0

*All core papers are Mandatory

- Compulsory Foundation choose one paper.
- Elective Foundation – Choose one paper.
- Audit course-100 Marks (Internals) Zero Credits under self-study.
- Interested students may register for MOOC with the approval of the concerned DDC but it will be considered for the award of the grade as open elective only giving extra credits.

Semester – III: OVERVIEW

S.No	Components of Study	Title of the Course	Title of the Paper	Credit Hrs/ Week	No. of Credits	IA Marks	Sem End Marks	Total
1.		INS – 301	1.Analytical Instrumentation	6	4	20	80	100
2.	**Mandatory Core**	INS – 302	2.Digital Signal Processing	6	4	20	80	100
3.	**Generic Elective**	INS - 303(a)	1. Biomedical Instrumentation	6	4	20	80	100
		INS - 303(b)	2. Micro Electro Mechanical Systems					
		INS - 303(c)	3. Instrumentation for Environmental Science					
4.	**Practicals**	INS – 304	Analytical Instrumentation Lab	6	4	--	100	100
5.	**Skill Oriented Course**	INS – 305	Microcontrollers and Interfacing	6	4	10	90 (T40 +P50)	100
6.	**Open Elective**	INS - 306(a)	1.Computer Architecture and Organization	6	4	20	80	100
		INS - 306(b)	2.Industrial Organization and Management					
	Total			36	24	90	510	600

*All core papers are Mandatory

- Generic Elective – Choose one
- Core papers and Generic Electives opted paper held Practical-I
- Skill Oriented Course is Mandatory. Relevant society along with practical (10marks internal 40 final theory & 50 for practicals).
- Open Electives are for the students of other Departments. Minimum one paper should be opted. Extra credits may be earned by opting for more number of open electives depending on the interest of the student through self-study.
- Interested students may register for MOOC with the approval of the concerned DDC.

Semester – IV: OVERVIEW

S.No	Components of study	Title of the Course	Title of the Paper	Credit Hrs/ Week	No. of Credits	IA Marks	Sem End Marks	Total
1.	**Mandatory Core**	INS - 401	1.Introduction to VLSI Circuits	6	4	20	80	100
2.		INS – 402	2.Embedded Systems and Real time Operating Systems	6	4	20	80	100
3.	**Generic Elective**	INS - 403(a)	1. Programmable Logic Controllers	6	4	20	80	100
		INS - 403(b)	2.Computational Mathematics					
		INS - 403(c)	3. Electrical Engineering Materials					
4.	**Practicals**	INS – 404	VLSI Lab	6	4	--	100	100
5.	**Multi Disciplinary Course/ Project Work**	INS – 405	Project Work	6	4	--	100	100
6.	**Open Elective**	INS - 406(a)	1. Agro Based Instrumentation	6	4	20	80	100
		INS - 406(b)	2.Industrial Automation					
	Total			36	24	90	520	600

*All core papers are Mandatory

- Generic Elective – Choose one
- Core papers and Generic Electives opted paper held Practical-II.
- Project Work- Collaboration with various firms/companies/societies.
- Multi-Disciplinary Course is Mandatory. Circle formation with other subjects/Dept. of Arts/Commerce.
- Open Electives are for the students of other Departments. Minimum one paper should be opted. Extra credits may be earned by opting for more number of open electives depending on the interest of the student through self-study.
- Interested students may register for MOOC with the approval of the concerned DDC.