KURUKSHETRA UNIVERSITY KURUKSHETRA

[Established by the State Legislature Act XII of 1956]

('A+' Grade, NAAC Accredited)

AQAR-2020-21

1.2.2 : Scheme of Examination for the programmes in the Department/Institute of

Electronic Science

Kurukshetra University, Kurukshetra

Scheme of Examination & Syllabus of M.Sc. Electronic Science (CBCS)
(I to IV Semesters) w.e.f. Session 2020-2021 (in phased manner)

Part-I Course Subjects

Course No.	Name	Marks			Exam Time	Credit	Workload/ contact hrs. per week
		Sessional*	Exam	Total			
Semester I							
EL 11	Mathematical & Computational Techniques in Electronics	25	75	100	3 hrs.	4	4
EL 12	Physics of Solid State Devices	25	75	100	3 hrs.	4	4
EL 13	IC Fabrication Technology	25	75	100	3 hrs.	4	4
EL 14	EM Theory and Electronic Communication	25	75	100	3 hrs.	4	4
EL 15	Electronic Instrumentation & Control System	25	75	100	3 hrs.	4	4
EL 16	Analog Circuit Design Lab	25	75	100	4 hrs.	8	16
EL 17	Digital Circuit Design & Programming Lab	25	75	100	4 hrs.	8	16
				Total		36	52
Semester-II							
EL 21	Digital Circuits and System Design	25	75	100	3 hrs.	4	4
EL 22	Device Models & Circuit Simulation	25	75	100	3 hrs.	4	4
EL 23	Verilog- Hardware Description Language	25	75	100	3 hrs.	4	4
EL 24	System Design Using Embedded Processors	25	75	100	3 hrs.	4	4
EL 25	Option	25	75				
(i)	Foundations of MEMS	25	75	100	3 hrs.	4	4
(ii)	Nano Electronics – Materials & Devices	25	75	100	3 hrs.	4	4
(iii)	Materials for VLSI	25	75	100	3 hrs.	4	4
EL 26	Electronic Circuits Simulation & Microcontroller Lab	25	75	100	4 hrs.	8	16
EL 27	IC Processing & Characterization lab	25	75	100	4 hrs.	8	16
				Total		36	52
Semester-III							
EL 31	MOS Solid State Circuits	25	75	100	3 hrs.	4	4
EL 32	Semiconductor Material & Device Characterization	25	75	100	3 hrs.	4	4
EL 33	Microwave & Optoelectronic Devices	25	75	100	3 hrs.	4	4
EL 34	Option	25	75				
(i)	Custom Microelectronics & ASICs	25	75	100	3 hrs.	4	4
(ii)	RF Microelectronics	25	75	100	3 hrs.	4	4
(iii)	Digital Signal Processing	25	75	100	3 hrs.	4	4
EL 35	Option	25	75				
(i)	Digital Communication	25	75	100	3 hrs.	4	4

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(ii)	Optical Fiber Communication		25	75	100	3 hrs.	4	4
(iii)	Wireless & Mobile Communication		25	75	100	3 hrs.	4	4
EL 36	Communication Lab		25	75	100	4 hrs.	8	16
EL 37	CAD Tools & Embedded Systems Lab		25	75	100	4 hrs.	8	16
						Total	36	52
Semester IV								
EL 41	Project report & Viva Voce **		0	0	300		20	-
EL 42	Current Topic Seminar in Electronics		0	0	100	1 hr.	4	-
						Total	24	-

Total credits = 132

Note:
*(i) In theory papers, the internal assessment will be based on two class tests, one assignment and the attendance in the class. Where two teachers are teaching the subject, average of the tests and assignments will be considered.

**(ii) The Project is to be carried out for six months during Jan-June in an Industry or Institute of repute or in the Department labs. The students are required to submit a dissertation. Evaluation will be done by examiners appointed by the PG Board of studies and will be based on the dissertation and Viva Voce.

Part-II
The students of Department of Electronic Science will take two open choices (2 credit each) offered by other Departments of Science Faculty and have to earn 4 credit in addition to credit earned in Part-I.

Part-III
Open choice offered by the Department of Electronic Science for the students of other Departments of Science Faculty as under:

Open Elective

Course No.	Name		Marks			Exam Time	Credits	Workload/ contact hrs. per week
			Sess	Exam	Tot			
OE 203	Fundamental of Nanomaterials		15	35	50	3 hrs.	2	2
OE 303	MEMS: An Interdisciplinary Approach		15	35	50	3 hrs.	2	2

The open choice will be offered in II/III sem.

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Scheme of Examination & Syllabus of M.Tech. (Microelectronics & VLSI Design) (CBCS) (I to IV Semesters) w.e.f. Session 2020-2021 (in phased manner)

Course	Name of the Subject	Workload Hours per week	Hours/ Week Credit		Internal Assessment Marks	Exam/ Practical Marks	Total Credits	Duration of Exam
			L	P				
	I Semester							
MMVD 101	Process Technology for ULSI –I	4	4	0	40	60	4	3 Hrs.
MMVD 102	MOSFET Physics and Sub-Micron Device Modeling	4	4	0	40	60	4	3 Hrs.
MMVD 103	VLSI Design	4	4	0	40	60	4	3 Hrs.
MMVD 104	Digital Signal Processing	4	4	0	40	60	4	3 Hrs.
MMVD 105	Lab Work – I	16	0	8	40	60	8	4 Hrs.
					200	300		
			Total		500		24	
	II Semester							
MMVD 201	Process Technology for ULSI –II	4	4	0	40	60	4	3 Hrs.
MMVD 202	Embedded System Design using 8051	4	4	0	40	60	4	3 Hrs.
MMVD 203	Analog CMOS Integrated Circuits	4	4	0	40	60	4	3 Hrs.
MMVD 204	Verilog - Hardware Description Language	4	4	0	40	60	4	3 Hrs.
MMVD 205	Lab Work – II	16	0	8	40	60	8	4 Hrs.
					200	300		
			Total		500		24	
	III Semester							
MMVD 301	Program Elective-I*	4	4	0	40	60	4	3 Hrs.
MMVD 302	Program Electives-I*	4	4	0	40	60	4	3 Hrs.
MMVD 303	Program Electives-I*	4	4	0	40	60	4	3 Hrs.
MMVD 304	Minor Project**	8	0	8	0	100	8	4 Hrs.
					120	280		
			Total		400		20	
	IV Semester							
MMVD 401	Project Dissertation - Evaluation & Viva Voce **		0	32	0	300	20	
			Total				20	

*For each of the following three courses student can opt any one subject from Program Elective I or Program Elective II.

Course	Program Elective – I	Program Elective – II
MMVD 301	Micro Electro Mechanical Systems (MEMS)	RF Microelectronics
MMVD 302	Embedded System Design using ARM	Digital System Testing and Fault Simulation
MMVD 303	Nano Science & Technology	Digital Signal Processing in VLSI

* Note: Minor project will be a kind of open ended problem based project. Topic/Title will be chosen by the students in the relevance of the studied courses during M.Tech.(MMVD). The evaluation for Minor Project will be based on the presentation /Viva-Voce given by student to examiners appointed by the PG Board of studies.

** Note: The Project is to be carried out for six month during Jan-June in an Industry or Institute of repute or in the Department labs. The students are required to submit a dissertation. Evaluation will be done by examiners appointed by the PG Board of studies and will be based on the dissertation and Viva-Voce. These will be acceptance with grades (grade 'A', grade 'B' and Grade 'C') or rejection of project thesis.

In theory papers, the internal assessment will be based on two class tests, one assignment and attendance in the class as per the classification given in academic ordinance for M.Tech. Courses. Where two teachers are teaching the subject, average of the tests and assignments will be considered.

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