II. First Year / Computer and Systems Engineering Program

First Term											
]	Hours /	'Weel	K		Marks				
Code No.	Course Title		Applications			Credit	Voor	Lab	Writto	Exam	Total
		Lec.	Tut.	La b	Total	Hours	Work	and Oral	n	Time	Marks
GEN	Mathematics	3	1	-	4	3	50	-	100	3	150
1701	(3)										
GEN 1702	Discrete Mathematics	2	1	-	3	2	30	-	70	3	100
ELC 1703	Solid-State	3	1	1	5	3	30	30	90	3	150
CSE 1704	Programming Techniques	3	-	1	4	3	30	30	90	3	150
POW 1705	Circuit Theory	3	1	-	4	3	50	-	100	3	150
GEN 1706	Technical Writing	2	-	-	2	2	15	-	35	2	50
Total H	lours / Week	16	4	2	22	16			750		
Second Term											
]	Hours /	' Weel	K		Marks				
Code No.	Course Title		Applica	tions		Credit	V	Lab		Exam	Total
		Lec.	Tut.	La	Total	Hours	rear	and	Written	Time	Marks
				b			Work	Oral			
CEN	Statistics and			b			Work	Oral			
GEN 1707	Statistics and Probability for	3	1	b -	4	3	Work 50	Oral	100	3	150
GEN 1707	Statistics and Probability for Engineering	3	1	b -	4	3	Work 50	Oral	100	3	150
GEN 1707 ELC 1708	Statistics and Probability for Engineering Basic Electronics	3	1	в - 1	4	3	50 30	Oral - 30	100 90	3	150 150
GEN 1707 ELC 1708 CSE 1709	Statistics and Probability for Engineering Basic Electronics Advanced Programming	3 3 3	1	b - 1 1	4 5 4	3 3 3 3	Work 50 30 50	Oral - 30 -	100 90 100	3 3 3	150 150 150
GEN 1707 ELC 1708 CSE 1709 ECE	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic	3 3 3	1	b - 1 1	4 5 4	3 3 3	Work 50 30 50	Oral - 30 -	100 90 100	3 3 3	150 150 150
GEN 1707 ELC 1708 CSE 1709 ECE 1710	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems	3 3 3 3	1	b - 1 1 1	4 5 4 4	3 3 3 3	Work 50 30 50 30	Oral - 30 - 30	100 90 100 90	3 3 3 4	150 150 150 150
GEN 1707 ELC 1708 CSE 1709 ECE 1710	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing	3 3 3 3	1	b - 1 1 1	4 5 4 4	3 3 3 3	Work 50 30 50 30	Oral - 30 - 30	100 90 100 90	3 3 3 4	150 150 150 150
GEN 1707 ELC 1708 CSE 1709 ECE 1710 GEN	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing and	3 3 3 3	1	b - 1 1 1	4 5 4 4	3 3 3 3	Work 50 30 50 30	Oral - 30 - 30	100 90 100 90	3 3 3 4	150 150 150 150
GEN 1707 ELC 1708 CSE 1709 ECE 1710 GEN 1711	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing and Presentation	3 3 3 3 2	1 - -	b - 1 1 -	4 5 4 4 2	3 3 3 3 2	Work 50 30 50 30 15	Oral - 30 - 30 -	100 90 100 90 35	3 3 3 4 2	150 150 150 150 50
GEN 1707 ELC 1708 CSE 1709 ECE 1710 GEN 1711	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing and Presentation Skills	3 3 3 2	1	b - 1 1 -	4 5 4 4 2	3 3 3 3 2	Work 50 30 50 30 15	Oral - 30 - 30 -	100 90 100 90 35	3 3 3 4 2	150 150 150 150 50
GEN 1707 ELC 1708 CSE 1709 ECE 1710 GEN 1711	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing and Presentation Skills Electrical and	3 3 3 2	1	b - 1 1 -	4 5 4 4 2	3 3 3 3 2	Work 50 30 50 30 15	Oral - 30 - 30 -	100 90 100 90 35	3 3 4 2	150 150 150 50
GEN 1707 ELC 1708 CSE 1709 ECE 1710 GEN 1711 ELC 1712	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing and Presentation Skills Electrical and Electronics	3 3 3 2 2	1 - - 1	b - 1 1 - 1 1 1 1 1	4 5 4 4 2 4	3 3 3 3 2 2	Work 50 30 50 30 15 20	Oral - 30 - 30 - 40	100 90 100 90 35 40	3 3 3 4 2 2	150 150 150 150 50 100
GEN 1707 ELC 1708 CSE 1709 ECE 1710 GEN 1711 ELC 1712	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing and Presentation Skills Electrical and Electronics Workshop	3 3 3 2 2 2	1 - - 1	b - 1 1 - 1 1 1 1 1	4 5 4 4 2 4	3 3 3 3 2 2 2	Work 50 30 50 30 15 20	Oral - 30 - 30 - 40	100 90 100 90 35 40	3 3 3 4 2 2	150 150 150 50 100
GEN 1707 ELC 1708 CSE 1709 ECE 1710 GEN 1711 ELC 1712 Total H	Statistics and Probability for Engineering Basic Electronics Advanced Programming Design of Logic Systems Report Writing and Presentation Skills Electrical and Electronics Workshop	3 3 3 2 2 2 16	1 - - 1 3	b - 1 1 - 1 1 - 1 4	4 5 4 4 2 4 23	3 3 3 2 2 2 16	Work 50 30 50 30 15 20	Oral - 30 - 30 - 40	100 90 100 90 35 40 750	3 3 3 4 2 2	150 150 150 50 100

• Workshop Training (at college) inside the Faculty' Laboratories and Workshops. The training for 30-hours per week for 4-weeks after 2nd-term exam of 1st-Year.

III. Second Year / Computer and Systems Engineering Program

First Term											
a 1		Hours / Week					Marks				
Code No.	Course Title	-	Appli	cations		Credit	Year	Lab		Exam	Total Marks
		Lec	Tut	Lab	Total	nours	Work	rk and Oral	Written	Time	
GEN	Numerical	2	_	1	3	2	20	20	60	3	100
2701	Methods	2		1	5	2	20	20	00	5	100
ELC 2702	Electronic Circuits and Systems	3	1	1	5	3	30	30	90	3	150
	Computer						•				1.70
CSE 2703	Organization and Architecture	3	-	1	4	3	30	30	90	3	150
ELC 2704	Signals and Systems	3	1	-	4	3	50	-	100	3	150
CSE 2705	Data Structure and Algorithms	3	-	1	4	3	30	30	90	3	150
GEN 2706	Creative Thinking	2	-	-	2	2	15	-	35	2	50
Total	Hours / Week	16	2	4	22	16			750		
Second Term											
Cada]	Hours	/ Weel	<u>s</u>	a 14		Marks	5	Б	
Code	Course Title		Hours Applie	/ Weel cations	K Totol	Credit Hours	Year	Marks Lab	Waitton	Exam Time	Total Marks
Code No.	Course Title] Lec	Hours Applic Tut	/ Weel cations Lab	K Total	Credit Hours	Year Work	Marks Lab and Oral	Written	Exam Time	Total Marks
Code No.	Course Title Electronic] Lec	Hours Applie Tut	/ Weel cations Lab	K Total	Credit Hours	Year Work	Marks Lab and Oral	Written	Exam Time	Total Marks
Code No. ELC 2707	Course Title Electronic Measurements	2	Hours Applie Tut 1	/ Weel cations Lab	x Total 4	Credit Hours	Year Work 30	Marks Lab and Oral 30	Written 90	Exam Time	Total Marks 150
Code No. ELC 2707	Course Title Electronic Measurements and Sensors Microprocessors	2	Hours Applie Tut 1	/ Weel cations Lab	x Total 4	Credit Hours 2	Year Work 30	Marks Lab and Oral 30	Written 90	Exam Time 3	Total Marks 150
Code No. ELC 2707 CSE 2708	Course Title Electronic Measurements and Sensors Microprocessors Based System] Lec 2 3	Hours Applie Tut 1	/ Weel cations Lab 1	Total	Credit Hours 2 3	Year Work 30 30	Marks Lab and Oral 30 30	Written 90 90	Exam Time 3 3	Total Marks 150 150
Code No. ELC 2707 CSE 2708 ELC	Course Title Electronic Measurements and Sensors Microprocessors Based System Data	2 3	Hours Applid Tut 1	/ Weel cations Lab 1 1	Total 4 4	Credit Hours	Year Work 30 30	Marks Lab and Oral 30 30	Written 90 90	Exam Time 3 3	Total Marks 150 150
Code No. ELC 2707 CSE 2708 ELC 2709	Course Title Electronic Measurements and Sensors Microprocessors Based System Data Communication Systems	2 2 3 3	Hours Applie Tut 1 - 1	/ Weel cations Lab 1 1	Total 4 4 5	Credit Hours 2 3 3	Year Work 30 30 30	Marks Lab and Oral 30 30 30	Written 90 90 90 90	Exam Time 3 3 3	Total Marks 150 150 150
Code No. ELC 2707 CSE 2708 ELC 2709	Course Title Electronic Measurements and Sensors Microprocessors Based System Data Communication Systems Database	2 2 3 3	Hours Applie Tut 1 - 1	/ Weel cations Lab 1 1	Total 4 4 5	Credit Hours 2 3 3	Year Work 30 30 30	Marks Lab and Oral 30 30 30	Written 90 90 90 90	Exam Time 3 3 3	Total Marks 150 150 150
Code No. ELC 2707 CSE 2708 ELC 2709 CSE 2710	Course Title Electronic Measurements and Sensors Microprocessors Based System Data Communication Systems Database Management	Image: 1 Lec 2 3 3 2	Hours Applid Tut 1 - 1	/ Weel cations Lab 1 1 1	Total 4 4 5 3	Credit Hours 2 3 3 3	Year Work 30 30 30 30 30 30	Marks Lab and Oral 30 30 30 30	Written 90 90 90 90 90 90	Exam Time 3 3 3 3	Total Marks 150 150 150 150 150
Code No. ELC 2707 CSE 2708 ELC 2709 CSE 2710 POW	Course Title Electronic Measurements and Sensors Microprocessors Based System Data Communication Systems Database Management Systems Electrical Power and	Lec 2 3 3 2	Hours Applie Tut 1 - 1	/ Weel cations Lab 1 1 1	Total 4 4 5 3	Credit Hours	Year Work 30 30 30 30	Marks Lab and Oral 30 30 30 30	Written 90 90 90 90 90 90	Exam Time 3 3 3 3	Total Marks 150 150 150 150 150
Code No. ELC 2707 CSE 2708 ELC 2709 CSE 2710 POW 2711	Course Title Electronic Measurements and Sensors Microprocessors Based System Data Communication Systems Database Management Systems Electrical Power and Machines	Image: line line line line line line line line	Hours Applie Tut 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/ Weel cations Lab 1 1 1 1	Total 4 4 5 3 3	Credit Hours	Year Work 30 30 30 30 30 30 30 30	Marks Lab and Oral 30 30 30 30 -	Written 90 90 90 90 90 70	Exam Time 3 3 3 3 3 3	Total Marks 150 150 150 150 150 100
Code No. ELC 2707 CSE 2708 ELC 2709 CSE 2710 POW 2711 GEN 2712	Course Title Electronic Measurements and Sensors Microprocessors Based System Data Communication Systems Database Management Systems Electrical Power and Machines Operational Research	I Lec 2 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Hours Applie Tut 1 - 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/ Weel cations Lab 1 1 1 -	x Total 4 5 3 3 3	Credit Hours	Year Work 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	Marks Lab and Oral 30 30 30 30 - -	Written 90 90 90 90 90 35	Exam Time 3 3 3 3 3 3 2	Total Marks 150 150 150 150 150 150 50
Code No. ELC 2707 CSE 2708 ELC 2709 CSE 2710 POW 2711 GEN 2712 Total	Course Title Electronic Measurements and Sensors Microprocessors Based System Data Communication Systems Database Management Systems Electrical Power and Machines Operational Research Hours / Week	I Lec 2 3 2 2 2 2 2 2 2 2 2 2 2 1 2 2 2 14	Hours Applia Tut 1 - 1 - 1 1 1 1	/ Weel <u>cations</u> Lab 1 1 1 - - 4	Total 4 4 5 3 3 3 22	Credit Hours 2 3 3 3 2 2 2 15	Year Work 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	Marks Lab and Oral 30 30 30 30 - -	Written 90 90 90 90 90 35 750	Exam Time 3 3 3 3 3 2	Total Marks 150 150 150 150 150 150 50

 Practical-Field training (outside college - in specialized companies) for 4-weeks after 2nd-term exam of 2rd year.

IV. Third Year / Computers and Systems Engineering Program

First Term											
]	Hours	/ Week	K	Credi	Marks				
Code	Course Title	-	Applie	cations		t	Year	Lab		Exam	Total Marks
INO.		Lec.	Tut	Lab	Total	Hours	Work	and Oral	Written	Time	
CSE 3701	Software Engineering	3	-	1	4	3	30	30	90	3	150
ELC 3702	VLSI Design and Simulation	2	-	1	3	2	20	20	60	3	100
CSE 3703	Computer Networks	3	-	2	5	3	30	30	90	3	150
CSE 3704	Linear Control Systems	3	1	-	4	3	50	-	100	3	150
CSE 3705	Digital Signal Processing	3	-	1	4	3	20	20	60	3	100
MECH 3706	Engineering Economics	2	-	-	2	2	15	-	35	2	50
-	Practical-Field training	-	-	-	-	-	-	100	-	-	100
Total	16	2	4	22	16	800					
Second	Term			-	-	-	-				
Cala		Hours / Week			K	Credi	Marks				m / 1
Code	Course Title	Lec.	Applications		Total	t	Year	Lab	XX/	Exam Time	Total Marks
110.			Tut	Lab	Total	Hours	Work Ora	and Oral	written		
CSE 3707	Operating Systems	3	-	1	4	3	30	30	90	3	150
CSE 3708	Digital Control systems	2	-	1	3	2	20	20	60	3	100
CSE 3709	Artificial Intelligence	3	-	1	4	3	30	30	90	3	150
CSE 3710	Parallel and Distributed Systems	3	-	1	4	3	30	30	90	3	150
GEN 3711	Project Management	2	1	-	3	2	15	-	35	2	50
-	Elective-1	3	-	1	4	3	20	20	60	3	100
Total	Hours / Week	16	1	5	22	16			700		
		<u>.</u>	•	<u>.</u>	<u>.</u>	•		Total	Marks		1500

 Practical-Field training (outside college - in specialized companies) for 4-weeks after 2nd-term exam of 3rd year.

 20-hours per week for 2-weeks after 2nd term exam of 3rd-year for Graduation Project preparations.

VI. Fourth Year / Computers and Systems Engineering Program

First Term											
Cada		J	Hours	/ Week	K	Credi	Marks				
Code No	Course Title	Lec	Applications		Total	t	Year	Lab and	Written	Exam Time	Total Marks
110.		Let.	Tut	Lab	ab Iotal Hours	Work	Oral	winden			
CSE 4701	Machine Learning	3	-	1	4	3	30	30	90	3	150
CSE 4702	Network Security	3	1	-	4	3	٥.	-	۱	3	150
GEN 4703	Professional Ethics	2	-	-	2	2	15	-	35	2	50
-	Elective-2	3	-	1	4	3	30	30	90	3	150
-	Elective-3	3	-	1	4	3	30	30	90	3	150
-	Practical-Field training	-	-	-	-	-	-	100	-	-	100
	Graduation	_	_	4	4	2			Contin	ue	
	Project					_					
Tota	l Hours / Week	14	1	7	22	16	750				
Secon	d Term										
Secon	d Term]	Hours	/ Weeł	ι ζ	Credi		Marks	5	E	
Secon Code No.	d Term Course Title	l Lec.	Hours Applie Tut	/ Week cations Lab	x Total	Credi t Hours	Year Work	Marks Lab and Oral	Written	Exam Time	Total Marks
Secon Code No. CSE 4720	d Term Course Title Modelling and Simulation	Lec. 3	Hours Applie Tut -	/ Week cations Lab 1	Total	Credi t Hours 3	Year Work 20	Marks Lab and Oral 20	Written 60	Exam Time 3	Total Marks 100
Secon Code No. CSE 4720 CSE 4721	d Term Course Title Modelling and Simulation Mobile Computing	1 Lec. 3 3	Hours Applic Tut -	/ Week cations Lab 1	Total 4	Credi t Hours 3 3	Year Work 20 20	Marks Lab and Oral 20 20	Written 60 60	Exam Time 3 3	Total Marks 100 100
Secon Code No. CSE 4720 CSE 4721 GEN 4722	d Term Course Title Modelling and Simulation Mobile Computing Environmental Studies	I Lec. 3 3 2	Hours Applic Tut	/ Week cations Lab 1 1	Total 4 2	Credi t Hours 3 3 2	Year Work 20 20 15	Marks Lab and Oral 20 20 -	Written 60 60 35	Exam Time 3 3 2	Total Marks 100 100 50
Secon Code No. CSE 4720 CSE 4721 GEN 4722	d Term Course Title Modelling and Simulation Mobile Computing Environmental Studies Elective-4	Lec. 3 3 2 3	Hours Applie Tut - -	/ Week cations Lab 1 1 -	Total 4 4 2 4	Credi t Hours 3 3 2 3	Year Work 20 20 15 30	Marks Lab and Oral 20 20 - 30	Written 60 60 35 90	Exam Time 3 3 3 2 2 2	Total Marks 100 100 50 150
Secon Code No. CSE 4720 CSE 4721 GEN 4722 - -	d Term Course Title Modelling and Simulation Mobile Computing Environmental Studies Elective-4 Elective-5	Lec. 3 3 3 3 3 3 3 3 3	Hours Applid Tut - - -	/ Week cations Lab 1 - 1 1 1	x Total 4 4 2 4 4 4	Credi t Hours 3 3 2 3 3 3	Year Work 20 20 15 30 30	Marks Lab and Oral 20 20 - 30 30	Written 60 60 35 90 90	Exam Time 3 3 2 2 2 2	Total Marks 100 100 50 150 150
Secon Code No. CSE 4720 CSE 4721 GEN 4722 - -	d Term Course Title Modelling and Simulation Mobile Computing Environmental Studies Elective-4 Elective-5 Graduation Project (2)	Lec. 3 3 3 2 3 3 -	Hours Applid Tut - - - -	/ Week cations Lab 1 - 1 1 4	x Total 4 4 2 4 4 4 4 4	Credi t Hours 3 3 2 3 3 3 2	Year Work 20 20 15 30 30 100	Marks Lab and Oral 20 20 - 30 30 100	Written 60 60 35 90 90 -	Exam Time 3 3 2 2 2 2 2 2	Total Marks 100 100 50 150 200
Secon Code No. CSE 4720 CSE 4721 GEN 4722 - - - - - Tota	d Term Course Title Modelling and Simulation Mobile Computing Environmental Studies Elective-4 Elective-5 Graduation Project (2) I Hours / Week	Lec. 3 3 2 3 3 - 14	Hours Applie Tut - - - - - - -	/ Week cations Lab 1 1 - 1 1 4 8	Total 4 4 4 4 4 4 4 4 4 2 4 4 4 4 4 4 4 4 4	Credi t Hours 3 3 2 3 3 3 2 2 16	Year Work 20 20 15 30 30 100	Marks Lab and Oral 20 20 - 30 30 30 100	Written 60 60 35 90 90 - 750	Exam Time 3 3 2 2 2 2 2 2	Total Marks 100 100 50 150 200

Selected Topics: The department determines the subjects that have been added to the list of elective courses.

 Preparation for the fourth year graduation project continues at a rate of 36 hours per week for four weeks after the second semester exams.

VII. <u>ELECTIVES:</u>

	Track 1	Track 2	Track 3
	Embedded Systems	Robotics for Computer Engineering	Distributed and Mobile Computing
Elective-1	(CSE 3712) Embedded Systems Architecture	(CSE 3713) Robotics: Kinematics, Dynamics and Control	(CSE 3714) Cloud Computing
Elective-2	(CSE 4704) Embedded Systems	(CSE 4705) Sensors, Perception and Smart Systems	(CSE 4706) Mobile Cloud Computing
Elective-3	(CSE 4712) Real-Time Operating System	(CSE 4713) Intelligent and Autonomous Robotic Systems	(CSE 4714) Network and Internet Programming
Elective-4	(CSE 4723) Sensor Network and Internet of Things	(CSE 4724) Image Analysis and Computer Vision	(CSE 4725) Sensor Network and Internet of Things
Elective-5	(CSE 4731) Selected Topics in Embedded Systems	(CSE 4732) Selected Topics in Robotics for Computer Engineering	(CSE 4733) Selected Topics in Distributed and Mobile Computing
	Track 4	Track 5	Track 6
	Multimedia and Computer Graphics	Control and Systems Engineering	Big Data Analytics
Elective-1	(CSE 3715) Multimedia and Computer Graphics	(CSE 3716) Nonlinear and Adaptive Control Systems	(CSE 3717) Data Mining and Business Intelligence
Elective-2	(CSE 4707) Digital Image Processing	(CSE 4708) Process Control & Automation	(CSE 4709) Information Storage Systems
Elective-3	(CSE 4715) Image Analysis and Computer Vision	(CSE 4716) Principles of Optimal and robust Control	(CSE 4717) Bioinformatics
Elective-4	(CSE 4726) Augmented and Virtual Reality (AR/VR)	(CSE 4727) Intelligent and Autonomous Systems	(CSE 4728) Big data analytics
Elective-5	(CSE 4734) Selected Topics in Multimedia and Computer Graphics	(CSE 4735) Selected Topics in Control and Systems Engineering	(CSE 4736) Selected Topics in Big data analytics
	Track 7	Track 8	
	Software systems	Cyber Security	
Elective-1	(CSE 3718) Advanced database systems	(CSE 3719) Introduction to Malware Analysis	
Elective-2	(CSE 4710) Web and cloud based systems	(CSE 4711) Cyber Security and Defense In-Depth	
Elective-3	(CSE 4718) Advanced Software Engineering	(CSE 4719) Systems and Internet Security Technologies	
Elective-4	(CSE 4729) Secure Software Development	(CSE 4730) Embedded Security Tools and Techniques	
Elective-5	(CSE 4737) Selected Topics in software systems	(CSE 4738) Selected Topics in Cyber Security	