Curriculum for 3-yr MTech in Communications and Signal Processing

Department of Electrical Engineering

Draft curricula of 3-year MTech for both August and January sessions. The course content is the same as the new approved curriculum for 2-year MTech in CSP.

Summary

Course type	Credits
Department core	14
Department electives	6
Labs	3
Soft skills	2
Free electives	1
Thesis	24
Total	50

August batch

Course number	Semester 1	Credits	Course type
EE5817	Random variables and stochastic processes	3	Department core
EE5837	Principles of digital communication	3	Department core
EExxxx	Department softcore (basket of courses below)	3	Department core
EE5801	Communications lab	1	Labs
EE6911	MTech RA thesis stage 1	1	
EE5901	Industry lectures	0	Soft skills

	Total	11	
	Semester 2		
EE5803	FPGA lab	1	Labs
EE5802	DSP lab	1	labs
LA5180	English communication	1	Soft skills
EExxxx	Department softcore (basket of courses below)	3	Department core
EE6912	MTech RA thesis stage 2	2	
	Total	8	

Course number	**Semester 3**	Credits	Course type
EE5807	Advanced digital signal processing	2	Department core
EExxxx	Department electives	3	Elective
EE6913	MTech RA thesis stage 3	2	Thesis
	Total	7	
	Semester 4		
EExxxx	Department electives	3	Elective
	Free electives	1	Elective
EE6914	MTech RA thesis stage 4	4	
	Total	8	
	Semester 5		
EE6915	MTech thesis RA stage 5	8	
	Total	8	
	Semester 6		
EE6916	MTech RA thesis stage 6	8	

		8	
	Total		

January batch

Course number	**Semester 1**	Credits	Course type
EE5803	FPGA lab	1	Labs
EE5802	DSP lab	1	labs
LA5180	English communication	1	Soft skills
EExxxx	Department softcore (basket of courses below)	3	Department core
EE6911	MTech RA thesis stage 1	1	
EE5901	Industry lectures	0	Soft skills
	Total	7	

Course number	**Semester 2**	Credits	Course type
EE5817	Random variables and stochastic processes	3	Department core
EE5837	Principles of digital communication	3	Department core
EExxxx	Department softcore (basket of courses below)	3	Department core
EE5801	Communications lab	1	Labs
EE6912	MTech RA thesis stage 2	2	
	Total	12	

Course	**Semester 3**	Credits	Course type

number			
EExxxx	Department electives	5	Elective
EE6913	MTech RA thesis stage 3	2	Thesis
	Total	7	
	Semester 4		
EE5807	Advanced digital signal processing	2	
EExxxx	Department electives	1	Elective
	Free electives	1	Elective
EE6914	MTech RA thesis stage 4	4	
	Total	8	
	Semester 5		
EE6915	MTech RA thesis stage 5	8	
	Total	8	
	Semester 6		
EE6916	MTech thesis stage 6	8	
	Total	8	

Softcore basket
(at least 6 credits)

Students can pick any 6 credits of these core courses, depending on their thesis topic or interest

Course number	**Semester 2**	Credits
EE5609	Matrix theory	3
EE5610 OR EE5601+ EE5602+ EE5603	Pattern recognition and machine learning	3 OR 1+1+1
EE5847	Information theory	1
EE5390	Source coding	1
EE6317	Channel coding	1
EE5606	Convex optimization	3
EExxxx	Communication networks	3
EE5342	Detection theory	1
EE5357	Estimation theory	1
EE6340	Wireless communication	3
EE6350	Multiple antenna systems	3