

Mahindra École Centrale

Bahadurpally, Hyderabad 500043

ACADEMIC REGULATIONS FOR FOUR-YEAR UNDERGRADUATE DEGREE PROGRAMS

(Applicable to students joining in the Academic Year 2018-19 and onwards)

Computer Science and Engineering (2018)						
Semester 1						
	Code	Course	L	T	P	Credits
1	MA 101	Mathematics – I	4	1	0	5
2	CH 101	Chemistry – I	2	1	0	3
3	ES 101	Introduction to Electrical Engineering	2	1	2	4
4	ES 102	Engineering Drawing	0	0	3	1.5
5	ES 103	Earth and Environmental Sciences	2	0	0	2
6	ES 104	Thermodynamics	2	1	0	3
7	SE 101	Media Project	0	0	3	1.5
8	HS 101	English and Humanities – I	1	2	2	4
9	FL 101	French Language & Culture – I	0	2	0	0
						24
			13	8	10	
		Total contact hours	31			
Semester 2						
	Code	Course	L	T	P	Credits
1	MA 102	Mathematics – II	3	1	0	4
2	PH 101	Physics – I	2	1	2	4
3	CH 102	Chemistry – II	2	0	2	3
4	ES 105	Electronics	2	1	2	4
5	ES 106	Introduction to Computer Science	2	1	2	4
6	ES 107	Workshop Practice	0	0	2	0
7	SE 102	Introduction to Enterprises & Economy	2	1	0	3
8	HS 102	Professional Ethics	0	1	0	1
9	FL 102	French Language & Culture – II	0	2	0	0
						23
			13	8	10	
		Total contact hours	31			

Semester 3

	Code	Course	L	T	P	Credits
1	MA 203	Mathematics – III	3	1	0	4
2	PH 202	Physics – II	3	1	2	5
3	ES 208	Mechanics	2	1	0	3
4	ES 209	Signals & Systems	2	1	2	4
5	ES 210	Data Structures	2	2	2	5
6	CS 201	Discrete Mathematical Structures	2	0	0	2
7	FL 203	French Language & Culture – III	0	2	0	0
						23
			14	8	6	
		Total contact hours	28			

Semester 4

	Code	Course	L	T	P	Credits
1	ES 211	Numerical Methods	3	0	2	4
2	CS 202	Digital Logic Design and Computer Architecture	3	1	0	4
3	CS 203	Design and Analysis of Algorithms	2	1	2	4
4	CS 204	Object Oriented Programming	2	0	2	3
5	CS 205	Theory of Computation	3	0	0	3
6	SE 203	Design Thinking	1	0	2	2
7	FL 204	French Language & Culture – IV	0	2	0	0
						20
			14	4	8	
		Total contact hours	26			

Semester 5

	Code	Course	L	T	P	Credits
1	MA 304	Mathematics – IV	3	1	0	4
2	ES 312	Introduction to Materials Sciences	2	0	2	3
3	CS 306	Principles of Programming Languages	2	0	0	2
4	CS 307	Operating Systems	3	0	2	4
5	CS 308	Database Management Systems	3	0	2	4
6	CS 309	Microprocessors and Interfacing	2	0	2	3
7	HS-E1	HSS + Mgmt. - Elective – I	2	0	0	2
8	FL 305	French Language & Culture – V	0	2	0	0
						22
			17	3	8	
		Total contact hours	28			

Semester 6

	Code	Course	L	T	P	Credits
1	CS 310	Computer Networks	3	0	2	4
2	CS 311	Web Programming	2	0	2	3
3	CS 312	Software Engineering	2	0	2	3
4	CS 313	Machine Learning	2	0	2	3
5	PR 301	Third year team project	0	0	6	3
6	E1	Elective – I	3	0	0	3
7	HS-E2	HSS + Mgmt. - Elective – II	2	0	0	2
8	FL 306	French Language & Culture – VI	0	2	0	0
						21
			14	2	14	
		Total contact hours	30			

Semester 7						
	Code	Course	L	T	P	Credits
1	CS 414	Distributed Systems	3	0	2	4
2	CS 415	Compiler Design	3	0	0	3
3	CS 416	Cryptography and Network Security	3	0	2	4
4	HS-E3	HSS + Mgmt. - Elective – III	2	0	0	2
5	E2	Elective – II	3	0	0	3
6	E3	Elective – III	3	0	0	3
7	PR402	Year-4 Project	0	1	4	3
8	FL 407	French Language & Culture –VII	0	2	0	0
						22
			17	3	8	
		Total contact hours	28			
Semester 8						
	Code	Course	L	T	P	Credits
1	E4	Elective – IV	3	0	0	3
2	E5	Elective – V	3	0	0	3
3	PR 403	Year-4 Project	0	5	8	9
4	FL 408	French Language & Culture – VIII	0	2	0	0
						15
			6	7	8	
		Total contact hours	21			

Total credits 170

List of Electives for Semesters 6, 7 and 8:

S.No.	Code	Course	L	T	P	Credits
1	CS 452	Advanced Data Analytics	3	0	0	3
2	CS 453	Mobile Communication and Computing	3	0	0	3
3	CS 454	VLSI Design Using Verilog	3	0	0	3
4	CS 456	Social Computing	3	0	0	3
5	CS 457	Deep Learning	3	0	0	3
6	CS 458	Information Retrieval and Natural Language Processing	3	0	0	3
7	CS 461	High Performance Computing	3	0	0	3
8	CS 462	Cryptography and Information Security	3	0	0	3
9	CS 463	Performance Evaluation of Computer Networks	3	0	0	3
10	CS 464	Wireless Sensor Networks	3	0	0	3
11	EE 451	Information Theory and Coding	3	0	0	3
12	EE 471	Digital Image Processing	3	0	0	3
13	EE 472	Computer Vision	3	0	0	3
14	EE 484	Advanced Microprocessors	3	0	0	3
15	EE 485	IoT System Architecture and Design	3	0	0	3
16	EE 486	Sensors and Instrumentation	3	0	0	3
17	EE 487	High Performance Embedded Systems	3	0	0	3
18	ME 452	Introduction to Operations Research	3	0	0	3
19	ME 467	Introduction to Robotics	3	0	0	3
20	ME 469	Computational Fluid Dynamics	3	0	0	3
21	ME 470	Robotics: Dynamics and Control	3	0	0	3
22	MA 450	Numerical Linear Algebra	3	0	0	3
23	MA 451	Meshfree Methods	3	0	0	3
24	MA 452	Boundary Element Method and Boundary Integral Equations	3	0	0	3
25	MA 453	PDE Based Image Processing	3	0	0	3
26	MA 454	Topology and Operator Theory	3	0	0	3

27	MA 455	Infinite dimensional Control Theory	3	0	0	3
28	MA 456	Bayesian Statistics	3	0	0	3
29	MA 457	Financial Mathematics	3	0	0	3
30	MA 458	Nonlinear Conservation Laws and Applications	3	0	0	3

List of HS Electives: Semesters 6 & 7

S.No.	Code	Course	L	T	P	Credits
1	HS 500	Selections from World Literature	2	0	0	2
2	HS 501	Business Communication	2	0	0	2
3	HS 502	Visual Story Telling	2	0	0	2
4	HS 503	Introduction to Culture Studies	2	0	0	2
5	HS 504	Literature and Visual Arts	2	0	0	2
6	HS 505	Cinema and Philosophy	2	0	0	2
7	HS 506	The Humanities for a Critical Understanding of the World	2	0	0	2
8	HS 507	Academic Writing	2	0	0	2
9	HS 508	Urban Studies: Reading the City	2	0	0	2
10	HS 509	Contemporary Shakespeare: Readings and Adaptations	2	0	0	2
11	HS 510	Philosophical Arguments	2	0	0	2