

STUDENTS ADMITTED IN THE YEAR 2013 onwards

Semester I			
S. No.	Interactive Learning Modules	Credits	Examination code
I.1	Seeing the world through Calculus . First steps through symbolic mathematics	6	911106
I.2	Linearity in Nature: Engineering through Linear Algebra . First steps through numerical algorithms	6	911107
I.3	Optimizing memory use through Data Structure and Design	4	911108
I.4	The Science and Art of Logic and Programming: Algorithms	4	911109
I.5	Physics at work I: Deconstructing Machines	6	911110
I.6	Business, Entrepreneurship and Innovation Management	4	911111
I.7	Environment Science & Ecosystem Management	2	911112
Total credits		32	
Semester II			
II.1	Modeling continuous change through ordinary differential equations and complex analysis	6	911206
II.2	Understanding real life situations through Discrete Mathematics	4	911207
II.3	Decoding Computation Structure & Logic	4	911208
II.4	Reflecting thought processes via Object Oriented Programming	6	911209
II.5	Physics at work II: Deconstructing devices	6	911210
II.6	Art of Communication & Creative Writing	3	911211
II.7	Knowing specialization streams (Electives)		
II.7.1	Business processes and strategic IT alignment	3	911212
II.7.2	Electronics at work & circuit simulations	3	911213
II.7.3	Exploring Biology - Systems Approach	3	911214
Total credits		32	


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Semester III			
III.1	Modeling change in the world around us: <i>Partial Differential Equations</i>	4	911308
III.2	Handling information through <i>Data Modeling & Design</i>	6	911309
III.3	Instructing computing devices: <i>Operating System</i>	4	911310
III.4	Language and Communication: <i>Computational Linguistics</i>	4	911311
III.5	Specialization Stream – 1		
III.5.1	Understanding <i>Economic Behavior</i> : The <i>micro</i> level	4	911312
III.5.2	<i>Electronics circuit elements and instruments</i>	4	911313
III.5.3	<i>Integrative Biology</i>	4	911314
III.6	Specialization Stream – 2		
III.6.1	<i>Principles of Management</i>	4	911315
III.6.2	<i>Electronics circuit elements and instruments – Innovation Lab</i>	4	911316
III.6.3	<i>Cell: Biochemical and Molecular perspective</i>	4	911317
III.7	Summer Internship : projects drawn from the world around us	6	911318
Total credits		32	
Semester IV			
IV.1	Does Nature play dice?: The amazing world of <i>probability and statistics</i>	6	911408
IV.2	Understanding Computing <i>Systems Architecture</i>	6	911409
IV.3	<i>Software Engineering</i>	3	911410
IV.4	<i>Science, Philosophy, Truth: Impact of technology</i>	3	911411
IV.5	Specialization Stream – 3		
IV.5.1	Understanding <i>Economic Behaviour</i> : The <i>macro</i> level	4	911412
IV.5.2	<i>Digital electronics and logic design</i>	4	911413
IV.5.3	<i>Genes to Genomes</i>	4	911414
IV.6	Specialization Stream – 4		
IV.6.1	Bringing Companies and clients together: <i>Sales & Marketing management</i>	4	911415
IV.6.2	<i>Digital electronics and logic design – Innovation Lab</i>	4	911416
IV.6.3	<i>Flow of information in living systems</i>	4	911417
IV.7	Semester long innovation project	6	911418
Total credits		32	


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Semester V			
V.1	Algorithms for Computational Mathematics: Numerical Methods	6	911510
V.2	Information exchange in computing devices: Data Communication & Networking	4	911511
V.3	Computer and Brain: Knowledge Discovery and Artificial Intelligence	3	911512
V.4	History, culture & civilization	3	911513
V.5	Specialization Stream – 5		
V.5.1	Maximizing performance: Human Resource management and Organizational Behavior	4	911514
V.5.2	Embedded systems studio - I	4	911515
V.5.3	Biological Networks : from Micro to Macro niche	4	911516
V.6	Specialization Stream – 6		
V.6.1	Efficient manufacturing process: Production and Operations Management	6	911517
V.6.2	Signals & Systems Engineering	6	911518
V.6.3	Applied Genomics and Proteomics : Methods and techniques	6	911519
V.7	Industrial mini project	6	911520
Total credits		32	
Semester VI			
VI.1	Linear Construction of Actions: Engineering through Linear Programming and Game Theory	4	911610
VI.2	Computer Graphics and Visualization	6	911611
VI.3	Advanced Algorithm Design	3	911612
VI.4	Art & Design	3	911613
VI.5	Specialization Stream – 7		
VI.5.1	Handling money: Finance management	4	911614
VI.5.2	Embedded systems studio – II	4	911615
VI.5.3	Biodefense and Bioengineering	4	911616
VI.6	Specialization Stream – 8		
VI.6.1	e - Business : Organization and Strategy	6	911617
VI.6.2	Control systems	6	911618
VI.6.3	In silico Biology	6	911619
VI.7	Project in Industry, Society and Villages	6	911620
Total credits		32	


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Semester VII			
VII.1	Fluidity in nature: computational interpretations	4	911710
VII.2	Computer Language Design & Engineering	3	911711
VII.3	Software Project Management	6	911712
VII.4	Visual arts & aesthetics	3	911713
VII.5	Specialization Stream – 9		
VII.5.1	Environment Management	4	911714
VII.5.2	Engineering at Molecular Scale: Devices and Nanotechnology	4	911715
VII.5.3	Modeling and Simulating Brain Functions: Computational Neuroscience	4	911716
VII.6	Specialization Stream – 10		
VII.6.1	Business automation strategies. ERP. Case studies and project in industry	6	911717
VII.6.2	Circuit Analysis and Synthesis	6	911718
VII.6.3	Systems Biology	6	911719
VII.7	Industrial mini project, Simulation of real time cases	6	911720
Total credits		32	
Semester VIII			
VIII.1	Industrial Internship/Major Project	32	911804
Total credits		32	


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