

### Computational Natural Sciences (Dual Degree) - Semester wise Plan (Subject to minor changes)

Year & Sem	Course Code	Course Name	Full/Half Sem	Lectures-L, Tutorial-T, Practical-P			Credits earned							
				Hours per week			Ins Core	Prog Core	Prog Elec	CS Elec	Maths	Hum	Open Elec	Hons
				L	T	P								
I-I	Monsoon													
	MA1.101	Discrete Structures	Full	3	1	0	-	-	-	-	4	-	-	-
	MA2.101	Real Analysis	Full	3	1	0	-		-	-	4	-	-	-
	SC4.101	Computing in Sciences-1	Half	1	0	3	-	2	-	-	-	-	-	-
	CS0.101	Computer Programming	Full	3	1	3	-	5	-	-	-	-	-	-
	EC2.101	Digital Systems & Microcontrollers	Full	3	1	3	-	5	-	-	-	-	-	-
	OC2.101	Arts-1	Full	0	2	2	2	-	-	-	-	-	-	-
	OC1.101	Sports-1	Full	0	0	2	1	-	-	-	-	-	-	-
	OC3.101	Value Education-1	Full	2	1	0	2	-	-	-	-	-	-	-
		Sub Total		15	7	13	5	12	0	0	8	0	0	0
	Total		25											
I-II	Spring													
	MA3.101	Linear Algebra	Full	3	1	0	-	-	-	-	4	-	-	-
	SC1.102	Classical Mechanics	Half-1	3	1	0	-	2	-	-	-	-	-	-
	SC1.101	Electrodynamics	Half-2	3	1	0	-	2	-	-	-	-	-	-
	SC2.101	General & Structural Chemistry	Full	3	1	0	-	4	-	-	-	-	-	-
	SC4.102	Computing in Sciences-2	Half	1	0	3	-	2	-	-	-	-	-	-
	CS1.201	Data Structures & Algorithms	Full	3	1	3	-	5	-	-	-	-	-	-
	CS6.201	Introduction to Software Systems	Full	1	0	3	-	2	-	-	-	-	-	-
	OC1.102	Sports-2	Full	0	0	2	1	-	-	-	-	-	-	-
	OC2.102	Arts-2	Full	0	2	2	2	-	-	-	-	-	-	-
		Sub Total		17	7	13	3	17	0	0	4	0	0	0
		Total		24										

Year & Sem	Course Code	Course Name	Full/Half Sem	Lectures-L, Tutorial-T, Practical-P	Credits earned								
				Hours per week	Ins Core	Prog Core	Prog Elec	CS Elec	Maths	Hum	Open Elec	Hons	

II-I	Monsoon													
	MA4.101	Probability and Statistics	Full	3	1	0	-	-	-	-	4	-	-	-
	SC1.203	Quantum Mechanics	Full	3	1	0	-	4	-	-	-	-	-	-
	SC3.101	Introduction to Biology	Full	3	1	0	-	4	-	-	-	-	-	-
	SC4.110	Science Lab - 1	Half	0	0	3	-	2	-	-	-	-	-	-
	CS1.301	Algorithm Analysis and Design	Full	3	1	0	-	4	-	-	-	-	-	-
	CS6.301	Design & Analysis of Software Systems	Full	3	1	0	-	4	-	-	-	-	-	-
	OC1.103	Sports-3	Full	0	0	2	1	-	-	-	-	-	-	-
	Sub Total			15	5	5	1	18	0	0	4	0	0	0
Total		23												
II-II	Spring													
	CS2.201	Computer Systems Organization	Full	3	1	0	-	4	-	-	-	-	-	-
	CS7.301	Machine, Data and Learning	Full	3	1	0	-	4	-	-	-	-	-	-
	CS1.302	Automata Theory	Half	3	1	0	-	2	-	-	-	-	-	-
	CS4.301	Introduction to Databases	Half	3	1	0	-	2	-	-	-	-	-	-
	SC1.204	Thermodynamics	Half-1	3	1	0	-	2	-	-	-	-	-	-
	SC1.205	Statistical Mechanics	Half-2	3	1	0	-	2	-	-	-	-	-	-
	SC2.203	Biomolecular Structures	Half-1	3	1	0	-	2	-	-	-	-	-	-
	SC2.202	Organic Chemistry	Half-2	3	1	0	-	2	-	-	-	-	-	-
	SC4.111	Science Lab-2	Half	0	0	3	-	2	-	-	-	-	-	-
	OC1.104	Sports-4	Full	0	0	2	1	-	-	-	-	-	-	-
	OC3.102	Value Education-2	Full	2	1	0	2	-	-	-	-	-	-	-
	Sub Total			26	9	5	3	22	0		0	0	0	0
	Total		25											

Year & Sem	Course Code	Course Name	Full/Half Sem	Lectures-L, Tutorial-T, Practical-P			Credits earned								
				Hours per week			Ins	Core	Prog Core	Prog Elec	CS Elec	Maths	Hum	Open Elec	Hons
				L	T	P									
III-I	Monsoon														
	CS3.301	Computer Systems Engineering	Full	3	1	0	-	4	-	-	-	-	-	-	-
		CS elective - 1	Full	3	1	0	-	-	-	4	-	-	-	-	-
	SC2.304	Spectroscopy	Half-1	3	1	0	-	2	-	-	-	-	-	-	
	SC2.305	Chemical Kinetics	Half-2	3	1	0	-	2	-	-	-	-	-	-	
	SC3.202	Bioinformatics	Half-1	3	1	0	-	2	-	-	-	-	-	-	
	SC3.203	Systems Biology	Half-2	3	1	0	-	2	-	-	-	-	-	-	
	SC4.120	CNS Honors - 1	Full	0	2	6	-	-	-	-	-	-	-	2	
		CCNSB seminar - 1		0	-	-	-	-	-	-	-	-	-	-	
		Sub Total		18	8	6	0	12	0	4	0	0	0	2	
	Total	18													
III-II	Spring														
	SC4.121	CNS elective - 1	Full	3	1	0	-	-	4	-	-	-	-	-	
		CNS elective - 2	Full	3	1	0	-	-	4	-	-	-	-	-	
		CS elective - 2	Full	3	1	0	-	-	-	4	-	-	-	-	
		Introduction to Human Sciences	Full	3	1	0	-	-	-	-	-	4	-	-	
		CCNSB seminar - 2	Full				0	-	-	-	-	-	-	-	
		CNS Honors - 2	Full	0	2	6	-	-	-	-	-	-	-	2	
		Sub Total		12	6	6	0	0	8	4	0	4	0	2	
	Total	18													
	IV-I	Monsoon													
SC4.122		CNS elective - 3	Full	3	1	0	-	-	4	-	-	-	-	-	
		CS elective - 3	Full	3	1	0	-	-	-	4	-	-	-	-	
		CS elective - 4	Full	3	1	0	-	-	-	4	-	-	-	-	
		Ethics-1 & Ethics-2	Full	3	1	0	-	-	-	-	-	4	-	-	
		CNS Honors - 3	Full	0	2	6	-	-	-	-	-	-	-	2	
		CCNSB seminar - 3	Full				0	-	-	-	-	-	-	-	
		Sub Total		12	6	6	0	0	4	8	0	4	0	2	
Total		18													

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				Hours per week			Ins	Core	Prog Core	Prog Elec	CS Elec	Maths	Hum	Open Elec	Hons
				L	T	P									
IV-II	Spring														
	SC4.123	CNS elective - 4	Full	3	1	0	-	-	4	-	-	-	-	-	
		CNS elective - 5	Full	3	1	0	-	-	4	-	-	-	-	-	
		CS elective - 5	Full	3	1	0	-	-	-	4	-	-	-	-	
		HSS elective - 2	Full	3	1	0	-	-	-	-	-	4	-	-	
		CNS Honors - 4	Full	0	2	6	-	-	-	-	-	-	-	2	
		CCNSB seminar - 4	Full				0	-	-	-	-	-	-	-	
		Sub Total		12	6	6	0	0	8	4	0	4	0	2	
Total	18														
V-I	Monsoon														
	SC4.124	Open Elective-1	Full	3	1	0	-	-	-	-	-	-	4	-	
		Thesis	Full				-	12	-	-	-	-	-	-	
		CCNSB seminar - 5	Full				0	-	-	-	-	-	-	-	
		Sub Total		3	1	0	0	12	0	0	0	0	4	0	
		Total	16												
V-II	Spring														
	SC4.125	Open Elective-2	Full	3	1	0	-	-	-	-	-	-	4	-	
		Thesis	Full				-	12	-	-	-	-	-	-	
		CCNSB seminar - 6	Full				0	-	-	-	-	-	-	-	
		Sub Total		3	1	0	0	12	0	0	0	0	4	0	
Total	16														

	Total	%
Institute Core	12	7
CS Core	41	23
Domain (CNS) Core	40	23
Programme Electives	20	11
Maths	16	9
CS Electives	20	11
Humanities	12	7
Open Electives	8	5
Honours	8	5
<b>Total</b>	<b>177</b>	<b>100</b>