

Courses offered in Spring 2020

Semester II: BS-MS program

Course Code	Name of the Course	Instructor* & participating faculty	Credits
BIO121	Introductory Biology II: Genetics and Molecular Biology	Prof. B J Rao*, Dr. V Siva Kumar, Dr. Pakala Suresh Babu	3
BIO122	Biology Lab II: Biochemistry and Molecular Biology	Dr. V Siva Kumar*, Dr. Sanjay Kumar	3
CHM121	Physical Chemistry	Dr. Padmabati Mondal*, Dr. Soumit Sankar Mandal	3
CHM122	Chemistry Lab I	Dr. Pankaj Kumar Koli*, Dr. Padmabati Mondal, Dr. Nirmala Krishnamurthy	3
MTH121	Single Variable Calculus	Dr. Subhash	3
MTH122	Linear Algebra and Applications	Dr. Venketasubramanian C G	3
PHY121	Foundations of Physics II: Waves & Optics	Dr. Chitrasen Jena	3
PHY122	Physics Lab I	Dr. Kanagasekaran*, Dr. Ravi Kumar Pujala, Dr. Dileep Mampallil	3
HSS122	Critical Reading, Writing and Communication	Dr. P. Lakshman Rao	2

Semester IV: BS-MS program

Course Code	Course Name	Instructor* & participating faculty	Credits
BIO221	Introductory Biology IV- Biology of Systems	Dr. Vasudharani Devanathan*, Guest faculty	3
CHM221	Organic Chemistry	Dr. Shibdas Banerjee	3
CHM222	Chemistry Lab III	Dr. Kiran Kumar*, Dr. Sudipta Roy, Dr. Janardan Kundu	3
MTH221	Probability and Statistics	Dr. Souradeep Majumder*, Dr. Subhash	3
MTH222	Basic Structures in Mathematics	Dr. Shalini Bhattacharya*, Dr. R Lakshmi Lavanya	3
PHY221	Foundations of Physics IV: Quantum Physics	Dr. Jessy Jose	3
PHY222	Physics Lab III	Dr. Ravi Kumar Pujala*, Dr. Sasmita Mohakud, Dr. Sunil Kumar S	3
HSS221	History of Science	Prof. K. Vijayamohanan Pillai	2

Semester VI & VIII: BS-MS; Sem II & IV: IPhD; PhD

Course Code	Course Name	Instructor* & participating faculty	Credits	Offered in Semesters		
				BS - MS	IPhD	PhD
BIO302	Lab Rotation	Dr. Nandini Rajamani	4		II	
BIO320	Semester Project	Dr. V V Robin	3	VI		
BIO321/621	Microbiology	Dr. Suchi Goel	4	VI,VIII	II,IV	Y
BIO324/624	Animal Physiology	Dr. Ramkumar Sambasivan	4	VI, VIII	II,IV	Y
BIO325/625	Cancer Biology	Dr. Pakala Suresh Babu*, Dr. V Siva Kumar	4	VI, VIII	II,IV	Y
BIO328/628	Advanced Molecular Biology	Dr. Pakala Suresh Babu	4	VI, VIII	II,IV	Y
BIO341/641	Cell Biology	Dr. Sanjay Kumar*, Dr. Viji Subramanian	3 / 4	VI,VIII	II,IV	Y
BIO402	Lab Rotation	Dr. Nandini Rajamani	4		IV	
BIO420	Semester Project	Dr. V V Robin	3	VIII		
BIO426/726	Plant Developmental Biology	Dr. Swarup Roy Choudhury, Dr. Eswarayya Ramireddy	4	VI	II,IV	Y
BIO427/727	Bioinformatics lab	Dr. Sreenivas Chavali	4	VI, VIII	II,IV	Y
BIO441/741	Elements of Structural Biology	Dr. Nibedita Pal	3	VI, VIII	II,IV	Y
BIO443/743	Cellular Biophysics	Dr. Nibedita Pal *, Dr. Ravi Kumar Pujala, Dr. Tapan Chandra Adhyapak	3	VI, VIII	II,IV	Y
BIO445/745	Advanced Neuroscience	Dr. Vasudharani Devanathan*, Prof. G.Ambika	3	VI,VIII	II,IV	Y
BIO444/744	Chemical Biology	Dr. Ashwani Sharma*, Prof. K.N.Ganesh	3	VI, VIII	II, IV	Y
BIO461/761	Genome Sequence Analyses	Dr. Nandini Rajamani *, Dr. Sreenivas Chavali	3	VI, VIII	II,IV	Y
BIO521/821	Macroevolution and Phylogenetic Analyses	Dr. V V Robin*, Dr. Nandini Rajamani	2		IV	Y
BIO522/822	Microevolutionary Genetics Analyses	Dr. V V Robin*, Dr. Nandini Rajamani	2		IV	Y

BIO523/823	Exosome Biology	Dr. Suchi Goel	2		IV	Y
BIO524/824	Genome Editing	Dr. Viji Subramanian	2		IV	Y
CHM302	Lab Rotation	Dr. Soumit Sankar Mandal*, Dr. Raghunath O Ramabhadran	4		II	
CHM320	Semester Project	Dr. Vanchiappan Aravindan	3	VI		
CHM325/625	Chemical Kinetics and Surface Chemistry	Dr. Jatish Kumar*, Prof. K. Vijayamohanan Pillai	4	VI,VIII	II,IV	Y
CHM322/622	Organic Synthesis I	Dr. Gopinath Purushothaman*, Dr. Kiran Kumar	4	VI, VIII	II, IV	Y
CHM323/623	Organometallic Chemistry	Dr. Sudipta Roy*, Dr. E Balaraman	4	VI, VIII	II, IV	Y
CHM321/621	Statistical Thermodynamics	Dr. Rakesh S. Singh*, Dr. Janardan Kundu	4	VI,VIII	II,IV	Y
CHM326/626	Electrochemistry	Dr. Soumit Sankar Mandal*, Dr. Vanchiappan Aravindan	4	VI, VIII	II, IV	Y
CHM402	Lab Rotation	Dr. Raghunath O Ramabhadran , Dr. Soumit Sankar Mandal *	4		IV	
CHM420	Semester Project	Dr. Vanchiappan Aravindan	3	VIII		
CHM421/721	Quantum Chemistry II	Dr. Raghunath O Ramabhadran *	4	VIII	II, IV	Y
CHM422/722	Organic Synthesis II	Dr. Rajesh Viswanathan*, Dr. Kiran Kumar	4	VIII	II,IV	Y
CHM423/723	Chemistry of d- and f-block Elements	Dr. Arun Kumar Bar	4	VIII	II,IV	Y
CHM441/741	Inorganic Spectroscopy	Dr. E Balaraman*, Dr. Pankaj Kumar Koli	3	VIII	II, IV	Y
CHM442/742	Nano Science	Dr. Vanchiappan Aravindan* , Prof. K. Vijayamohanan Pillai	3	VIII	II, IV	Y
CHM443	Food Chemistry	Dr. Nirmla Krishnamurthy	3	VI, VIII	II, IV	

CHM444/744	Chemical Biology	Dr. Ashwani Sharma*, Prof. K. N. Ganesh	3	VI,VIII	II, IV	Y
CHM521/821	NMR Spectroscopy in Structural Analyses	Dr. Rajesh Viswanathan	2		IV	Y
ECS320	Semester Project	Dr. Sai Kranthi	3	VI		
ECS321	Introduction to Earth and Climate Science	Dr. Aniket Chakrabarty*, Dr. Sai Kranthi	4	VI		
ECS420	Semester Project	Dr. Aniket Chakrabarty	3	VIII		
ECS421/721	Igneous Petrology	Dr. Aniket Chakrabarty	4	VIII		Y
ECS422/722	Atmospheric Dynamics	Dr. Sai Kranthi	4	VIII		Y
ECS720	Computational techniques for Earth and Climate Sciences	Dr. Aniket Chakrabarty*, Dr. Sai Kranthi	4			Y
MTH302	Semester Project	Dr. Gururaja H. A.	4		II	
MTH320	Semester Project	Dr. Shalini Bhattacharya	3	VI		
MTH321	Rings and Modules	Dr. Anilatmaja Aryasomayajula*, Dr. Gunja Sachdeva	4	VI, VIII	II, IV	
MTH322	Complex Analysis	Dr. Gururaja H. A. *, Dr. Repaka Subha Sandeep	4	VI, VIII	II, IV	
MTH323	Calculus on Manifolds	Dr. Gururaja H. A. *, Dr. Souradeep Majumder	4	VI, VIII	II, IV	
MTH324	Measure Theory and Integration	Dr. Shalini Bhattacharya	4	VI, VIII	II, IV	
MTH342	Introduction to Classical Groups	Dr.Venketasubramanian C G	3	VI, VIII	II, IV	
MTH402	Semester Project	Dr. Gururaja H. A.	4		IV	
MTH420	Semester Project	Dr. Shalini Bhattacharya	3	VIII		
MTH421	Commutative Algebra	Dr. Girja Shanker Tripathi	4	VIII	IV	
MTH422	Fourier Analysis	Dr. R. Lakshmi Lavanya	4	VI,VIII	II,IV	
MTH423	Algebraic Topology	Prof. Nagaraj D S	4	VIII	IV	
MTH424	Partial Differential Equations	Dr. Anilatmaja Aryasomayajula	4	VIII	IV	

MTH425	Differentiable Manifolds and Lie Groups	Dr. Gururaja H. A.*, Participating faculty	4	VIII	IV	
MTH621	Algebra II	Dr. Girja Shanker Tripathi	4		IV	II
MTH623	Topology II	Prof. Nagaraj D S	4		IV	II
MTH627	Differential Geometry	Dr. Gururaja H. A.*, Participating faculty	4		IV	II
PHY302	Semester Project	Dr. Sunil Kumar S	4		II	
PHY320	Semester Project	Prof. G. Ambika	3	VI		
PHY321/621	Quantum Mechanics II	Dr. Sambuddha Sanyal	4	VI,VIII	II	Y
PHY322	Statistical Thermodynamics	Dr. Rakesh S. Singh*, Dr. Janardan Kundu	4	VI,VIII	II,IV	
PHY323/623	Optics	Dr. Sunil Kumar S	4	VI,VIII	II	Y
PHY324	Solid State Physics	Dr. Sasmita Mohakud	4	VI	II	
PHY341/641	Fluid Dynamics	Dr. Tapan Chandra Adhyapak	3	VI,VIII	II,IV	Y
PHY342	Quantum Information	Dr. Anil Shaji (IISER TVM) - NKN, [LC: Dr. Sambuddha Sanyal]	3	VI,VIII	II, IV	
PHY345	Advanced Physics Lab II	Dr. T. Kanagasekaran	3	VI	II	
PHY402	Semester Project	Dr. Sunil Kumar S	4		IV	
PHY420	Semester Project	Prof. G. Ambika	3	VIII		
PHY421/721	Nuclear & Particle Physics	Dr. Sunil Mukhi (IISER, Pune) - NKN [LC: Dr. Chitrasen Jena]	4	VIII	IV	Y
PHY422/722	Atomic & Molecular Physics	Dr. Bijay Agarwala, (IISER Pune) - NKN [LC: Dr. Jessy Jose]	4	VIII	IV	Y
PHY423/723	Gravitation & Cosmology	Dr. Arunima Banerjee	4	VIII	IV	Y
PHY424/724	Advanced Condensed Matter Physics	Dr. Sudipta Dutta	4	VIII	IV	Y
PHY425	Advanced Physics Lab IV	Dr. Dileep Mampallil	4	VIII	IV	
PHY426/726	Nonlinear Dynamics	Prof. G. Ambika	4	VI, VIII	II, IV	Y
PHY442/742	Nanoscience	Dr. Vanchiappan Aravindan*, Prof. K. Vijayamohanan Pillai	3	VIII	IV	Y

PHY462/762 & CSA462/762	Data Science II	Dr. Srinivas Padmanabhuni (Tarah technologies, Bangalore-Guest Faculty), Prof. G. Ambika* (LC)	3	VI,VIII	II, IV	Y
PHY521/821	Soft Matter Physics	Dr. Ravi Kumar Pujala*, Dr. Dileep Mampallil, Dr. Tapan Chandra Adhyapak	2		IV	Y
HSS402/602	Science Research Writing	Dr. P. Lakshmana Rao*, Dr. Sreenivas Chavali, Dr. Ramkumar Sambasivan, Dr. Arunima Banerjee	1		IV	Y