

Teaching Assignment Monsoon Semester (Session: 2024-25)			
Course code	Title	Instructor	Tutor
CORE COURSES			
1xx Courses			
BIO101	The basis and diversity of life	Dr. Rajesh Ramachandran	
BIO111	Biology lab I	Dr. Shravan Kumar Mishra, Dr. Vidya Devi Negi, Dr. Sadhan Das	
CHM101	Basic inorganic chemistry	Dr. Debashis Adhikari, Dr. Moitree Laskar	
CHM111	Chemistry lab I	Dr. Santanu Kumar Pal, Dr. Raj Kumar Roy, Dr. Angshuman Roy Choudhury	
MTH101	Basic linear algebra	Dr. Varadraj Ravi Srinivasan	
HSS101	Language skills	Dr. Adrene Freeda D'Cruz and Dr. Prashant Ramprasad Ingole	
PHY101	Mechanics	Dr. Goutam Sheet	Dr. Yogesh Singh, Prof. Ramandeep Singh Johal
PHY111	Physics lab I	Prof. K. P. Singh Prof. Sudeshna Sinha Prof. Rajeev Kapri Dr. Paramdeep Singh Chandi	
IDC101	Introduction to programming	Dr. Vishal Bhardwaj	
2xx Courses (premajor)			
BIO201	Genes and development	Dr. Jogender Singh / Prof. Sudip Mandal	
BIO202	Cells and organismal architecture	Prof. N. G. Prasad / Dr. Vinesh S.	
BIO211	Biology lab III	Prof. N. G. Prasad / Dr. Hasan Mohamaad / Dr. Vinesh S. / Dr. Chinmayee Choudhury	
CHM201	Introduction to spectroscopic methods	Dr. Jino Geroge	
CHM202	Chemical thermodynamics (available as IDC who do not take chemistry as a pre-major)	Dr. Samrat Ghosh	
CHM211	Chemistry lab III	Dr. Sabyasachi Rakshit, Dr. Sanchita Sengupta, Dr. Moitree Laskar	

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MTH201	Differential and integral calculus	Dr. Chandrakant Aribam	
MTH202	Elementary number theory (available as IDC who do not take Mathematics as a pre-major)	Dr. Yashonidhi Pandey	
MTH203	Sequences and series (available as IDC who do not take Mathematics as a pre-major)	Dr. Alok Kumar Maharana	
HSS201	History of science	Dr. Philose Koshy and Dr. Sunny Kumar	
PHY201	Waves and optics	Dr. Abhishek Chaudhuri	Prof. Arvind, Prof. Rajeev Kapri
PHY202	Overview of mathematical methods (available as IDC who do not take Physics as a pre-major)	Prof. Sanjeev Kumar	
PHY211	Physics lab III	Dr. Tripta Bhatia Dr. Samir Kumar Biswas, Prof. Kavita Dorai, Dr. Paramdeep Singh Chandi	
EES201	Introduction to earth sciences	Dr. Sharmila Bhattacharya	
EES202	Introduction to atmospheric and climate sciences	Prof. Vinayak Sinha	
EES211	Basic mineralogy and petrology lab	Dr. Sourabh Bhattacharya	
IDC course options available for MS23 (only one of the following to be chosen depending on the premajor)			
PHY202	Overview of mathematical methods (available as IDC who do not take Physics as a pre-major)	Prof. Sanjeev Kumar	
MTH202	Elementary number theory (available as IDC who do not take Mathematics as a pre-major)	Dr. Yashonidhi Pandey	
MTH203	Sequences and series (available as IDC who do not take Mathematics as a pre-major)	Dr. Alok Kumar Maharana	
CHM202	Chemical thermodynamics (available as IDC who do not take chemistry as a pre-major)	Dr. Samrat Ghosh	
IDC213	Introduction to palaeontology (Subject to Approval of Senate)	Dr. Harsha Dhiman	
IDC202	Chemical biology	Prof. P. Guptasarma	
SEMINAR COURSES (Major)			

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IDC351	Seminar attending	Dr. Suman Barman (CHM), Dr. Rachna Chabba (BIO), Prof. Rajeev Kapri (PHY), Dr. Ratna Pal (MTH)	
IDC451	Seminar delivery	Dr. Suman Barman (CHM), Prof. Arunika Mukhopadhaya (BIO), Prof. Kavita Dorai (PHY), Dr. Santosh K. Pamula (MTH)	
IDC601	Seminar delivery	Dr. Suman Barman (CHM), Prof. Samrat Mukhopadhay (BIO), Dr. Baerbel Sinha (EES), Prof. Kavita Dorai (PHY), Dr. Varadharaj R. Srinivasan (MTH)	
MAJOR COURSES			
Biology Major Courses (BIO3XX) (from MS22 batch onwards (Monsoon Semester 2024 onwards) all theory BIO3XX and BIO4XX and BIO6XX courses are electives but practical/lab courses are mandatory)			
BIO301	Animals: form and function	Prof. Samarjit Bhattacharyya	
BIO302	Advanced cell biology	Prof. Lolitika Mandal	
BIO303	Experimental design and hypothesis testing	Dr. Shashi Bhushan Pandit	
BIO308	Fundamentals of microbiology	Dr. Indranil Banerjee	
BIO311#	Advanced biology lab I: Molecular methods in biology (subject to Senate approval)	Dr. Mahak Sharma, Dr. Santosh Satbhai	
BIO311#	Advanced biology lab I: Principles and techniques of cell biology (subject to Senate approval)	Prof. Sudip Mandal, Prof. Samarjit Bhattacharyya, Dr. Rachna Chaba, Dr. Indranil Banerjee, Prof. Lolitika Mandal	
#Students would be choosing one of the BIO311 practical.			
Biology Major Courses (BIO4XX) (from MS22 batch onwards (Monsoon Semester 2024 onwards) all theory BIO3XX and BIO4XX and BIO6XX courses are electives but practical/lab courses are mandatory)			
BIO401	Structure and function of genomes	Dr. Ram Kishor Yadav	
BIO402	Microbial physiology and microbial genetics	Prof. Anand K. Bachhawat	
BIO453	Principles underlying instrumental biomacromolecular analyses	Prof. P. Guptasarma	
BIO411 BIO629 (BIO411 for BSMS students. BIO629 for PhD students)	Bioinformatics	Dr. Kuljeet Singh Sandhu / Dr. Chinmayee Choudhury	
Chemistry Major Courses (CHM3XX)			

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CHM301	Quantum chemistry	Dr. Priya Kumari C P	
CHM302	Organic chemistry	Prof. R. Vijaya Anand	
CHM303	Main group chemistry	Dr. Vignesh Kuduva Radhakrishnan	
CHM311	Organic chemistry lab	Prof. S. Arulananda Babu	
Chemistry Major Courses (CHM4XX)			
CHM401	Molecular spectroscopy	Dr. P. Balanarayana	
CHM402	Chemistry of materials	Dr. Ujjal K Gautam	
CHM411	Physical chemistry lab	Dr. Arijit K De, Dr. Angshuman Roy Choudhury	
Mathematics Major Courses (MTH3XX)			
MTH301	Real analysis	Prof. Chanchal Kumar	
MTH302	Linear algebra	Dr. Chetan Tukaram Balwe	
MTH303	Set theory and logic	Dr. Shane D'Mello	
MTH304	Group theory	Dr. Mahender Singh	
Mathematics Major Courses (MTH4XX)			
MTH401	Ordinary differential equations	Dr. Jotsaroop Kaur	
MTH402	Functional analysis	Dr. Santhosh Kumar Pamula	
MTH403	Fields and Galois theory	Dr. Abhik Ganguli	
Physics Major Courses (PHY3XX)			
PHY301	Classical mechanics	Dr. Dipanjan Chakraborty	
PHY302	Quantum mechanics	Dr. Manabendra Nath Bera	
PHY303	Electrodynamics	Dr. Kinjalk Lochan	
PHY310	Mathematical methods for physicists I	Dr. Prasenjit Das	
PHY311	Advanced optics and spectroscopy lab	Dr. Mandip Singh	Dr. Anil Dasana
Physics Major Courses (PHY4XX)			
PHY401	Nuclear and particle physics	Dr. Satyajit Jena	

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PHY402	Solid state physics	Dr. Ananth Venkatesan	
PHY403	Atomic and molecular physics	Dr. Ambresh Shivaji	
PHY411	Nuclear physics lab	Dr. Pankaj Kushwaha	Dr. Shashi Duggad
PHD COURSES			
Mathematics PhD Courses (MTH6XX)			
MTH601	Topics in algebra	Dr. Tanusree Khandai	
Physics PhD Courses (PHY6XX)			
PHY601	Review of classical mechanics	Prof. Ramandeep Singh Johal	
PHY602	Review of electrodynamics	Prof. Yogesh Singh	
ELECTIVES			
IDC courses			
IDC409	Introduction to data science and artificial intelligence	Dr. Vishal Bharadwaj	
IDC623	Field and lab-based methods in geology, ecology, and archaeology	Dr. Parth R. Chauhan, Dr. Manjari Jain, and Dr. Sharmila Bhattacharya	
IDC412	Field experience in science education	Dr. Deepika Bansal and Dr. T.V. Venkateswaran	
IDC637	Science communication	Dr. Deepika Bansal and Dr. T.V. Venkateswaran	
IDC636	Pedagogy of science	Dr. Deepika Bansal and Dr. T.V. Venkateswaran	
IDC408	Environmental hygiene, sanitation and waste management	Dr. Arvind K. Shakya	
IDC621	Modelling complex systems	Prof. Sudeshna Sinha	
IDC622	Physical basis of medical diagnostics	Dr. Samir Biswas	
Earth and Environmental Sciences Courses (EES4XX)			
EES403	Advanced remote sensing and GIS	Dr. Chanderkanta Ojha	
EES407	Environmental impact and risk assessment	Dr. Manoj Kumar	

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EES415	Geosciences and sustainable development goals	Dr. Yunus Ali Pulpadan	
EES416	Physics of monsoon	Dr. Raju Attada	
Humanities & Social Sciences			
HSS622	Cities: urban theory and laboratory	Prof. Anu Sabhlok	
HSS653	Theories in culture and media studies	Dr. Prashant Ramprasad Ingole	
HSS652	Select themes in contemporary global political thought	Dr. Sunny Kumar	
HSS645	World cinema	Dr. Adrene Freeda D'Cruz	
HSS650	Public policy	Dr. Debdulal Saha	
HSS625	The archaeology of ancient technologies	Dr. Parth R. Chauhan	
HSS654	Philosophy of language	Dr. Philose Koshy	
Earth and Environmental Sciences			
EES633	Principles of environmental chemistry	Dr. Manoj Kumar	
EES638	Paleoclimatology	Dr. Anoop Ambili	
EES641	Radiogenic isotope geology	Dr. Baerbel Sinha	
EES643	Environmental biotechnology	Dr. Sunil A. Patil	
Chemical Sciences			
CHM602	Magnetic Resonance	Prof. R. Ramachandran	
CHM601	Advanced inorganic chemistry	Prof. Sanjay Singh	
CHM606	Bio-organic and medicinal chemistry	Dr. Subhabrata Maiti	
CHM607	Chemical crystallography	Prof. Sanjay K Mandal	
CHM610	Chemistry of natural products	Prof. S.V Rama Sastry Sripada	
CHM618	Bioinorganic chemistry	Dr. Pritam Mondal	
CHM633	Selected analytical techniques in organic chemistry	Dr. Sugumar V.	
CHM615	Kinetics and dynamics of chemical reactions	Prof. N. Sathyamurthy Dr. P. Balanarayanan	
Physical Sciences			

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PHY424	Relativistic quantum mechanics and quantum field theory	Dr. K. P. Yogendran	
PHY668	Soft condensed matter	Dr. Anil Dasana	
PHY633	Mesoscopic physics	Dr. Ananth Venkatesan	
PHY657	Radiofrequency and microwave circuits	Dr. Ananth Venkatesan	
PHY631	Quantum computation and quantum information	Prof. Arvind	
Mathematical Sciences			
Directed Electives to be offered compulsorily			
MTH404	Commutative and homological algebra	Dr. Vaibhav Vaish	
MTH405	Probability theory	Dr. Lingaraj Sahu	
MTH406	Manifolds	Dr. Pranab Sardar	
Electives			
MTH408	Riemannian geometry	Dr. Soma Maity	
MTH438	An introduction to linear algebraic groups	Prof. Amit Kulshrestha	
MTH419	Number theory	Prof. Kapil H. Pranjape	
MTH442	Topology for data analysis (available as IDC for all majors)	Prof. Krishnendu Gongopadhyay	
Biological Sciences			
BIO615	Developmental biology	Prof. Lolitika Mandal	
BIO609	Immunology	Dr. Sharvan Sehwat	
BIO612	RNA biology	Dr. Sadhan Das / Dr. Shravan Kumar Mishra	
BIO631	Molecular pathogenesis	Dr. Vidya Devi Negi	
BIO636	Molecular tools for ecology and evolution (subject to Senate approval)	Dr. Rhitoban Ray Choudhury	

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