

Teaching Assignment Spring Semester (Session: 2024-25)			
Course code	Title	Instructor	Tutor
CORE COURSES			
1xx Courses			
BIO102	Genetics and evolution	Prof. N. G. Prasad, Dr. Vinesh Shenoy	
BIO112	Biology lab II	Prof. N. G. Prasad, Prof. Sudip Mandal, Dr. Vinesh Shenoy	
CHM102	Basic organic chemistry	Dr. Sugumar Venkataramani	
CHM112	Chemistry lab II	Prof. S. S. V. Rama Sastry, Dr. Subhabrata Maiti, Dr. Moitree Laskar	
MTH102	Probability and statistics	Dr. Shane D'Mello	
HSS102	Concepts in humanities and social sciences	Dr. Prashant Ramprasad Ingole Dr. Debdulal Saha Dr. V. Rajesh	
PHY102	Electromagnetism	Dr. Samir Kumar Biswas	Dr. Prasenjit Das, Dr. Abhishek Chaudhuri
PHY112	Physics lab II	Dr. Vishal Bhardwaj Prof. Sudeshna Sinha, Dr. Manabendra Nath Bera, Dr. Ambresh Shivaji	
EES102	Introduction to environmental sciences	Dr. Sunil A. Patil and Prof. Vinayak Sinha	
2xx Courses (premajor, mandatory for respective prepmajors)			
IDC212	Ethics in research	Dean R/D	
BIO203	Ecology and behaviour	Dr. Manjari Jain	
BIO204	Bioinformatics and bioengineering	Dr. Sashi Bhushan Pandit Dr. Kuljeet Singh Sandhu Prof. Purnananda Guptasarma Prof. Lolitika Mandal Dr. Chinmayee Chaudhury	

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BIO212	Biology lab IV	Dr. Manjari Jain Prof. N. G. Prasad Dr. Rhitoban Raychoudhury	
CHM203	Chemical kinetics	Dr. Balanarayan Pananghat	
CHM204	Electrochemistry, colloids and interfaces	Dr. Arijit Kumar De	
CHM212	Chemistry lab IV	Dr. Ujjal K. Gautam, Dr. Samrat Ghosh	

MTH204	Symmetry	Prof. Amit Kulshrestha	
MTH205	Analysis in one variable	Dr. Santhosh Kumar Pamula	
MTH206	Introduction to ordinary differential equations	Dr. Varadharaj R. Srinivasan	
PHY203	Thermodynamics and statistical physics	Dr. Tripta Bhatia	Prof. Ramandeep Johal, Prof. Sanjeev Kumar
PHY204	Modern physics	Dr. Ananth Venkatesan	Dr. Anil Kumar Dasanna
PHY212	Physics lab IV	Prof. Arvind	Prof. Yogesh Singh, Dr. Sandeep K. Goyal
EES203	Geochemistry	Dr. Anoop Ambili	
EES204	Remote sensing and GIS	Dr. Chandrakant Ojha and Dr. Yunus Ali Pulpadan	
EES212	Remote sensing and GIS lab	Dr. Chandrakant Ojha and Dr. Yunus Ali Pulpadan	
IDC course options available for MS23 (only one of the following to be chosen depending on the premajor)			
MTH206 ^(a)	Introduction to ordinary differential equations	Dr. Varadharaj R. Srinivasan	

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IDC201	Astronomy and astrophysics	Dr. Kulinder P. Singh	
IDC204	Theory of computation	Dr. Vaibhav Vaish	

(a) Available for students (as an IDC) who do not take Mathematics as a pre-major.

SEMINAR COURSES (Major) Mandatory courses for respective batches			
IDC352	Seminar attending	Prof. Lolitika Mandal (BIO) Dr. Ratna Pal & Dr. Soma Maity (MTH) Prof. Sudeshna Sinha (PHY) Dr. Pritam Mondal / Dr. Raj Kumar Roy/Dr. Kuduva R. Vignesh (CHM)	
IDC452	Seminar delivery	Dr. Mahak Sharma, Dr. Ram Yadav, Dr. Jogender Singh (BIO) Dr. Ratna Pal & Dr. Soma Maity (MTH) Dr. Ambresh Shivaji (PHY) Dr. Pritam Mondal /Dr. Raj Kumar Roy/Dr. Kuduva R. Vignesh (CHM)	
IDC602	Seminar delivery	Dr. Santhosh Satbhai (BIO) Prof. Kamal Priya Singh (PHY) Dr. Sunil A. Patil and Dr. Arvind Kumar Shakya (EES) Dr. Varadharaj R. Srinivasan (MTH) Dr. Pritam Mondal /Dr. Raj Kumar Roy/Dr. Kuduva R. Vignesh (CHM) Dr. Debdulal Saha (HSS)	
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)			
BIO304	Essential biochemistry	Dr. Shravan Kumar Mishra	
BIO305	Advanced developmental biology	Prof. Sudip Mandal	

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BIO306	Plants: form and function	Dr. Santosh Satbhai	
BIO312A ^(b)	Developmental and physiology lab (syllabus yet to be approved by Senate)	Prof. Lolitika Mandal, Dr. Ram Yadav, Dr. Rajesh Ramachandran, Dr. Jogender Singh, Dr. Santosh Satbhai	
BIO312B ^(b)	Microbiology and molecular biology lab (syllabus yet to be approved by Senate)	Dr. Indranil Banerjee, Dr. Vidya Negi, Dr. Hasan Mohammad	

^(b)Students would be choosing one of the BIO312 practical.

Biology Major Courses (BIO4XX)

Mandatory courses for batches up to MS21

BIO403	Advanced evolutionary biology	Dr. Rhitoban Raychoudhury	
BIO404	Cellular and molecular basis of the immune response	Prof. Kausik Chattopadhyay	
BIO412	Advanced biology lab II (updated syllabus yet to be approved by Senate)	Prof. Samrat Mukhopadhyay / Dr. Jogender Singh	

Chemistry Major Courses (CHM3XX)

Mandatory courses

(old syllabus as per website)

CHM304	Symmetry in chemistry	Dr. Sabyasachi Rakshit	
CHM305	Physical organic chemistry	Dr. Sanchita Sengupta	
CHM306	Transition metal chemistry	Dr. Suman K Barman	
CHM312	Inorganic chemistry lab	Dr. Moitree Laskar Dr. Debashis Adhikari	

Chemistry Major Courses (CHM4XX)

Mandatory courses

(old syllabus as per website)

CHM403	Analytical chemistry	Dr. Pritam Mondal	
CHM404	Statistical thermodynamics	Prof. Ramesh Ramachandran	

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CHM412	Analytical chemistry laboratory	Dr. Angshuman Roy Choudhury	
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Mathematics Major Courses (MTH3XX)
Mandatory Courses

MTH305	Complex analysis	Dr. Yashonidhi Pandey	
MTH306	Lebesgue measure and integration theory	Dr. Soma Maity	
MTH307	Topology	Dr. Mahender Singh	
MTH308	Rings and modules	Dr. Tanusree Khandai	

Mathematics Major Courses (MTH4XX)
Mandatory courses

MTH440	Partial differential equations	Dr. Lingaraj Sahu	
MTH410	Algebraic topology	Dr. Alok Maharana	
MTH409	Discrete mathematics	Prof. Chanchal Kumar	

Physics Major Courses (PHY3XX)
Mandatory courses

PHY304	Statistical mechanics	Prof. Rajeev Kapri	
PHY306	Advanced quantum mechanics	Dr. Kavita Dorai	
PHY312	Advanced electronics and instrumentation lab	Dr. Satyajit Jena, Dr. Pankaj Kushwaha, Prof. Shashi Kant Raichand Dugad	

Physics Major Courses (PHY4XX)

PHY412	Condensed matter physics lab	Dr. Mandip Singh, Prof. Kamal Priya Singh, Dr. Goutam Sheet	
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PHD COURSES

Mathematics PhD Courses (MTH6XX)
Mandatory courses

MTH602	Topics in topology	Dr. Pranab Sardar	
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MTH605	Topics in analysis	Dr. Ratna Pal	
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Physics PhD Courses (PHY6XX)

Mandatory courses

PHY603	Review of statistical mechanics	Dr. Prasenjit Das	
PHY604	Review of quantum mechanics	Prof. Ramandeep Johal	

ELECTIVE Courses

IDC courses

IDC402	Nonlinear dynamics, chaos, and complex systems	Dr. Anil Kumar Dasanna	
IDC306	Biocomputing	Dr. Shashi Bhushan Pandit	
IDC403	Protein engineering	Prof. Purnananda Guptasarma	
IDC411	School science curriculum and textbooks	Dr. Deepika Bansal Dr. T.V. Venkateswaran	
IDC410	Machine learning	Prof. Sashi Dugad	

Earth and Environmental Sciences Courses (EES4XX)

EES405	Climate data analysis and visualization	Dr. Raju Attada	
EES408	Igneous and metamorphic petrology	Dr. Sourabh Bhattacharya	
EES414	Public and environmental health science	Dr. Arvind Kumar Shakya	

Humanities & Social Sciences

HSS602	Social theory: concepts and debates	Prof. Anu Sablok	
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HSS615	Archaeology of the world: a cultural quest into our global past	Dr. Parth R. Chauhan	
HSS617	From Plassey to partition: A history of modern India	Dr. V. Rajesh	
HSS655	Logic	Dr. Philose Koshy	
HSS641 ^(x)	Research methods	Dr. V. Rajesh Dr. Adrene Freeda D'Cruz Dr. Sunny Kumar	
HSS642	Science and society	Dr. Deepika Bansal Dr. T.V. Venkateswaran	
HSS643 ^(y)	Field course in palaeoanthropology and allied disciplines	Dr. Parth R. Chauhan	
HSS646	Principles of economics	Dr. Debdulal Saha	
HSS621	Intellectual and cultural sources of modernity	Dr. Prashant Ramprasad Ingole	
HSS645 ^(y)	World cinema	Dr. Adrene Freeda D'Cruz	
HSS640	Charlie Chaplin's aesthetic universe	Dr. Adrene Freeda D'Cruz	

^(x)Only for PhD students

^(y)Will be offered only if new PhD students join

Earth and Environmental Sciences

HSS636	Climate change and sustainable development	Dr. Baerbel Sinha	
EES636	The quaternary period-environments, animals adaptations during the last 2.5 million years	Dr. Harsha Dhiman and Dr. Parth Chauhan	

Chemical Sciences

CHM604	Advanced organic chemistry	Prof. Ramasamy Vijaya Anand	
CHM612	Asymmetric synthesis and catalysis	Prof. S. Arulananda Babu	

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CHM613	Supramolecular chemistry	Prof. Santanu Kumar Pal	
CHM608	Advanced industrial chemistry	Prof. Sanjay Mandal	
CHM609	Polymer chemistry	Dr. Raj Kumar Roy	
CHM616	Theoretical and computational chemistry	Dr. Priyakumari C. P.	
CHM626	Photochemistry - concepts, techniques and applications	Dr. Jino George	
CHM628	Statistical thermodynamics	Prof. Ramesh Ramachandran	
CHM629	Magnetochemistry	Dr. Kuduva R. Vignesh	
CHM632	Spectroscopic methods for inorganic chemistry	Dr. Pritam Mondal Dr. Debashis Adhikari Dr. Suman K Barman	
Physical Sciences			
PHY635	Gravitation and cosmology	Dr. Kinjalk Lochan	
PHY638	Physics of fluids	Dr. Abhishek Chaudhuri	
PHY640	Non-equilibrium statistical mechanics	Dr. Dipanjan Chakraborty	
PHY644	Foundations of quantum mechanics	Dr. Manabendra Nath Bera	
PHY654	Astrophysics II: galaxies and cosmology	Dr. Kinjalk Lochan	
PHY660	Nonlinear optics	Dr. Sandeep K. Goyal	
PHY665	Quantum phases of matter and phase transitions	Prof. Sanjeev Kumar	
PHY667	Quantum magnetism	Prof. Yogesh Singh	

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PHY669	Astronomical techniques	Dr. Pankaj Kushwaha	
PHY671	The physics of superconductors	Dr. Goutam Sheet	
Mathematical Sciences Directed Electives to be offered compulsorily			
MTH440	Partial differential equations	Dr. Lingaraj Sahu	
MTH410	Algebraic topology	Dr. Alok Maharana	
MTH409	Discrete mathematics	Prof. Chanchal Kumar	
Electives (Mathematical Sciences)			
MTH414	Advanced complex analysis	Dr. Chandrakant Aribam	
MTH416	Arithmetic of elliptic curves	Dr. Abhik Ganguli	
MTH429	Introduction to Lie groups	Prof. K. Gongopadhyay	
MTH432	Category theory	Dr. Chetan Balwe	
MTH407	Algorithms and complexity	Prof. Kapil Hari Paranjape	
MTH441	Fourier analysis	Dr. Jotsaroop Kaur	
Biological Sciences			
BIO454	Neuroscience	Prof. Samarjit Bhattacharyya	
BIO455	Computational structural biology	Dr. Chinmayee Chaudhury	
BIO456	Cancer cell biology	Dr. Mahak Sharma	
BIO630	Epigenetics	Dr. Sadhan Das	
BIO635	Regeneration biology	Dr. Rajesh Ramachandran	
BIO625	Molecular evolution and phylogenetics	Dr. Rhitoban Raychoudhury	

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BIO606	Biostatistics	Dr. Kuljeet Sandhu	
BIO626	Immunological tools, techniques and technologies	Dr. Sharvan Sehrawat	

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