



Minor Programs

A guide to the undergraduate minors for the batches 2025-29 and beyond

New Curriculum · 2026

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Minor in Chemical Engineering

Department of Chemical Engineering | School of Engineering

Minor Philosophy

The Minor in Chemical Engineering gives students from diverse engineering and science disciplines a strong foundation in the core principles that govern process industries — an exposure to basic chemical engineering, expanded into the knowledge base required for solving industrial problems. Its five courses form the intellectual backbone of the discipline, providing a cohesive understanding of transport phenomena, reaction systems, and process design fundamentals, and enabling students to think beyond individual components towards integrated systems, sustainability, and industrial scalability. Inherently interdisciplinary, these principles apply across energy systems, environmental technologies, materials processing, biotechnology, pharmaceuticals, and sustainable manufacturing — complementing the parent discipline and broadening problem-solving capability.

Why pursue this Minor?

- A strong analytical and process-engineering foundation — rigorous quantitative skills in mass, energy, transport, and reaction systems, valuable across energy, environmental engineering, materials, biotech, and manufacturing.
- An interdisciplinary advantage — bridge your parent discipline with chemical process knowledge, enabling work on integrated and large-scale systems.
- Enhanced career and higher-studies opportunities — pathways into core process industries (petrochemicals, agrochemicals, bioenergy, bulk and speciality chemicals), sustainability sectors, and R&D, and stronger applications for higher studies in chemical engineering and allied fields.

Program Learning Goals

1. Foundation for understanding chemical engineering processes — Material & Energy Balance, Fluid Mechanics, Heat Transfer.
2. Expanding the knowledge required for solving industrial problems — Chemical Reaction Engineering, Mass Transfer.

Minor Curriculum Matrix

Presently only a fixed set of core courses is offered for the Minor in Chemical Engineering; there is no elective course basket.

	Major Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	18	--	--	18
Number of Credits to Choose	18	--	--	18

Core Courses (for all majors)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	CHD2001	Material & Energy Balance		3:0:1	PLG 1
2	CHD2003	Fluid Mechanics	CHD2001	3:0:0	PLG 1
3	CHD2007	Heat Transfer	CHD2001	3:0:0	PLG 1
4	CHD3001	Chemical Reaction Engineering	CHD2001	3:1:0	PLG 2
5	CHD3002	Mass Transfer	CHD2001, CHD2003	3:1:0	PLG 2

Minor in Civil Engineering

Department of Civil Engineering | School of Engineering

Students from other disciplines can earn a Minor in Civil Engineering after completing the following courses successfully.

Table 1: For Mechanical / Chemical Engineering Students (minimum credits required: 18)

S. No.	Course Title	L:T:P	Credits
Compulsory Courses (all to be taken)			
1	Elements of Surveying	2:0:1	3
2	Building Information Modelling (BIM)	1:0:1	2
3	Concrete Technology	2:0:1	3
Optional Courses (at least 10 credits to be earned)			
4	Geotechnical Engineering	3:0:1	4
5	Transportation Engineering-I	3:0:1	4
6	Hydraulic Engineering	2:0:1	3
7	Environmental Engineering	3:0:1	4
8	Remote Sensing and GIS: An Introduction and Applications	2:0:1	3

Table 2: For CSE / ECE Students (minimum credits required: 18)

S. No.	Course Title	L:T:P	Credits
Compulsory Courses (all to be taken)			
1	Elements of Surveying	2:0:1	3
2	Building Information Modelling (BIM)	1:0:1	2
3	Concrete Technology	2:0:1	3
Optional Courses (at least 10 credits to be earned)			
4	Geotechnical Engineering	3:0:1	4
5	Transportation Engineering-I	3:0:1	4
6	Hydraulic Engineering	2:0:1	3
7	Environmental Engineering	3:0:1	4
8	Mechanics of Fluid	3:0:1	4
9	Mechanics of Solids	3:0:1	4

Table 3: For Non-SoE Students with 10+2 in the science stream (minimum credits required: 19)

S. No.	Course Title	L:T:P	Credits
Compulsory Courses (all to be taken)			
1	Forces in Action	2:0:1	3
2	Elements of Surveying	2:0:1	3
3	Concrete Technology	2:0:1	3
Optional Courses (at least 10 credits to be earned)			
4	Geotechnical Engineering	3:0:1	4
5	Transportation Engineering-I	3:0:1	4
6	Hydraulic Engineering	2:0:1	3
7	Environmental Engineering	3:0:1	4
8	Mechanics of Fluid	3:0:1	4

Minor in Computer Science and Engineering

Department of Computer Science and Engineering | School of Engineering

Minor Philosophy

The Minor in Computer Science & Engineering is designed to give students from non-CSE and non-ECE disciplines a strong foundation in core computing concepts and practical problem-solving skills. The program builds essential knowledge in programming, data structures, algorithms, systems, and software development, enabling students to apply computational thinking within their primary domain, and prepares them for technology-driven careers, research, and innovation across diverse fields (applicable to batches from the 2025–29 academic year onwards). On completion, students are expected to apply computational thinking to real-world problems; design efficient algorithms and data structures; understand core principles such as computer organization, operating systems, databases, and networks; develop software using object-oriented design and sound engineering practice; analyse system-level concepts; and integrate computing knowledge with their major discipline.

Why pursue this Minor?

- Empowerment through computational thinking — students from diverse academic backgrounds develop computational thinking and problem-solving skills.
- Strong foundations combined with practical skills — programming, data structures, algorithms, systems, and software development with hands-on implementation: not just using technology, but building efficient solutions.
- Integrate computing with your major — apply computing concepts within your primary field to understand domain-specific problems, support interdisciplinary research, and propose technology-driven solutions.

Program Learning Goals

1. Develop strong foundations in core computing concepts and programming to design, implement, and analyse computational solutions effectively.
2. Apply computational thinking and algorithmic approaches to solve real-world problems, supporting analytical reasoning and structured problem-solving across domains.
3. Integrate computer science knowledge with the primary discipline to enable interdisciplinary applications and technology-driven solutions.

Minor Curriculum Matrix

Track A: Non-Engineering Majors who do not have CSD1001 among their core courses. Track B: Engineering (Mechanical/Civil/Chemical) and Non-Engineering Majors who have CSD1001 among their core courses.

	Major Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits — Track A	8	10	–	18
Credits to Choose — Track A	8	28	–	36
Min Credits — Track B	4	14	–	18
Credits to Choose — Track B	4	28	–	32

Core Courses — Track A (majors without CSD1001)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	CSD1001	Problem Solving Using Programming	-	3:0:1	2
2	CSD2001	Data Structures and Algorithms	CSD1001	3:0:1	2, 3

Core Course — Track B (majors with CSD1001)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	CSD2001	Data Structures and Algorithms	CSD1001	3:0:1	2, 3

Elective Basket 1

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	CSD3001	Operating Systems	CSD2001, CSD2003	3:0:1	3
2	CSD2002	*Discrete Mathematics	CSD2001	3:1:0	1, 2
3	CSD2003	Computer Organization	CSD2001	3:1:1	3
4	CSD2004	Object Oriented Programming	CSD2001	3:0:1	2
5	CSD4001	Computer Networks	CSD2001, CSD3001	3:0:1	3
6	CSD2008	Introduction to Database Systems	CSD2001	3:0:1	4, 5
7	CSD4901	Software Engineering	CSD2001	2:0:1	4, 5

* This course is not available for students doing a Mathematics Major.

Minor in Electrical and Computer Engineering

Department of Electrical Engineering | School of Engineering

Minor Philosophy

The Minor in Electrical and Computer Engineering is founded on the philosophy that modern engineering innovation lies at the intersection of electronics, computation, communication, and intelligence. It provides a systems-level understanding of intelligent electronic and computing systems, bridging the hardware and software domains so that sensing, signal processing, embedded systems, networking, and artificial intelligence can be integrated into cohesive solutions. Rather than offering isolated technical knowledge, the minor promotes an integrated approach in which signals, systems, hardware, networks, and AI converge to create intelligent, scalable, and connected engineering solutions — cultivating analytical thinking and design competence, and preparing students for emerging paradigms such as reconfigurable and quantum computing.

Why pursue this Minor?

- Build strong foundations in intelligent systems — Digital Electronics, Signal Representation and Processing, Principles of Communication Engineering, and Embedded Systems Hardware provide the core building blocks of modern electronic and computing platforms.
- Develop hardware–software co-design skills — microcontrollers, FPGAs, and reconfigurable systems, highly valued in semiconductor design, embedded systems, robotics, and IoT.
- Gain exposure to AI and emerging technologies — electives in Artificial Intelligence & Machine Learning, Reconfigurable Computing, and Quantum Computing prepare students for future technology domains.
- Adopt a systems-level perspective — integrating sensing, computation, communication, and intelligence, an essential capability for designing autonomous, connected, data-driven systems.

Program Learning Goals

1. Model and analyse signals, systems, and digital logic as building blocks of intelligent electronic systems.
2. Design and evaluate communication and networking solutions for connected and distributed systems.
3. Develop embedded and reconfigurable hardware–software systems using FPGAs, microcontrollers, and accelerators.
4. Build and deploy AI/ML-based solutions for data-driven and autonomous engineering applications.
5. Use modern design, simulation, and development tools across electronics, including semiconductor/VLSI, computing, and AI domains.
6. Integrate emerging technologies such as reconfigurable and quantum computing into end-to-end system designs.

Minor Curriculum Matrix

	Major Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	16	3		19
Number of Credits to Choose	20	15		35

Core Courses Basket (for all majors, SoE and non-SoE)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	ECE2002	Digital Electronics	ECE1001/equivalent	3:0:1	1, 3, 5
2	ECE2003	Signal Representation and Processing	MAT1004/equivalent	3:0:1	1, 2, 4, 6
3	ECE2007	Principles of Communication Engineering	ECE2003	3:0:1	1, 2, 4
4	ECE3003	Embedded Systems Hardware	ECE2002	3:0:1	1, 2, 3, 4, 5, 6
5	ECE3328	Digital Design with FPGAs	ECE2002	3:0:1	1, 2, 3, 4, 5, 6

Elective Courses Basket (for all majors, SoE and non-SoE)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	ECE3002	Computer Communication Networks	ECE2007	3:0:1	1, 2, 4, 6
2	ECE3004	Artificial Intelligence and Machine Learning	-	3:0:0	1, 4, 5, 6

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
3	ECE3309	Introduction to Robotics	ECE4801	3:0:1	1, 2, 3, 4, 5, 6
4	ECE3320	Quantum Computing	MAT1004/equivalent	3:1:0	1, 2, 4, 5, 6

Minor in Mechanical Engineering

Department of Mechanical Engineering | School of Engineering

Minor Philosophy

The Minor in Mechanical Engineering gives students from diverse academic backgrounds a foundational understanding of core areas — mechanics, thermodynamics, manufacturing, industrial engineering, and system design — structured to broaden technical competence, foster interdisciplinary learning, and enhance problem-solving by integrating mechanical principles into students' primary fields of study. Combining theory with practice, it prepares students for real-world challenges, interdisciplinary research, and opportunities in engineering fields and graduate study.

Why pursue this Minor?

- A hands-on, industry-relevant skill set — CAD/CAE tools, manufacturing processes, thermo-fluids, and mechanics, directly applicable in industry and bridging theory with practice.
- Interdisciplinary advantage and career flexibility — complements majors across engineering, the sciences, business, and design, at the intersection of hardware, systems, automation, energy, and product development.
- A strong foundation for innovation, research, and higher studies — analytical and design fundamentals preparing students for master's and PhD study, competitive exams, and roles in R&D, startups, robotics, sustainable energy, and advanced manufacturing.

Program Learning Goals

1. Foundational knowledge in mechanical engineering — mechanics, thermodynamics, manufacturing processes, industrial engineering, and system design, applied to real-world problems.
2. Application of engineering tools and problem-solving skills — apply mechanical concepts, analytical methods, and modern tools to solve practical, industry-relevant problems.
3. Interdisciplinary integration and systems thinking — integrate mechanical principles with the primary field of study, enabling system-level thinking and solutions across domains.

Minor Curriculum Matrix

	Minor Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits — SoE UG	13	7	NA	20
Credits to Choose — SoE	13	21	NA	--
Min Credits — Non-SoE UG	14	6	NA	20
Credits to Choose — Non-SoE	14	22	NA	--

Core Courses (for SoE students)

Sr	Code	Course Name	Pre-requisite	L:T:P	Credits	PLGs
1	MED2002	Manufacturing Technology I	None	2:0:1	3	PLG 1, 3
2	MED2003	Mechanics of Solids	CED1001	3:0:1	4	PLG 1
3	MED2005	Engineering Thermodynamics	None	2:1:0	3	PLG 1
4	MED2006	Principles of Industrial Engineering	None	3:0:0	3	PLG 1, 2

Elective Basket 1 (for SoE students)

Sr	Code	Course Name	Pre-requisite	L:T:P	Credits	PLGs
1	MED2004	Mechanics of Fluids	None	3:0:1	4	PLG 1
2	MED3001	Kinematics & Dynamics of Machines	None	3:0:1	4	PLG 1, 2
3	MED3002	Manufacturing Technology II	None	2:0:1	3	PLG 1, 3
4	MED3005	Heat & Mass Transfer	MED2004, MED2005	3:0:1	4	PLG 1, 2
5	MED4001	Operations Research	None	2:1:0	3	PLG 1, 2
6	MED4003	Machine Design	MED1002, MED2003	2:0:1	3	PLG 2, 3

Core Courses (for Non-SoE students)

Sr	Code	Course Name	Pre-requisite	L:T:P	Credits	PLGs
1	MED1002	Design to Reality: CAD & 3D Printing	None	1:0:1	2	PLG 1, 2
2	CED1001	Forces in Action	None	2:0:1	3	PLG 1
3	MED2002	Manufacturing Technology I	None	2:0:1	3	PLG 1, 3
4	MED2005	Engineering Thermodynamics	None	2:1:0	3	PLG 1
5	MED2006	Principles of Industrial Engineering	None	3:0:0	3	PLG 1, 2

Elective Basket 1 (for Non-SoE students)

Sr	Code	Course Name	Pre-requisite	L:T:P	Credits	PLGs
1	MED2003	Mechanics of Solids	CED1001	3:0:1	4	PLG 1
2	MED2004	Mechanics of Fluids	None	3:0:1	4	PLG 1
3	MED3001	Kinematics & Dynamics of Machines	None	3:0:1	4	PLG 1, 2
4	MED3002	Manufacturing Technology II	None	2:0:1	3	PLG 1, 3
5	MED3005	Heat & Mass Transfer	MED2004, MED2005	3:0:1	4	PLG 1, 2
6	MED4001	Operations Research	None	2:1:0	3	PLG 1, 2

Minor in Arts

Department of Art, Media and Performance | School of Humanities and Social Sciences

Minor Philosophy

The Art Minor introduces students to a broad spectrum of creative practices and critical perspectives in the visual arts, offering both conceptual foundations and hands-on skills. Rooted in an interdisciplinary approach, it encourages deep engagement with diverse art forms — from traditional drawing, painting, and sculpture to contemporary practices like comics and visual storytelling.

Why pursue this Minor?

- No fine-arts training required — get into the studio and explore diverse ways of working with materials and techniques.
- Develop your own artistic voice while building critical insight into images, objects, and visual culture.
- Connect art-making with other fields — and with the debates and movements shaping the contemporary visual arts.

Program Learning Goals

1. Creative techniques and material sensitivity across painting, drawing, sculpture, and photography.
2. Critical visual insight — interpreting images and objects and engaging with visual culture.
3. An interdisciplinary perspective connecting visual arts with broader social, cultural, and environmental issues.
4. Personal artistic expression — an original artistic voice, articulated with confidence and clarity.
5. Awareness of contemporary art practices, debates, and movements.

Minor Curriculum Matrix

	Minor Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	4	8	4	16
Number of Credits to Choose	4	12	8	--

Core Course

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP1007	Critical Art History: An Introduction		4:0:0	2,3,5

Elective Basket 1 (take any 2)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP1001	Explorations in 2D		2:0:2	1,4,5
2	AMP1002	Enactments of Observation and Perception		2:0:2	1,4,5
3	AMP2001	Comics: Text and Image Exploration		2:0:2	1,4,5

Elective Basket 2 (take any 1)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP4001	Film and the Moving Image		2:1:1	1,2,4,5
2	AMP2003	The Photographic Image		2:0:2	

Minor in Dance

Department of Art, Media and Performance | School of Humanities and Social Sciences

Minor Philosophy

The Dance Minor addresses dance as an academic field, enabling students across diverse disciplines to engage with the art form at multiple levels. Its pedagogy integrates students' physical and intellectual capabilities, diffusing the binaries between the practice of dance and theorisations of the dancing body. Situated at the interdisciplinary cusp of the humanities and social sciences, the program treats the moving body as a locus of knowledge creation — pushing the boundaries of what constitutes dance, who can dance, and what dance makes possible.

Why pursue this Minor?

- Not a dancer, but love the idea of dancing? The Minor gets you into the studio to explore diverse ways of moving.
- Already a dancer? Expand your understanding beyond performance and locate your practice in the historical, social, and political aspects of dance.
- Explore dance from multiple perspectives, with insight into the creative industries and what it takes to succeed in this sector.

Program Learning Goals

1. Engage critically and analytically with the historical, performative, and aesthetic elements of dance-making and choreographic analysis.
2. Read the dancing body as a cultural text, articulating its socio-political specificity and historical situatedness.
3. Analyse principles, works, and methodologies of dance and their intersections with other fields of study.

Minor Curriculum Matrix

	Minor Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	4	4	4	16
Number of Credits to Choose	4	8	12	--

Core Course

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP1005	Body, Gesture and Performance		2:1:1	1,2,3

Elective Basket 1 (Any One)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP1006	Dance and Identity		4:0:0	1,2,3
2	AMP2007	Dance Technique		0:0:4	1,2,3

Elective Basket 2 (Any two)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP2008	Writing Bodies		4:0:0	1,2,3
2	AMP3002	Movement and Meaning		2:1:1	1,2,3
3	AMP6022	Body, Performativity and Politics		2:1:1	1,2,3

Minor in Design

Department of Design | School of Humanities and Social Sciences

Minor Philosophy

Design is inherent to human beings — a fundamental aspect of problem-solving and creativity — and has evolved into a professional discipline drawing on art, craft, architecture, engineering, and the social sciences. As an applied art and science, it involves critically examining existing situations, identifying and redefining problems, exploring solutions laterally, and conceiving innovative, sustainable solutions that satisfy user needs while contributing positively to society. Increasingly recognized as a transdisciplinary field, design tackles the complex, multifaceted problems of the 21st century, creating meaningful impact through thoughtful, user-centered solutions.

Why pursue this Minor?

- Experiential learning in multidisciplinary groups — explore the principles of designing in practical contexts, with professional exposure that is currently uncommon in Indian universities.
- Exposure to design as a field of study — a comprehensive overview that equips students to pursue further studies or competitive exams in design-related fields.
- Transdisciplinary skills — collaborative, creative problem-solving that breaks down disciplinary boundaries and reveals the interconnectedness of fields.
- A Design Thinking approach — human-centered problem-solving through empathy, ideation, prototyping, and iteration, applicable within any discipline and a competitive edge in adaptability and creative thinking.

Program Learning Goals

1. A foundational understanding of design as a field of study and its relevance in contemporary society and industry.
2. Knowledge and application skills of visual language, enabling effective communication across diverse design domains.
3. Understanding of the human-centered nature of design, with familiarity in key design methods, processes, and techniques.
4. Practical skills in creative problem-solving through collaborative, multidisciplinary teamwork.

Minor Curriculum Matrix

	Minor Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	10	4	4	18
Number of Credits to Choose	10	4	4	18
Selection Rate	100%	50%	50%	

Core Courses (for all majors)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	DES1101	Elements and Principles of Design	NA	2-0-2	PLG1, PLG2
2	DES2008	Design Practice 1		1-0-2	PLG3, PLG4
3	DES3003	Design Practice 2	DES2008	1-0-2	PLG3, PLG4

Elective Basket 1 (Visual Communication Design)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	DES1007	Visual Communication 1	DES1101	1-0-3	PLG2, PLG4
2	DES2002	Visual Communication 2	DES1007	2-0-2	PLG2, PLG4

Elective Basket 2 (Product Design)

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	DES1008	Human Centered Design Methods	DES1101	2-0-2	PLG3, PLG4
2	DES2003	Human Factors Engineering	DES1008	2-0-2	PLG3, PLG4

A student can choose one course from both of the elective baskets. A student cannot take more than 2 courses of 1000 level.

5. Summary: The two pathways for Design Minor

The two pathways for Design Minor Program are minor with Product Design Track and Minor with visual communication Track. Total number of credits earned for either set of courses will be 18 credits.

Course basket for Design Minor with Product Design Track

Sr No	Course Code	Course Name	Credits	Semester
1	DES1001	Elements and Principles of Visual Design	2-0-2	Semester- 3
2	DES1008	Human Centered Design Methods	2-0-2	Semester-4
3	DES2008	Design Practice 1	1-0-2	Semester-5
4	DES2003	Human Factors Engineering	2-0-2	Semester-6
5	DES3003	Design Practice 2	1-0-2	Semester-7

Course basket for Design Minor with Visual Communication Track

Sr No	Course Code	Course Name	Credits	Semester
1	DES1001	Elements and Principles of Visual Design	2-0-2	Semester- 3
2	DES1007	Visual Communication 1	2-0-2	Semester-4
3	DES2008	Design Practice 1	1-0-2	Semester-5
4	DES2002	Visual Communication 2	2-0-2	Semester-6
5	DES3003	Design Practice 2	1-0-2	Semester-7

The students can be awarded Design minor if they take one of the course sets or combination from both minor baskets (as described in section 4 note) to complete 18 credits.

Minor in Economics

Department of Economics | School of Humanities and Social Sciences

Minor Philosophy

The Minor provides students in non-economics disciplines with a basic knowledge of the logic of modern economics, and the opportunity to explore its three major subdivisions — micro, macro, and econometrics. Economics connects naturally to business, mathematics, computer science, and the social sciences, making the Minor a pathway to interdisciplinary study.

Why pursue this Minor?

- An interest in the social science of production and distribution, pursued rigorously.
- Preparation for careers dealing directly with economic topics — or where economic knowledge improves communication.
- A clear signal of interest and intent for higher degrees in economics, commonly pursued from non-economics backgrounds.

Program Learning Goals

1. A solid understanding of core economic vocabulary.
2. Understand and discuss mathematical presentations of the core of modern economic logic.
3. Focused knowledge in at least one major subfield — macroeconomic, microeconomic, or econometric courses.

Minor Curriculum Matrix

	Minor Core	Elective Basket	Total Credits
Min Credits	8 ¹	12	20
Number of Credits to Choose	8 ¹	48	--

¹ SHSS has 12 credits of minor core (see the SHSS track below).

Core Courses — Science & Engineering Majors

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	ECO1001	Principles of Micro	None	3:1:0	1
2	ECO2001	Intermediate Micro I	ECO1001 + (any calculus)	3:1:0	2

Core Courses — SHSS Majors

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	ECO1001	Principles of Micro	None	3:1:0	1
2	ECO1004	Math for Economics ¹	None	3:1:0	1
3	ECO2001	Intermediate Micro I	ECO1001 + ECO1004	3:1:0	2

¹ Only ECO1004 counts as calculus toward the Minor for SHSS majors. Since they already take ECO1001 and ECO1004, 1000-series electives do not count toward their Minor (allowed as added UWE).

Core Courses — BMS Major

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	ECO1004	Math for Economics	None	3:1:0	1
2	ECO2001	Intermediate Micro I	ECO1001 + ECO1004	3:1:0	2

BMS majors take equivalents of ECO1001/ECO1002 in their major; only ECO1004 counts toward the Minor.

Elective Basket — Science & Engineering Majors

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	ECO1002	Principles of Macro ¹	None	3:1:0	1,3
2	ECO1013	Probability and Statistics ^{1,2}	None	3:1:0	1,3
3	ECO2002	Intermediate Macro	ECO2001	3:1:0	2,3
4	ECO2003	Introduction to Econometrics	ECO1013	3:1:0	2,3
5	ECO2101	Intermediate Micro II	ECO2001	3:1:0	2,3
6	ECO3101	Development Economics	ECO2001	3:1:0	3
7	ECO3102	International Economics	ECO2002	3:1:0	3
8	ECO4202	Money & Banking	ECO2002	3:1:0	3

9	ECO4203	Environmental Economics	ECO2003	3:1:0	3
10	ECO4401	Public Economics	ECO2001	3:1:0	3
11	ECO4803	Data Handling	ECO2003	3:1:0	3

¹ Only two 1000-series courses can count toward a Minor; with ECO1001 already taken, ECO1002 and ECO1013 cannot both count. ² These majors have no ECO1013 equivalent; ECO1013 is required to take ECO2003.

Minor in English

Department of English | School of Humanities and Social Sciences

Minor Philosophy

The Minor in English — long a popular choice at SNU — gives students a sound foundation in literary studies. The core courses introduce the three main genres of literature: poetry, fiction, and drama. The electives on offer deepen engagement with areas such as linguistics, creative writing, and the study of the novel.

Why pursue this Minor?

- Learn and apply the protocols of textual analysis and interpretation across the major genres of English literature — skills readily transferable to other literatures, audiovisual narratives, and even non-literary texts on public policy, international affairs, and corporate governance.
- Gain exposure to a rich variety of interpretive frameworks — psychological, sociological, historical, philosophical — organically building a sophisticated sensibility valued across the social sector, the corporate sector, and public administration.
- Acquire a sound footing and a solid credential for pursuing higher education in the humanities.

Program Learning Goals

1. Analyse a text using critical terms and methodologies that are standard in academia and other work-worlds.
2. Produce written work that is well organised and grammatically accurate.
3. Interpret a text with reference to its contexts of production and reception.
4. Demonstrate oral competence in responding to literary texts.

Minor Curriculum Matrix

	Major Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	8	8		16
Number of Credits to Choose	8	12		

Core Courses (for all majors)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	ENG1001	The Language Game of Literature	None	3:1:0	1,2,3
2	ENG2041	Shakespeare and his Contemporaries	None	3:1:0	1,2,3

Elective Basket 1 (Any two)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	ENG2042	Linguistic Approaches to Literature	None	3:1:0	1,2,3,4
2	ENG3040	The Fundamentals of Creative Writing	None	3:1:0	1,2,3
3	ENG3043	Landmarks in the Novel Form	None	3:1:0	1,2,3

Minor in Film

Department of Art, Media and Performance | School of Humanities and Social Sciences

Minor Philosophy

The Minor in Film fosters a deep understanding of film as both an art form and a means of cultural communication, while equipping students with practical skills. Its courses build visual literacy, so students can interpret and critique both mainstream and experimental film in cultural, social, and historical contexts.

Why pursue this Minor?

- Hands-on experience in film production and post-production — directing, cinematography, editing, and sound design — including resourceful filmmaking with simple cameras and cell phones, so you can work independently and creatively with basic technology.
- An interdisciplinary lens on how moving images influence and reflect broader societal issues, opening career pathways in fiction and non-fiction filmmaking, journalism, media arts, and communications.

Program Learning Goals

1. Critical analysis and visual literacy: how narrative structure, cinematography, sound, and editing create meaning.
2. Global cinematic perspectives across Western and non-Western traditions, contextualising films from varied cultural and historical backgrounds.
3. Technical skills and resourceful filmmaking — executing independent film projects with limited resources and basic equipment.
4. Cross-disciplinary understanding of how film intersects with history, psychology, sociology, the arts, and beyond.
5. Personal expression through film, balancing creative freedom with socially responsible, ethically aware practice.

Minor Curriculum Matrix

	Minor Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	4	12		16
Number of Credits to Choose	4	20		--

Core Course

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP1003	Image and Sound Studio		2:1:1	3,4,5

Elective Basket 1 (take any 3)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP3001	Production		1:0:3	1,3,5
2	AMP1004	Interpreting Cinema		2:2:0	1,2,5
3	AMP2003	The Photographic Image		2:0:2	
4		Film and the Moving Image		2:1:1	
5		Editing and Post Production	AMP1003/ AMP2003	2:0:2	

Minor in International Relations

Department of International Relations and Governance Studies | School of Humanities and Social Sciences

Minor Philosophy

The Minor imparts knowledge of international affairs as a dynamic, historically grounded, and interconnected set of processes that shape — and are in turn shaped by — political power, ideas, institutions, and everyday life. It introduces the global realm as an evolving, contested space at the intersection of geopolitical, political, economic, technological, and social forces. Students from diverse disciplinary backgrounds gain the conceptual tools to make sense of a rapidly changing world — geopolitical rivalry, economic uncertainty, technological transformation, and grand challenges such as climate change, inequality, and conflict — on the way to informed citizenship and ethically-imbued professional engagement.

Why pursue this Minor?

- Strong, well-rounded disciplinary training — the lay of the land and key theories, together with international law, international security, international political economy, and the role of science and technology in international affairs.
- Diversity of perspectives on international and global issues — theoretical positions and policy choices, including those of the Global South, with which our location has historical and normative resonance.
- Key skills — core analytical and social-science research skills, with an appreciation for practical interventions towards just and sustainable problem-solving.

Program Learning Goals

1. Global and contextual understanding — critically engage with major theories, concepts, and debates in international relations, including Global South perspectives.
2. Analytical and research skills — analyse international issues using appropriate frameworks, evidence, and research methods, communicating arguments effectively in written and oral forms.
3. Application to contemporary global challenges — apply IR and allied frameworks to security, development, climate change, and technological transformation.

Minor Curriculum Matrix

	Major Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	8	12		20
Number of Credits to Choose	8	32		--

Compulsory Courses (for all majors)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	INT 101/INT 1001	Introduction to International Relations	None	04	1-3
2	INT 105/INT 1003	Theorising International Relations	None	04	1-3

Other Courses Basket — choose any 3 (one each from 200, 300, and 400 level)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	INT 217/INT 2007	Introduction to International Political Economy	None	04	1-3
2	INT 204/INT 2004	International Security	None	04	1-3
3	INT 301/INT 3004	International Law and World Politics	None	04	1-3
4	INT 205/INT 2005	Science, Technology and International Relations	None	04	1-3
5	INT 250/INT 3021	China in Global Politics	None	04	1-3
6	INT 346/INT 3046	Cognition, Psychology, and Politics	None	04	1-3
7	INT 342/INT 3042	Science Diplomacy	None	04	1-3
8	INT 218/INT 2018	Globalisation in Critical Perspectives	None	04	1-3

Minor in Media

Department of Art, Media and Performance | School of Humanities and Social Sciences

Minor Philosophy

The Media Minor introduces students to the wide spectrum of media practices in the 21st century, cultivating consumers and practitioners who can navigate today's media landscape and shape its future. Spanning journalistic rigour, creative media production, and artistic experimentation, it places strong emphasis on emerging technologies and the intersections of communication, culture, and digital media. Working across photography, digital video, interactive media, and audio storytelling, students build the analytical insight and creative expertise to develop compelling narratives and contribute to contemporary media practice.

Why pursue this Minor?

- Digital media is the new frontier in every field — this Minor equips you with the understanding and skills to use emerging technologies across a wide range of subject areas.
- From computational art to journalistic ethics, the curriculum spans the full breadth of contemporary media practice.

Program Learning Goals

1. Understand the processes that govern media.
2. Grasp the concepts behind juxtaposition and the manipulation of image and sound.
3. Develop sensitivity to the technical complexity and craftsmanship of interactive media.
4. Understand the broad role of technology in our lives.
5. Produce multimedia stories, artwork, and soundscapes through audio-visual and sonic design.

Minor Curriculum Matrix

	Minor Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	4	8	4	16
Number of Credits to Choose	4	12	12	--

Core Course

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP1003	Image and Sound Studio		2:1:1	2,3,5

Elective Basket 1 (take any 2)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP2002	Interactive Media		2:0:2	2,3,5
2	AMP2003	The Photographic Image		2:0:2	2,3,5
3	AMP4001	Film and the Moving Image		2:1:1	2,3,5

Elective Basket 2 (take any 1)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	AMP2001	Comics: Text and Image Exploration		2:0:2	2,3,5
2	AMP2004	Communicating the Environment		2:2:0	1,2,3,4,5
3	AMP3001	Production		2:1:1	2,3,5

Minor in Management

School of Management and Entrepreneurship

Minor Philosophy

The Minor in Management gives students from any discipline a structured introduction to the fundamental domains of management — Marketing, Finance, Operations, and Human Resource Management. Without replicating a full Management major, it builds a strong managerial foundation and an integrated view of business decision-making, with a large elective pool for depth or breadth, capped by an integrative capstone.

Why pursue this Minor?

- Exposure to at least three of the four functional pillars — Marketing, Finance, Operations, and HRM — alongside any major.
- Flexibility to specialise or broaden across management disciplines, via an elective basket far larger than the minimum requirement.
- An integrative finish — Business Simulation (Capstone) or Strategic Management — making integrated decisions across functions.

Objectives / Learning Outcomes

1. Grounding in the functional domains of management: Marketing, Finance, Operations, and HRM.
2. Depth in a chosen management area, or broader exposure across multiple management disciplines.
3. Managerial thinking and decision-making capabilities.
4. Integrated learning across functional areas through a capstone business simulation experience.

Program Requirements (minimum 16 credits)

At least three Core Courses, at least two Electives, and Business Simulation (Capstone) or Strategic Management (3 credits; requires three cores first; only one counts), plus approved electives to reach 16 credits and the minimum Minor CGPA. A fourth core may substitute for one elective. ENF students: FAC and MEC courses do not count; Economics students: MEC courses do not count. Applicable from the Batch of 2029.

Core Courses (complete at least three)

Area	Core Course	Credits
Marketing	Principles of Marketing	3
Finance	Financial Reporting	3
DSOMIS	Operations Management	2
OBHRM	Human Resource Management	2

Approved Elective Pool (complete at least two)

Area	Elective Course	Credits
DSOMIS	Project Management	2
DSOMIS	Simulation Modelling and Optimization of Supply Chains	2
OBHRM	Group Dynamics for Teams	3
OBHRM	Developing Management Skills	3
Marketing	Entrepreneurial Marketing	3
Marketing	International Marketing	3
FAC	Financial Markets	2
FAC	Financial Management / Corporate Finance	3
EPP	Economics for Business – I	3
EPP	Economics for Business – II	3
SME & GM	Corporate Laws	2
SME & GM	Fundamentals of Intellectual Property	3

Elective Basket II (Take anyone)

Area	Core Course	Credits
Strategy	Business Simulation	3
Strategy	Strategic Management	3

Minor in Biotechnology

School of Natural Sciences

Minor Philosophy

The Minor in Biotechnology rests on the idea that tackling biological problems requires understanding life sciences, technology, and ethics together. It supports what students are already studying by teaching the fundamentals of biotechnology and giving hands-on experience of the principles that are changing healthcare, agriculture, environmental sustainability, and industry. With an equal commitment to ethical awareness and societal impact, it aims to cultivate scientifically literate graduates who can collaborate across disciplines, adapt to rapidly evolving technologies, and contribute meaningfully to research, industry, education, or further professional study.

Why pursue this Minor?

- Turns biological theory into practice — equipping students to solve real problems in healthcare, agriculture, sustainability, and industry.
- Designed to complement majors in chemistry, physics, mathematics, engineering, computer science, and even management — adding biotech literacy that makes graduates more versatile and employable.
- An emphasis on hands-on labs immerses students in practical biotechnology workflows rather than just theoretical learning.

Program Learning Goals

1. Core biological concepts: cell biology, genetics, molecular biology, microbiology, and biochemistry.
2. Hands-on experience with essential laboratory techniques such as DNA extraction, PCR, and microbiological methods.
3. Applying the scientific method to real-life problems in healthcare, agriculture, sustainability, and industry.
4. Awareness of emerging trends, technologies, and innovations in biotechnology, and of their ethical considerations.

Minor Curriculum Matrix

	Major Core	Elective Basket 1	Elective Basket 2	Total Credits
Min Credits	15	3		18
Number of Credits to Choose	18	12		--

Core Courses

BIO1001 is compulsory for all students pursuing the Minor. Of the remaining five core courses, students complete a minimum of four.

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	BIO1001	Introduction to Cell Biology, Molecular Biology, and Genetics		3:0:0	1
2	BIO202	Microbiology	BIO1001	2:0:1	1, 2, 3
3	BIO210	Cell Biology	BIO1001	2:0:1	1, 2, 3, 4
4	BIO211	Genetics	BIO1001	3:0:0	1, 3, 4
5	BIO206	Molecular Biology	BIO1001	2:0:1	1, 2, 3, 4
6	BIO205	Bio-Analytical Techniques	BIO1001	2:0:1	1, 2, 3, 4

Elective Basket (Take Any One)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	BIO207	Immunology	BIO1001	2:0:1	1, 2, 4
2	BIO303	Recombinant DNA Technology	BIO1001	2:0:1	1, 2, 3, 4
3	BIO305	Genomics and Proteomics	BIO1001	2:0:1	1, 2, 3, 4
4	BIO307	IPR, Bio-regulatory affairs, and Bioethics		3:0:0	4

Minor in Chemistry

Department of Chemistry | School of Natural Sciences

Minor Philosophy

SNIOE's flexible undergraduate curriculum allows students to pursue a Minor in Chemistry alongside a major in another discipline — Biotechnology, Physics, Engineering, and beyond. Centred on “learning by doing”, the program builds a solid foundation in chemical principles and laboratory skills: introductory courses for basic concepts, foundation courses for breadth across the five major areas of chemistry, and specialized electives by interest — all within the investigative B.Sc. (Research) framework, preparing students for diverse careers in industry and academia.

Why pursue this Minor?

- Interdisciplinary flexibility — pair a Chemistry minor with majors across biotechnology, engineering, and environmental science.
- A research-driven, “learning by doing” curriculum — extensive laboratory work and early exposure to modern analytical instrumentation.
- A top-tier department, ranked among the top 25 in India by the Nature Index.
- Specialized areas beyond general chemistry: Materials Chemistry, Computational Chemistry, and Chemical Biology.
- Skill development in critical thinking, problem-solving, and data analysis.

Program Learning Goals

20 credits = 8-credit Introductory (Minor Core-A) + 8-credit Foundation (Minor Elective-B) + In-Depth (Minor Elective-C). Not more than 50% of the Minor credit requirements can be met from 1000-level courses.

1. Core-A (Introductory): mandatory CHY1011 and CHY2014 cover basic chemical concepts — stoichiometry, states of matter, atomic and molecular structure and bonding, thermodynamics, equilibria, and kinetics.
2. Elective-B (Foundation): breadth across the five major areas of chemistry — analytical, biochemistry, inorganic, organic, and physical — with hands-on laboratory experience of modern analytical instrumentation.
3. Elective-C (In-Depth): advanced instruction developing critical thinking, problem-solving, data analysis, and modelling.

Minor Curriculum Matrix

	Minor Core-A	Minor Elective-B	Minor Elective-C	Total Credits
Min Credits	8	8	4	20
Number of Credits to Choose	8	16	12	

Core Courses (Category A)

Sr	Course Name & Code	Pre-requisite	Credits (L:T:P)	Level	PLGs
1	Chemical Principles (CHY1011)	None	3:1:1	1000s	PLG 1
2	Physical Methods in Chemistry (CHY2014)	CHY1011	2:0:1	2000s	PLG 1

Elective Basket (Category B — any two)

Sr	Course Name & Code	Pre-requisite	Credits (L:T:P)	Level	PLGs
1	Basic Organic Chemistry-I (CHY1022)	CHY1011	2:1:1	1000s	PLG 2
2	Inorganic Chemistry-I (CHY1044)	CHY1011	3:0:1	1000s	PLG 2
3	Basic Organic Chemistry-II (CHY2012)	CHY1011, CHY1022	2:1:1	2000s	PLG 2
4	Inorganic Chemistry-II (CHY2045)	CHY1011, CHY1044	3:0:1	2000s	PLG 2

Elective Basket (Category C — any one)

Sr	Course Name & Code	Pre-requisite	Credits (L:T:P)	Level	PLGs
1	Chemistry of Carbonyl Compounds (CHY3022)	CHY1022, CHY2021	2:1:1	3000s	PLG 3
2	Coordination Chemistry (CHY3042)	CHY1011, CHY1044, CHY2045	3:0:1	3000s	PLG 3

Sr	Course Name & Code	Pre-requisite	Credits (L:T:P)	Level	PLGs
3	Molecular Spectroscopy (CHY4033)	CHY1011, CHY2014, CHY1003 / CHY1004 / MAT101	3:1:0	4000s	PLG 3

As no more than 50% of minor credits can come from 1000-level courses, a student can take only one of CHY1022 and CHY1044 to meet the minimum Minor requirements; if both are taken, one counts as additional credits rather than towards the Minor.

Minor in Foundational Mathematics

Department of Mathematics | School of Natural Sciences

Minor Philosophy

The Minor in Foundational Mathematics is designed for students outside mathematics who seek a confident first engagement with the subject. It introduces mathematics as a language for patterns, change, data, and decision-making, with emphasis on conceptual clarity and disciplined problem solving.

Why pursue this Minor?

- A strong, usable mathematical foundation for higher studies, research, and professional work across the sciences, social sciences, business, economics, and computing.
- Particularly valuable for overcoming anxiety about mathematics — strengthening logical thinking and building tools for interpreting data, modelling situations, and making informed decisions.
- An introduction to the intellectual beauty of mathematics beyond procedural calculation.

Program Learning Goals

1. Fluency in foundational concepts — functions, algebraic reasoning, and calculus — to interpret quantitative relationships and solve routine problems.
2. Use of linear algebra, probability, and statistics to analyse structure, data, and uncertainty in academic, professional, and everyday contexts.
3. Mathematical thinking applied to unfamiliar problems: identifying patterns, constructing logical arguments, and communicating solutions clearly.

Minor Curriculum Matrix

	Core	Elective	Total Credits
Min Credits required	12	8	20
Number of Credits to Choose	16	32	48

Core Course

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	MAT 1001	Calculus 1	None	3:1:0	PLG 1
2	MAT 1002	Calculus 2	MAT 1001/DOM 1001	3:1:0	PLG 1
3	MAT 1060	Linear Algebra	None	3:1:0	PLG 2
4	MAT 1007	Statistical Thinking and Probability	None	3:1:0	PLG 2

Elective Basket (Take Any Two)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	MAT 2046	Combinatorics	MAT1060 MAT1002 or MAT1100 or MAT2004, and MAT1060	3:1:0	PLG 3
2	MAT 4208	Graph Theory	MAT1060	3:1:0	PLG 3
3	MAT 2001	Real Analysis I	MAT1002	3:1:0	PLG 1, 3
4	MAT 4212	Introduction to Mathematical Finance	MAT2005 or MAT3001 or MAT1060 or MAT1007	3:1:0	PLG 2, 3
5	MAT 3001	Statistical Inference	MAT1002 or MAT1007 or DOM 1002	3:1:0	PLG 2
6	MAT 1005	Number Theory	None	3:1:0	PLG 3
7	MAT 4204	Optimization I	MAT2001 or MAT1060	3:1:0	PLG 3
8	MAT 2005	Algebra I	MAT1060	3:1:0	PLG 2, 3

Minor in Mathematics

Department of Mathematics | School of Natural Sciences

Minor Philosophy

The Minor in Mathematics offers non-mathematics majors a rigorous and useful mathematical toolkit, blending conceptual foundations with problem-solving methods that support applications across science, engineering, economics, data-centric fields, and industry. Through core courses in analysis, algebra, differential equations, and statistics, students learn to think precisely, work with abstract structures, and model real-world phenomena, while electives allow tailoring towards discrete mathematics, optimisation, geometry, computation, finance, or machine learning. Overall, the Minor promotes mathematical maturity — careful reasoning, clear communication, and the ability to transfer techniques to new contexts — while preparing interested students for further study in mathematics.

Why pursue this Minor?

- A strong foundation for quantitative careers and higher study: core training in analysis, algebra, differential equations, and statistics.
- Flexible electives to match interests — discrete mathematics, optimisation, geometry, computation, finance, and machine learning.
- Emphasis on rigorous reasoning and communication: proof-based thinking and clear mathematical writing for interdisciplinary work.

Program Learning Goals

1. Apply foundational concepts in real analysis and algebra, constructing clear proofs and formal arguments.
2. Model and analyse quantitative phenomena using differential equations and statistical inference.
3. Use discrete, optimisation, and computational tools to formulate and solve problems, communicating solutions effectively.

Minor Curriculum Matrix

	Core	Elective	Total Credits
Min Credits required	12	8	20
Number of Credits to Choose	16	32	48

Core Courses (Take Any Three)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	MAT 2001	Real Analysis I	MAT1002 or MAT1100 or MAT2004 or CHY 1003 or CHY 1004	3:1:0	PLG 1
2	MAT 2005	Algebra I	MAT1002 or MAT1100 or MAT2004 CHY 1003 or CHY 1004	3:1:0	PLG 1
3	MAT 3003	Differential Equations	MAT1002 or MAT1100 or MAT2004 CHY 1003 or CHY 1004	3:1:0	PLG 2
4	MAT 3001	Statistical Inference	MAT1002 or MAT1100 or MAT1007 or MAT2007 CHY 1003 or CHY 1004	3:1:0	PLG 2

Elective Basket (Take Any Two)

Sr No	Course Code	Course Name	Pre-requisite	Course Credits (L:T:P)	PLGs Mapping
1	MAT 2046	Combinatorics	MAT1002 or MAT1100 or MAT2004, or MAT1060 CHY 1003 or CHY 1004	3:1:0	PLG 3
2	MAT 4208	Graph Theory	MAT2001 or MAT1060	3:1:0	PLG 3
3	MAT 4203	Introduction to Differentiable Manifolds	MAT2001 and MAT4219	3:1:0	PLG 1, 3
4	MAT 4212	Introduction to Mathematical Finance	MAT2005 or MAT3001 or MAT1060 or MAT1007	3:1:0	PLG 2, 3
5	MAT 4219	Metric Spaces	MAT2001	3:1:0	PLG 1
6	MAT 4204	Optimization I	MAT2001 or MAT1060	3:1:0	PLG 3
7	MAT 4100	Statistical Simulation and Computation	MAT3001 or MAT1060	3:1:0	PLG 2, 3
8	MAT 4241	Introduction to Machine Learning	MAT3001 or MAT1060	3:1:0	PLG 2, 3

Minor in Physics

Department of Physics | School of Natural Sciences

Minor Philosophy

A minor in Physics has two aspects: it ensures that a student is well-versed in the core of physics, and it allows the student to learn more advanced aspects of the subject according to his or her interests.

Why pursue this Minor?

- A curriculum with a strong blend of learning physics concepts and applying them to research problems.
- Critical skills and scientific aptitude — mathematical formulation, reasoning, physical intuition, computation, experiment.
- Early research participation helps students find their interests and inspires a challenging career path.

Program Learning Goals

1. Engage in challenging multi-disciplinary problems.
2. Learn physics skills for making quantitative models of complex situations.
3. Synthesize knowledge across areas of physics and communicate scientific ideas effectively.

Minor Curriculum Matrix

	Major Core	Elective Baskets	Elective Basket 2	Total Credits
Min Credits	14	6		20
Number of Credits to Choose	14	20		--

Core Courses [total 14 credits] — for all majors

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	PHY 2001	Thermal Physics	PHY 2007	4 (3:1:0)	1,2,3
2	PHY 2002	Introduction to Quantum Mechanics	PHY 2007	4 (3:1:0)	1,2,3
3	PHY 2007	Abridged course for Minor students	10+2 standard Physics and Mathematics	3 (2:1:0)	1,2,3
4	PHY 2008	Advanced Experimental Physics - I	PHY 2007	3 (1:0:2)	1,2,3

Two courses from any one of the following two baskets [total 6 credits]

Elective Basket 1

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	PHY 3001	Classical Mechanics	PHY 2007	4 (3:1:0)	1,2,3
2	PHY 3003	Classical Electrodynamics	PHY 2007	4 (3:1:0)	1,2,3
3	PHY 3005	Quantum Mechanics-I	PHY 2007 & PHY 2002	4 (3:1:0)	1,2,3
4	PHY 3007	Electronics - II	PHY 2007	4 (2:1:1)	1,2,3
5	PHY 4065	Non-linear dynamics**	PHY 2007 & PHY 2002	3 (3:1:1)	1,2,3
6	PHY 4063	General theory of Relativity**	PHY 2007 & PHY 2002	3 (3:1:1)	1,2,3
7	PHY 4052	Classical Theory of Fields**	PHY 2007 & PHY 2002	3 (3:1:1)	1,2,3
8	PHY 5058	Semiconductor Physics and Devices**	PHY 2001 & PHY 2002	3 (3:0:0)	1,2,3

Elective Basket 2

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
1	PHY 3002	Statistical Physics	PHY 2001	4 (3:1:0)	1,2,3
2	PHY 3004	Condensed Matter Physics	PHY 2001 & PHY 2002	4 (3:1:0)	1,2,3
3	PHY 3006	Quantum Mechanics – II	PHY 3005	4 (3:1:0)	1,2,3
4	PHY 3008	Advanced Experimental Physics - II	PHY 2008	3 (1:0:2)	1,2,3
5	PHY 4064	Computational and Numerical Analysis**	PHY 2001 & PHY 2002	3 (3:0:0)	1,2,3
6	PHY 4068	Introduction to Cosmology**	PHY 2001 & PHY 2002	3 (3:0:0)	1,2,3

Sr	Code	Course Name	Pre-requisite	Credits (L:T:P)	PLGs
7	PHY 4090	Astrophysics**	PHY 2001 & PHY 2002	3 (3:0:0)	1,2,3
8	PHY 5072	Soft Matter Physics**	PHY 2001 & PHY 2002	3 (3:0:0)	1,2,3

**** Example electives; a course may be selected from the major elective offerings for a given semester.**