

Subject: - Regarding Open Elective course(s) for the next Semester i.e. Odd Semester AY 2024-25 (July-Dec 2024).

Dear students,

The Dean's Office is in the process of finalizing the courses to be offered as "Open Electives" for the next semester. To streamline this process, we have created a **Google Form** for you to indicate your preferences. You are advised to show your interest by completing the form and selecting your desired Open Elective preferences accurately within a simulated time frame.

Please use the google form below for the purpose: <https://forms.gle/4edYcnwznxYTGXaA8>

The last date for submission of Google Form for Open Elective choices is **19-April-2024**.

The following programmes having **Open Elective courses** in their next semester as per their course-schemes:

Department	Program	Current Semester	Batch	Next Semester	Course Name/Type	Credit
CSE	MCA	2	2023	3	OE-1 (MOOC)	3
CSE	B.Tech. (CSE)	4	2022	5	OE-2 (MOOC)	3
CSE	B.Tech. (CSE)	6	2021	7	OE-4 (MOOC)	3
MDE	B.Tech. (ECE)	6	2021	7	OE-4 (MOOC)	3
APS	B.Sc. (Mathematics)	4	2022	5	OE-3	3
SOM	BBA	4	2022	5	OE-2	3
SOM	BBA (BA)	4	2022	5	OE-2	3
SOM	BBA (DM)	4	2022	5	OE-2	3
SOM	BBA (E&FB)	4	2022	5	OE-2	3
SOM	B.Com.	4	2022	5	OE-2	3
SOM	B.Com. (FM)	4	2022	5	OE-2	3
SOM	BA (Economics)	4	2022	5	OE 3	3
SOM	BA (Psychology)	4	2022	5	OE-2	3
SOM/CLL	BA (English)	2	2023	3	OE-1	3
SOM/CLL	BA (English)	4	2022	5	OE-3	3
CSE	M.TECH-CSE (FT)	2	2023	3	OE	3
MDE	M.TECH-CE (FT)	2	2023	3	OE	3
MDE	M.TECH-ECE (FT)	2	2023	3	OE	3
MDE	M.TECH-ME (FT)	2	2023	3	OE	3

The following points are important for this activity:

1. The students from programmes where OE (MOOC) is mentioned in their course schemes (***See the table above for details***) are allowed to opt for "**MOOC courses**" only as Open Elective Course(s) for next semester. List and SOP for MOOC courses are attached as **Annexure#1 and Annexure#3 respectively**.
2. All other students can opt from both on campus (regular) courses (***details attached as Annexure#2***) and MOOC courses as per their interest. However, we encourage such students also to opt for an online MOOC course as Open Elective Course for next semester as this will give them additional opportunity to get external certification through this.
3. Students must ensure that the choices they submit have not been studied in previous semesters under core/elective categories. If such cases are identified, MOOC courses will be allotted instead, rendering all their choices invalid.
4. The final selection of Open Electives will be displayed by the Dean's Office once all students' choices are received and eligibility criteria have been verified/matched.
5. Allotment of students for on-campus (regular) courses will be based on CGPA and order of preference.
6. Students who fail to submit their choices by the stipulated date will be dis-qualified from getting any on-campus (regular) course as an Open Elective Course. However, they have the option to choose any MOOC course from the list of MOOC courses attached with this email through "***change request form***" OR it will be presumed that the student will drop out from OE during the next semester.
7. Dropout students will be required to enrol and pass this OE course in subsequent semesters to become eligible for their degrees.

Important dates related to this activity:

- The last date for submission of Google Form for Open Elective choices is **19-April-2024**.
- The first draft of the allotted list for Open Elective Courses will be displayed on **30-April-2024**.
- Modification in Open Electives will be done up to **06-May-2024 only**.
(Change Request Form to be issued later)
- The final list of Open Electives for next semester will be displayed after incorporating all requests on **08-May-2024**.

For any clarification, contact the Dean's Office.

Open Elective MOOC courses (Annexure-I)

Sr. No.	Offered by	Code	Course	L-T-P	Vacancy (Min 30 & Max 60 except MOOC)	Descriptions	link (for MOOC Courses)	Prerequisite	Specialization	Course Type (Regular/MOOC)	Name of probable instructor
1	CSE	CSM201	The Joy of Computing using Python	2-0-2 (3)		A fun filled whirlwind tour of 30 hrs, covering everything you need to know to fall in love with the most sought after skill of the 21st century. The course brings programming to your desk with anecdotes, analogies and illustrious examples. Turning abstractions to insights and engineering to art, the course focuses primarily to inspire the learner's mind to think logically and arrive at a solution programmatically. As part of the course, you will be learning how to practice and culture the art of programming with Python as a language. At the end of the course, we introduce some of the current advances in computing to motivate the enthusiastic learner to pursue further directions.	https://onlinecourses.nptel.ac.in/noc23_cs20/preview	None	--	MOOC	
2	CSE	CSM203	Foundations of Cryptography	3-0-0 (3)		The course provides the basic paradigm and principles of modern cryptography. The focus of this course will be on definitions and constructions of various cryptographic objects. We will try to understand what security properties are desirable in such objects, how to formally define these properties, and how to design objects that satisfy the definitions. The aim is that at the end of this course, the students are able to understand a significant portion of current cryptography research papers and standards.	Link not available yet	None	--	MOOC	
3	CSE	CSM205	Data Analytics with Python	2-0-2 (3)		We are looking forward to sharing many exciting stories and examples of analytics with all of you using python programming language. This course includes examples of analytics in a wide variety of industries, and we hope that students will learn how you can use analytics in their career and life. One of the most important aspects of this course is that you, the student, are getting hands-on experience creating analytics models; we, the course team, urge you to participate in the discussion forums and to use all the tools available to you while you are in the course!	Link not available yet	None	--	MOOC	
4	CSE	CSM207	Problem Solving Through Programming In C	3		This course is aimed at enabling the students to: Formulate simple algorithms for arithmetic and logical problems, Translate the algorithms to programs (in C language), Test and execute the programs and correct syntax and logical errors, Implement conditional branching, iteration and recursion, Decompose a problem into functions and synthesize a complete program using divide and conquer approach, Use arrays, pointers and structures to formulate algorithms and programs, Apply programming to solve matrix addition and multiplication problems and searching and sorting problems, Apply programming to solve simple numerical method problems, namely root finding of function, differentiation of function and simple integration	https://onlinecourses.nptel.ac.in/noc23_cs53/preview	None	--	MOOC	
5	CSE	CSM208	Programming in Modern C++	2-0-2 (3)		There has been a continual debate on which programming language/s to learn, to use. As the latest TIOBE Programming Community Index for August 2021 indicates – C (13%), Python (12%), C++ (7%), Java (10%), and C#(5%) together control nearly half the programming activities worldwide. Further, C Programming Language Family (C, C++, C#, Objective C etc.) dominate more than 25% of activities. Hence, learning C++ is important as one learns about the entire family, about Object-Oriented Programming and gets a solid foundation to also migrate to Java and Python as needed. C++ is the mother of most general purpose of languages. Course includes the OOPs concepts and language constructs.	https://onlinecourses.nptel.ac.in/noc23_cs50/preview	None	--	MOOC	
6	MDE	ECL479	Introduction to IIOT	2-0-2 (3)	60	Internet of Things (IIoT) is presently a hot technology worldwide. Government, academia, and industry are involved in different aspects of research, implementation, and business with IIoT cuts across different application domain verticals ranging from civilian to defence sectors. These domains include agriculture, space, healthcare, manufacturing, construction, water, and mining, which are presently transitioning their legacy infrastructure to support IIoT. Today it is possible to envision pervasive connectivity, storage, and computation, which, in turn, gives rise to building different IIoT solutions. IIoT-based applications such as innovative shopping system, infrastructure management in both urban and rural areas, remote health monitoring and emergency notification systems, and transportation systems, are gradually relying on IIoT based systems. Therefore, it is very important to learn the fundamentals of this emerging technology.	https://onlinecourses.nptel.ac.in/noc22_cs53/preview	None	Internet of Things certification	MOOC	
7	MDE	ECL478	Introduction to Industry 4.0 and Industrial IIOT	3-0-0 (3)	50	Industry 4.0 concerns the transformation of industrial processes through the integration of modern technologies such as sensors, communication, and computational processing. Technologies such as Cyber Physical Systems (CPS), Internet of Things (IIoT), Cloud Computing, Machine Learning, and Data Analytics are considered to be the different drivers necessary for the transformation. Industrial Internet of Things (IIoT) is an application of IIoT in industries to modify the various existing industrial systems. IIoT links the automation system with enterprise, planning and product lifecycle	https://onlinecourses.nptel.ac.in/noc22_cs52/preview	Introduction to IIoT	NA	MOOC	
8	SOM&LS	SMM300	Introduction to Cultural Studies	3		This course intends to examine culture, cultural identities and politics of production across various human historical conditions. Culture is examined in this course as an asymmetrical entanglement of material and abstract attributes and hence the course draws on political theory, psychology and critical theory, among other disciplines, in order to investigate the constructed categories of identity, authority and knowledge.	https://onlinecourses.nptel.ac.in/noc23_hs51/preview	NIL		FULL MOOC	
9	SOM&LS	SMM302	Business analytics and data mining Modeling using R	3		Objective of this course is to impart knowledge on use of data mining techniques for deriving business intelligence to achieve organizational goals. Use of R (statistical computing CSS - MOOCs Proposal software) to build, assess, and compare models based on real datasets and cases with an easy-to-follow learning curve.	https://onlinecourses.nptel.ac.in/noc23_me14/preview	NIL		FULL MOOC	
10	SOM&LS	SMM312	Leadership and Team Effectiveness	3		To provide a framework for the students to understand the importance of Leadership and team effectiveness in organizations. To develop an understanding of the interpersonal processes and group dynamics. To provide a theoretical understanding of leadership practices in organizations. To provide an understanding of factors influencing teamwork and team leadership. To evaluate the role of leadership in the development of an institution. Course Learning Outcomes By the end of the course the student should be able to: Explain how global leadership skills contribute to leadership effectiveness. Understand the leader's role in team-based organizations. Explain the potential contribution of outdoor training to the development of team leadership. Explain the basics of leadership during a crisis. Explain how evidenced based leadership can contribute to contingency and situational leadership.	https://onlinecourses.nptel.ac.in/noc23_me28/preview	NIL		FULL MOOC	
11	SOM&LS	SMM314	Global Marketing Management	3		Global business comprises of a large and growing portion of the world's total business. Today, global events and competition affect almost all companies - large and small - because most sell output to and secure supplies from foreign countries. Many companies also compete against products and services that come from abroad. This most managers, regardless of industry or company size, need to approach their operating strategies, from a global perspective. In view of the above, this course provides a fresh, up-to-date analysis of the global business environment and successfully blends a comprehensive review of global business with exhaustive discussion of what happens in the many parts of the global market. Moreover, the course not only describes the ideas of global marketing but also presents many contemporary examples, scenarios and cases. This course will therefore provide first-hand knowledge of Global Marketing operations and help practitioners and budding scholars of international business.	https://onlinecourses.nptel.ac.in/noc23_me23/preview	NIL		FULL MOOC	

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12	SOM&LS	SMM316	Education for Sustainable Development	3		Education is a human right and a force for sustainable development and peace. Every goal in UNESCO's '2030 Agenda' (17 Sustainable Development Goals-SDGs) requires education to empower people with the knowledge, skills and values to live in dignity, build their lives and contribute to their societies. While governments hold the main responsibility for ensuring the right to quality education, the '2030 Agenda' is a universal and collective commitment. It requires political will, global and regional collaboration, and active engagement of educational institutions, civil society, youth, corporate/private sector, and other multilateral agencies to tackle educational challenges and build systems that are inclusive, equitable and relevant to all learners/stakeholders.	https://onlinecourses.nptel.ac.in/noc23_hs17/preview	NIL		FULL MOOC	
13	SOM&LS	SMM318	Energy Resources, Economics and Environment	3		This course will equip students with the tools necessary for economic analysis and quantification of impacts of energy systems. We will review the availability of energy resources and study methods for quantification of resource depletion and scarcity. The course will cover basic concepts in economics and their application to energy systems. Tools and techniques for project economics for an individual/company perspective and macro-decision making for society will be introduced. We will discuss basic concepts of welfare economics and environmental economics that are necessary for energy systems analysis and their environmental impacts.	https://onlinecourses.nptel.ac.in/noc23_hs69/preview	NIL		FULL MOOC	
14	SOM&LS	SMM322	Globalization: Theoretical Perspectives	3		This course aims to introduce students to some of the central debates in social theory on globalization. It aims to engage with the following broad theoretical concerns of globalization: Modernity and late/post modernity; spatial and temporal aspects of globalization; cultural, socio-political and technological transformations in a global world. It engages with these themes by analysing some of the most important scholars of globalization. The course also examines certain specific themes in Indian society to illustrate their engagement with the process of globalization.	https://onlinecourses.nptel.ac.in/noc23_hs46/preview	NIL		FULL MOOC	
15	SOM&LS	SMM326	Psychology Of Stress, Health And Well-Being	3		In today's world, mental distress and disorders are common and accounting for a significant burden of disability within nations. However, at the same time, there has been a growing interest in understanding and enhancing positive mental health and wellbeing particularly in the field of psychology. Overall, this course systematically addresses the issues of health, adjustment and well-being. It reviews the topics of stress and health while adding happiness and well-being theory and research to enrich our understanding of both negative and positive side of human behavior. Overall, this course will attempt to provide insights from the field of psychology to make your life more <u>satisfying and meaningful</u> .	https://onlinecourses.nptel.ac.in/noc23_hs71/preview	NIL		FULL MOOC	
16	SOM&LS	SMM330	United Nations Sustainable Development Goals (UN SDGs)	3		UN SDGs are a roadmap for a paradigm shift in the prevalent economic model. The course tries to establish the underlying understanding behind this UN-led initiative, the value of sustainable development, how it touches our lives, and the efforts required to achieve them. The course intends to elaborate on the evolution of scope under the dynamic concept of sustainability and UN SDGs-led cohesive societal framework to evolve a resilient community worldwide. The course elaborates on seventeen UN SDGs, mapping their systemic perspectives and the need for tomorrow. It talks about the interconnectedness of the planet, products, processes wrt SDGs. It touches on the Paris agreement on climate change, India's participation in it, and its commitment to SDGs. It also shows a glimpse of innovation-led design processes to undertake challenges in its path. The course uses case studies from India and international examples to better understand issues, approaches, and solutions. The newly developed course is framed using state-of-the-art studies, policy documents, reports, and research works.	https://onlinecourses.nptel.ac.in/noc23_hs57/preview	NIL		FULL MOOC	
17	SOM&LS	SMM334	Business Development: From Start to Scale	3		This 12-week, 60 lecture course titled "Business Development: From Start to Scale" equips the learners with various concepts and frameworks for establishing and growing businesses. Focusing on customers and markets, the course covers the foundational as well as advanced constructs of business development. Multiple practical examples and case studies are provided. This versatile course will be useful for students and working professionals, and relevant for startups and entrepreneurial firms as well as established small, medium, and large companies for crafting and executing their growth journey. This course, in addition, will be an ideal next-step course for those who would complete the Entrepreneurship course.	https://onlinecourses.nptel.ac.in/noc23_mg61/preview	NIL		FULL MOOC	
18	SOM&LS	SMM338	Marketing Analytics	3		The students of this course should have already attended Marketing Management and Introduction to Business Analytics. Therefore we expect them to know basics of marketing and business analytics tools. In this course we will combine various concepts of marketing and business analytics in storytelling and problem solving. Real life marketing problems are often solved through a sequence of quantitative approaches. Identifying that sequence in the context of various marketing problems is important. This course will help the students in building the same.	https://onlinecourses.nptel.ac.in/noc23_mg55/preview	NIL		FULL MOOC	
19	SOM&LS	SMM344	Talent Acquisition and Management	3		The course will be primarily based on interactive lectures, discussions and class exercises. Case studies and simulation techniques will also be extensively used in the class to illustrate concepts and practices and to help students develop the necessary skills required for Talent Management.	https://onlinecourses.nptel.ac.in/noc23_mg29/preview	NIL		FULL MOOC	

Open Elective courses offered by various departments (Annexure-II)

S.No	Offered by	Code	Course	L-T-P	Vacancy (Min 30 & Max 60 except MOOC)	Descriptions	link (for MOOC Courses)	Prerequisite	Specialization	Course Type (Regular/MOOC)	Name of probable instructor	Remarks
1	SOM&LS	BSL338	Marketing in Digital Era	2-0-2	60	This course provides learners the ability to formulate and enact intelligent, data-driven marketing strategies. Core content will focus on identifying and understanding digital marketing metrics to gauge success of both social media and traditional digital marketing efforts.		NIL	Marketing	Regular	Dr. Chand Saini	
2	SOM&LS	BSL381	Product and Brand Management	2-0-2	60	This course facilitates learners to understand product portfolio and strategies for building and managing any product as a sustainable brand in the marketplace. This course includes several concepts, like product planning, design thinking, new product development, the significance of brand management, understanding brand equity and managing the brand over time. The course structure is designed in such a way by which, learners will gain knowledge of various aspects and strategies under product and brand management.		NIL	Marketing	Regular	Dr. Kanchan Yadav	
3	SOM&LS	BSL380	Uncovering Music	1-2-0	60	This course has been designed to empower the students in the field of music covering vocal and instrumental music and will develop the foundation for long term certification courses in the field. This course will provide formal training to the students in their respective areas of interest, such as, vocal, guitar, piano, keyboard, percussion etc. from the basic level and equip them with the skill to apply the concepts for advanced level of learning, to be eligible to enrol for various formal certification courses in music. This course will include comprehensive coverage of the elements in music and arts in a synchronized way and all those additional and relevant skill of higher level that are taught at this age.	NA	NONE	NIL	Regular	Kalakul Academy	
4	SOM&LS	BSL390	Unveiling Rhythms	1-2-0	60	Advance Music		Students must have studied Uncovering Music	Music	Regular	Kalakul Academy	
5	SOM&LS	BSL665	Cross Cultural HRM & Inclusive workplace management	2-0-2	60	Recent definitions concern IHRM with activities of how MNCs manage their geographically decentralized employees in order to develop their HR resources for competitive advantage, both locally and globally. The role and functions of IHRM, the relationship between subsidiaries and headquarters, and the policies and practices are considered in this more strategic approach. IHRM is also defined as a collection of policies and practices that a multinational enterprise uses to manage local and non-local employees it has in countries other than their home countries.		Nil	HRM	Regular	Shikha Yadav	
6	SOM&LS	ENL341	Global economic monetary system	2-0-2	60	This course is designed to familiarize students with international financial transactions and monetary aspects of foreign exchange markets. It focuses on forex market participants, transactions, and derivatives instruments. It enables students to understand the crux of international financial market. It also familiarizes the students with international monetary standard and system so that they can understand the transition of monetary system in modern era.		NIL	Economics	Regular	Dr. Shaveta Sachdeva	
7	SOM&LS	SML200	Engineering Economics	2-0-2	60	This course sets the base for the financial economics, micro and macro economics as a whole and precisely it will help students to learn the practical usage of time value of money, BEP, IRR, NPV, PV, cost and revenue. To enable students to understand the fundamental economic concepts applicable to engineering and to learn the techniques of incorporating inflation factor in economic decision making.		NIL	Economics	Regular	Dr. Parul Khanna	
8	SOM&LS	CML120	Financial Literacy	2-0-2	60	Financial literacy subject focuses on the ability to manage personal finance effectively, which requires experience of making appropriate personal finance choices, such as savings, insurance, real estate, college payments, budgeting, retirement and tax planning.		Nil	Finance	Regular	Dr. Deergha Sharma	
9	SOM&LS	BSL354	Workplace Diversity and Inclusion	2-0-2	60	This course examines the effect diversity has in the modern workplace both domestically and internationally. The focus is on issues related to cultural, racial, ethnic, religious, linguistic, physical, gender, and age differences, among others. Students will analyse and gain an appreciation for diverse demographics and the meaning and dimensions of diversity in the workplace and examine the implications and impact of ethics and social responsibility of managing a diverse workforce. The course shall enable students to investigate the diverse demographics and the meaning of diversity in today's workplace; analyze the implications and impact of social responsibility when managing a diverse workforce; evaluate, and critique the implications of stereotyping, prejudice and workplace discrimination; assess workplace challenges and opportunities when creating inclusive corporate cultures and; apply course learning to student's organization and personal work environment.		Nil	Finance	Regular	Dr. Sona Vikas	
10	CSE	CSL263	Advanced Excel	2 - 0 - 2	60	This course will help students to enhance their employability skills and would get an edge in the career scoping in industry. Timely learning and hands on practice would benefit in various career fields. As data analytics/analysis is required in most of the profiles in the industry placements, this course would help in building good base and sound knowledge of the technical skills requirements.						

Open Elective courses offered by various departments (Annexure-II)

S.No	Offered by	Code	Course	L-T-P	Vacancy (Min 30 & Max 60 except MOOC)	Descriptions	link (for MOOC Courses)	Prerequisite	Specialization	Course Type (Regular/MOOC)	Name of probable instructor	Remarks
11	CLL	CLL360	Introduction to English Literature	3-0-0	60	This course is essentially aimed at highlighting the way Literature voices human emotions and struggles through different forms such as Drama, Novel, Poetry and Short Stories and Non-Fiction Prose. An element of Cinema has been added to it to make it more relevant to present day students and make them appreciate the way written classics get translated on celluloid and still retain their literary qualities. Finally, a collection of short poems from across the world is added to acquaint the students with the lyricism, inherent musicality and thematic concerns of poets across the globe.	Blended MOOC	Nil	Nil	Blended MOOC	Dr. Chetna Karnani	Although Dr. Chetna Karnani is the course coordinator and will be taking the in-person lecture with students, the content for video lectures and reading materials will be provided by other faculty members - Dr. Divyaha, Dr. Shrutimita, Dr. Payal and Dr. Gouri - as well.
12	CLL	CLL201	Innovative Thinking and Positivity	2 - 0 - 2	60	This course will help students to attain the ability to check the quality of thoughts and change them by knowing the thought process cycle, hence bringing transformation in attitude, behaviour, personality and destiny. This course will also support students to lead life with a solution-oriented approach to handle tough situations and learn meditation as a remedy to all our problems. Students shall overcome exam phobia or fear and develop optimism and positive mental attitude towards life and learn to lead a stress-free life by learning the art of conflict resolution.	Regular	Nil	Nil	Regular	Sister Sudesh	
13	APS	PYL322	Introduction to Quantum Computers	3-1-0.	60	This course serves as an introductory exploration into the fascinating field of quantum computing. Quantum computing represents a paradigm shift in computation, leveraging the principles of quantum mechanics to solve problems that are currently intractable for classical computers. The course is designed to provide undergraduate students with a foundational understanding of quantum computing concepts, algorithms, and applications.		Passed in Engineering Physics (PYL150)	NIL	Regular	Dr. Arjun Singh	
14	DOP	PCL210	Adapting and Thriving through Emotional Intelligence	2-0-2	60	This course will acquaint students with the knowledge of emotional intelligence and its importance to personal and professional success, recognizing the four domains of Emotional Intelligence, employing the emotions for better decision making and using it to motivate others. This course includes global as well as Indian perspectives into emotional intelligence and emotional quotient. The course aims to provide outcomes like improved self-awareness, enhanced relationship management, and better decision making skills.		NIL	Psychology	Regular	Dr. Jyotika Goyal	
15	DOP	PCL310	Self in the new world	2-0-2	60	This course aims to present an overview of different selves a person plays in the present times. Specifically, the recent approaches in self-concept with its main processes including, but not limited to development of the self, ideal self, Real self, Mirror self, self-esteem, self-compassion, and self-regulation. Cultural aspects of self-concept and attachment processes will be specifically focused. This course will help you gain. The last but not least, we will discuss how to apply the self theories and research we learn to our daily life, and thus, you will have an opportunity to gain insight and reflections on your own sense of self.		NIL	Psychology	Regular	Ms. Harshita Jha	
16	APS	MAL251	Vedic Mathematics	3-0-0	120	The course will help the students to speed up calculations which are stumbling blocks in mathematics. The objective is to solve the mathematical problems by using Vedic sutras.		No		Regular	Dr. Chetna Tyagi	
17	APS	MAL252	Mathematical reasoning and Aptitude	3-0-0	120	The course will help to crack the competitive exams through mathematical reasoning. The students will be able to solve mathematical problems through puzzles and logical aptitude with high speed and accuracy.		No		Regular	Dr. Chetna Tyagi	
18	APS	MAL250	Engineering Mathematics III	3-0-0	60	Numerical analysis, Probability & Complex Analysis		Maths I & II		Regular	Dr. Pooja Punyani	
19	APS	MAL280	Linear Algebra & Its Applications	3-0-0	60	Vector space, Norm, Linear Transformation, Matrix representation, Eigen Value, Canonical forms		Maths I & II		Regular	Dr. Tarul Garg	
20	APS	MAL310	Numerical Methods	2-0-2	60	System of linear equations, nonlinear equations, interpolation, solution of differential equations		Maths I & II		Regular	Dr Anshu Malhotra	
21	APS	MAL260	Advanced Statistics	3-0-0	60	Probability, Conditional prob, Prob distributions, Sampling distribution, Estimation, Hypothesis Testing		No		Regular	Dr Seema Thakran	
22	APS	PYL321	Nanotechnology- Principles And Applications	3-0-2	30	Students are introduced to the core concepts of nanotechnology in this course, which also covers the methods and procedures used for the synthesis and characterization of nanomaterial's, as well as the physical and chemical characteristics of materials at the nanoscale. The course will cover a variety of subjects, such as the different types of nanostructures, their characteristics and behaviors, and how they are used in industries including electronics, optics, energy, and biology.	NA	NIL		Regular	Dr. Chetna Tyagi	

Open Elective courses offered by various departments (Annexure-II)

S.No	Offered by	Code	Course	L-T-P	Vacancy (Min 30 & Max 60 except MOOC)	Descriptions	link (for MOOC Courses)	Prerequisite	Specialization	Course Type (Regular/MOOC)	Name of probable instructor	Remarks
23	MDE	CEL402	Disaster Management	2-1-0	60 (Only for SOET Students)	Seismic Micro-zonation, Natural and Manmade disasters, Prevention & Mitigation Techniques, Role of Remote Sensing and GIS in Disaster Management. Seismic Design Concepts	NA	NIL	NIL	Regular	Mr. Lokesh Choudhary	
24	MDE	CEL405	Society and Sustainability	2-1-0	60	This course discusses about need of sustainability for society, concept of sustainable cities through case studies, challenges in achieving sustainability using case studies, social dimensions involved in sustainability challenges, study of response of society towards sustainable development, concept of low carbon economy, Concepts of ESG and circular economy, CSR.	NA	NIL	Sustainability Certificate Course	Regular	Dr. Vaishali Sahu	
25	MDE	MEL613IP	Project Management	2-1-0	60 (Only for SOET Students/APS/BCOM/Mat hs Background Student)	Introduction to Project management: The growing importance/d relevance in the current environment. Project vs. Ongoing Operations, project characteristics, common terms used in project, growing importance, steps & check points, phases in the project cycle, Project Types: Pure Project, Functional Project and Cross-Functional or matrix structure. People aspect: Project leader, Roles, responsibilities, authority, accountability, team structure, stake holders. Project appraisal: Project Budgeting, Investment Planning, Pay back periods, ROI, IRR, NPV, project selection decisions. Project Risk Management: Risk identification, its assessment, Mitigation plan and case study. Project Network techniques: Work Breakdown Structure, Project Control Charts, GANTT charts, Network Planning Models; AOA & AON approach, Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), Floats, Network understanding, drawing and the analysis. Project Software- Primavera software and its application. Project Crashing & Leveling: Time-Cost Trade-off, Crashing, Resource loading and Leveling. Project control and evaluation: Project Control and Evaluation Mechanisms, Project Time and Cost Overruns, Schedule / cost / Time / Resource variation over time. Interaction with an experienced project expert from industry: Sharing of the practical do's/ don'ts and other learnings. Project ethics and contractor management. Project failure prevention: Causes of Project success & Failure, failure preventive measures, Case Studies Relating to Successful and Unsuccessful projects.	NA	Preliminary upto Class 10 Maths Aptitude required	PM Certificate Course	Regular	Dr. Roshan Raman	
26	MDE	MEL590N	Waste Management	2-1-0	60	Ecosystem, waste movement, UN SDG goals, waste handling and generation, consumption, pollution, types of waste, different classifications, waste characterization, Categories of Solid Wastes, E- waste generation & handling, Solid Waste management tools - techniques for reducing production of waste, managing through segregation and scientific disposal, Waste reduction strategies, Economic benefits, Conventional Practices vs Modern Practices; Life Cycle Analysis, Extended Producer Responsibility, Ecological Footprint, Sustainable consumption production.	NA	NIL	NIL	Regular	Dr Akanksha Mathur	
27	MDE	MEL611TH	Renewable Energy Sources	2-1-0	60 (Only for SOET Students/APS)	National and International energy scenario; Energy security and climate change; Various forms of renewable energy sources; concept of sustainability; their relative merits and demerits and barriers to their commercialization; Solar energy: solar heating and cooling, solar thermal and photovoltaic power generation systems, Wind energytypes of wind mills; hydro power plants; Biomass energy; biofuels and biomass, Digesters-fixed and floating digester biogas plants; Geothermal energy; Ocean thermal energy; Hydrogen as an alternative fuel and fuel cell, magneito hydrodynamic power generations. ; Liveliest cost of energy and grid parity, case study on solar energy system, wind conversion system, biomass and geothermal energy system; Cost benefit analysis and environment concerns of conventional source of energy.	NA	NIL	NIL	Regular	Dr Rohit Singh Lather	
28	MDE	MEL630 IP	Fundamentals of Supply Chain Management	2-1-0	60	Concepts, Structure, and Overview. Importance of SCM and Enablers, Supply chain Performance in Indian Context. Types of Supply Chains, Improving the Supply chain performance. Analysis and Material Flow through Supply Chain: Modes of Transportation. Managing Information flow in Supply Chains: Bullwhip Effect. Supply chain Integration strategies. Supply Chain Restructuring: Postponement strategy, Advancement of Customer Ordering Point, Change in Shape of Value-Addition Curve. Restructuring of Supply Chain Architecture. Introduction to Agile Supply Chains. Introduction to Green/Reverse Supply Chain. Case studies	NA	NIL	Certificate Course	Regular	Dr. Anmol Bhatia	
29	MDE	MEL617	Business Agile Project Management	2-0-2	60 (Only for SOET Students/APS/BCOM/Mat hs Background Student)	Project Stakeholder Management: Project Stakeholder Management: Introduction, Importance of Stakeholder Management, Stakeholder Identification and Register, Stakeholder Classification and Analysis, Stakeholder Management Best Practices, Project Stakeholder Management Processes Identify Stakeholders, Plan Stakeholder Management, Management Stakeholder Engagement, Control Stakeholder Engagement. Project Procurement Management: Introduction, What is a Contract? Centralized Vs. Decentralized Contracting, Different types of Contracts and Comparison, How to choose contracts: A few sample case studies, Key terms in Procurement Management, Knowledge Area, Plan Procurements, Conduct Procurements, Administer Procurements, Close Procurements. Project Risk Management : Project Risk Management How is risk calculated, Utility Theory Introduction, Risk Categorization, Decision Tree, Risk Reserve Analysis, The Risk management Knowledge Area Processes, Plan Risk Management, Identify Risk, Perform Qualitative and Quantitative Risk Analysis, Perform Risk Analysis, Plan Risk Responses, Monitor and Control Risks, Monte Carlo Simulation and Sample Case Studies for Project Risk Management.	NA	Students studies project Management course	Certificate Course	Regular	Dr. Anmol Bhatia	

Open Elective courses offered by various departments (Annexure-II)

S.No	Offered by	Code	Course	L-T-P	Vacancy (Min 30 & Max 60 except MOOC)	Descriptions	link (for MOOC Courses)	Prerequisite	Specialization	Course Type (Regular/MOOC)	Name of probable instructor	Remarks
30	MDE	ECL479	Introduction to IOT	2-0-2	60	Internet of Things (IoT) is presently a hot technology worldwide. Government, academia, and industry are involved in different aspects of research, implementation, and business with IoT. IoT cuts across different application domain verticals ranging from civilian to defence sectors. These domains include agriculture, space, healthcare, manufacturing, construction, water, and mining, which are presently transitioning their legacy infrastructure to support IoT. Today it is possible to envision pervasive connectivity, storage, and computation, which, in turn, gives rise to building different IoT solutions. IoT-based applications such as innovative shopping system, infrastructure management in both urban and rural areas, remote health monitoring and emergency notification systems, and transportation systems, are gradually relying on IoT based systems. Therefore, it is very important to learn the fundamentals of this emerging technology.	https://onlinecourses.nptel.ac.in/noc22_cs53/preview	None	Internet of Things certification			
31	MDE	ECL263	CMOS VLSI Design & Layouts	2-0-4	60	VLSI design styles, MOS transistor. Enhancement and Depletion MOS transistors, Threshold Voltage, Fabrication and Modeling, MOSFET Scaling, CMOS Inverter, transfer characteristics, Power, Delay and Energy parameters, Combinational CMOS Logic Design, Stick diagrams, Clocked Latch and Flip flop circuits, Dynamic CMOS logic, Latches and Registers, Single Stage Amplifiers, Differential Amplifiers, CMOS operational amplifiers, Design of Arithmetic Building Blocks. The course will be project based course with more weightage of hands-on project work to be done on industry software-CADENCE EDA	NA	Digital Electronics & Computer Architecture	Certificate Course	Regular	Dr. Vandana Khanna	
32	MDE	ECL478	Introduction to Industrial4.0 and industrial IOT	2-0-2	60	Industry 4.0 concerns the transformation of industrial processes through the integration of modern technologies such as sensors, communication, and computational processing. Technologies such as Cyber Physical Systems (CPS), Internet of Things (IoT), Cloud Computing, Machine Learning, and Data Analytics are considered to be the different drivers necessary for the transformation. Industrial Internet of Things (IIoT) is an application of IoT in industries to modify the various existing industrial systems. IIoT links the automation system with enterprise, planning and product lifecycle	https://onlinecourses.nptel.ac.in/noc22_cs52/preview	Introduction to IoT	NA	MOOC	Dr. Vandana Khanna	
33	MDE	ECL352	Design for IoT	2-0-2	60	Through this course, a high level view of IOTs, design of smart objects that provide collaboration and ubiquitous services will be explored. Architecture and configuration of Raspberry Pi, ESP32. Design and interfacing with Raspberry Pi and ESP32. RTOS, IoT Protocols, Messaging and Transport protocols, Wireless interfaces, and Design of Arduino Libraries and functions.	NA	Introduction to IoT	NA	Regular	Dr. Pooja Sabherwal	
34	MDE	MEL470	Product Design and Development	2-0-2	60	Introduction to Product design and development. Development Processes and Organizations, Opportunity Identification, Product Planning, Identifying Customer Needs, Product Specifications, Concept-generation, selection and testing. Product life-cycle, Selection of a profitable product. Industrial design, Design for Environment, Design for manufacturing, Prototyping, robust design, Patents and Intellectual Property, Product Development Economics. Mini Projects for teams.	NA	NA	NA	Regular	Dr Satnam Singh	
35	MDE	MEL424	Integrated Logistics Strategy and Supply chain	2-0-2	60	Logistics, Material Handling and Packaging: Functional perspective on logistics measures, Direct reflection of logistics performance, Measurable benefits of using third party logistics provider (3PL), Success factors in optimal 3PL relationships. Material handling systems and the role of packaging, Overview of handling technologies, The rationale and impact of packaging in the supply chain. Transportation Management: Review transportation basics: functionality, modal structure, and participants. Evaluate transportation economy and its impact on pricing. Explore transportation administration practices and key documentation. Introduction to National Logistic Policy 2022. Performance Measurement: Benchmarking, assessment and analysis practices, six specific measures providing insight into supply chain operations, accounting tools critical to overall performance of the supply chain. Supply Chain Risk Management: Evolving responsibilities of supply chain professionals, Examples of security best practices, Dimensions of a sustainable supply chain strategy, Changing dynamics of supply chain management.	NA	NA	NA	Regular	Dr Anmol Bhatia	

SOP FOR MOOC COURSES AT THE NORTHCAP UNIVERSITY

1. **Introduction:** MOOC stands for Massive Open Online Courses which are web-based courses available through multiple online portals. The purpose of the MOOC course is to impart skill-based and advance technology-based online courses to the learners. They are introduced with the motive that courses can be accessed by anyone from anywhere at any time wherein one can go and enroll online for these courses. NCU always wants to enrich the learning experience of its students and thus University is using this platform for MOOC certification and blended learning in their advanced courses to provide informative supplementary content to the learners. This will help learners in getting an in-depth understanding of their subjects.

2. **Objective:** NCU has made it mandatory to enrich learning experience of its students and also to provide an advanced learning experience in two modes: Full MOOC and Blended MOOC(For details refer Annexure-II). Certain courses in the Scheme of Studies of all programs must be identified to be offered in MOOC form. Online courses other than those listed in the scheme may also be offered which can replace the program/open elective courses listed in the scheme. As per UGC, upto 20% of the courses in the curriculum may be taught through full MOOC and the registration of students is mandatory in these courses. As per UGC guidelines, the MOOC courses shall be conducted as per the guidelines issued by the MHRD vide its orders dated 11th March 2016 and subsequent addendums issued by the MHRD.

3. **Broad Guidelines:**
 - i. The online learning courses available on the MOOC's Platform will be considered for credit transfer.
 - ii. The Dean's office in June and November every year shall suggest the list of the online learning courses eligible for credit transfer in the forthcoming Semester to all the departments. The department on their own shall also identify such courses.
 - iii. The departments shall notify the Dean's office of the final choice of MOOC courses to be offered to the students in the forthcoming semester, after due approvals.
 - iv. Course coordinators for each MOOC course shall be allocated by each department/school.
 - v. This process has to be followed before the allocation of the teaching load.
 - vi. The final allocation of chosen MOOC courses shall be notified by the Dean's

office to the students.

- vii. Any student will be permitted to opt for online courses only up to 20% of the total credits being offered in his/her program for certification. Students opting for the online courses must confirm by completing the registration form as provided in Annexure- I and must submit the form to the Dean's office after being duly signed by the department.
- viii. Departments are encouraged to initiate students to enroll for the courses in blended mode to eventually reach the target of upto 20% over the period of time.
- ix. Students opting for an online course through the SWAYAM-NPTEL Local Chapter will be required to share the necessary information with the university and confirm the same on the Swayam portal.
- x. The university shall ensure no overlap of SWAYAM-NPTEL MOOC exams with that of the university mid-semester/internal exam and end-semester/external exam.
- xi. The Full MOOC/ Blended MOOC shall be conducted as per the guidelines mentioned in Annexure-II and the credit/grade transfer for MOOC courses as mentioned in Annexure-III.



(Formerly ITM University, Gurugram)

Application form for MOOC Course – Credit Transfer

1. **Name of Student:** _____
2. **Student Roll No:** _____
3. **Department:** _____
4. **Name of Portal:** _____
(Swayam/NPTEL/Udemy/Coursera/or any other portal approved by University)

S.No.	Course Title	Duration (In weeks)	NPTEL/ MOOC Enrolment No.	Exam Date and Year	*Type (PC/OE/ PE)	NCU Course code and Name)	Mode(Full MOOC)

*PC-Program Core/OE-Open Elective/PE-Program Elective

Declaration by the Student:

1. I have a background and understanding of the content of this course. Also, I understand the pre-requisite of this course. My choice of this course is final and I will not ask for a change of this course once the choice will be finalized.
2. I will comply with all rules and regulations of MOOC courses notified by the University/MOOC Platform from time to time.
3. I also undertake that after completion of the registered course/s, it's my duty to submit the course completion certificate including grade card/mark sheet to HoD's Office/Dean Office otherwise my Marks / Grades will not be incorporated in my mark sheet of the respective semester.
4. I have discussed the choice of this course and discussed the course with my course coordinator and Mentor.
5. I have read and understood all the instructions given in annexure II and III.

Date: _____ **Signature of candidate:** _____

Signature of HoD's office: _____

For Dean

As per the student application and provision in Academic Regulations, the following courses of the above student is /are approved for Registration / Transfer of credits:

Sign of Dean Office: _____

Guidelines for conducting MOOC Courses

As per UGC, upto 20% of the courses in the curriculum may be taught through full MOOC and the registration of student is mandatory in these courses. As per UGC guidelines, the MOOC courses shall be conducted as per the guidelines issued by the MHRD vide its orders dated 11th March 2016 and subsequent addendums issued by the MHRD.

Following are the possible modes to take the MOOC course:

- Self-learning through online with certification with certification (SWAYAM/NPTEL/COURSERA/EDX/UDEMY) platforms with certification (Full MOOC)
- Blended learning mode
- Supplementary mode
- Beyond curriculum- Skill Development and Certification

1. Self-learning through online platforms with certification (Full MOOC)

- Courses must be identified by departments from online platforms well before the starting of the semester and the floating of choices for elective courses.
- Department has to ensure about the course content should be mapped to a minimum of 80% similar to the selected curriculum course.
- Course duration, start date, end date, exam date, and fee for the certificate should be considered for the selection of the courses.
- Duration of the course should not be less than 12 weeks.
- The start and end date should be within the semester dates.
- The department shall review the statistics of the subject from the portal if there are several courses available for the same subject. The subject shall be floated after the review.

- No Attendance requirement for students.
- Certification fee to be paid by students.
- Course certificate should be generated at least 10 days before the announcement of semester results so that this course should be included with other courses for that semester results.
- It is a student's responsibility to submit the assignments and other evaluations timely as stated on the portal of an online course in which they have registered. A student has to give the exam and secure the minimum required marks to pass the course.
- The faculty and student mentor-mentee addition are mandatory for the Swayam course. This will be done by SPOC (Single-point-of-contact) and the Department Coordinator will provide the name of the faculties to SPOC for mentor-mentee addition.
- The course instructor (Mentee) also needs to register for that particular course and can skip the certification part. This will help them guide the students if they have some course content related doubts.
- The equivalent grade will be awarded as per the secured marks/ grade in the online course. Moderation of grades to be done as per guidelines (refer Annexure-III).
- The student must complete the application form mentioned in Annexure-I and submit the form to the DEAN office after being duly signed by the department.

2. Blended Learning Mode

- Courses should be identified from any of the massive open online platforms such as SWAYAM, NPTEL, Coursera, Edx, Udemy, etc. well before starting the semester and floating of choices for elective courses.
- Department has to ensure the Mapping of the content of the MOOC course should preferably be 60-70% similar to the selected curriculum course.
- **Contact hours for Facilitation: One-hour contact for 3 or less credit courses and two-hour contact for 4-5 credit courses** can be scheduled per week in the time-table. It may vary depending on the percentage mapping and the type of the course (particularly specialization) with the MOOC course.
- **Registration of all students is mandatory on the online course portal.**

- Attendance will be counted for such lectures.
- Course duration start date and end date should be considered for the selection of the courses. It is just to ensure that the student can get the study material throughout the semester.
- The course instructor also needs to register for that particular course to get the study material. This will help to guide the students in a one or two-hour facilitation class if any of the students have some course content-related doubt.
- The faculty-student mentor-mentor addition is mandatory for the Swayam course. This will be done by SPOC and the Department Coordinator will provide the name of the faculties to SPOC for mentor-mentee addition.
- An active LMS is required to help the student to supplement the online course content.
- In every class, the course instructor needs to announce the topics to be covered in upcoming week so that students and an instructor can go through that topic in a week and doubts, discussions and assessment can be planned on that topic in the next class.
- Additional assignments/quizzes can be given by faculty if necessary.
- Internal assesment shall be marked on basis of assignments and quizzes submitted on the online course portal as part of continuous evaluation.
- Minor Test and End-Term Test(Major Test) shall be conducted by university as per regular mode.

3. Supplementary Mode

- Courses should be identified from any of the massive open online platforms such as SWAYAM, NPTEL, Coursera, Edx, Udemy, etc. well before starting the semester.
- These courses to be studied by students in addition to the regular courses which will be conducted for full hours as per the scheme.
- No certification is required.
- The mapping of the courses may vary.

4. Beyond curriculum- Skill Development and Certification

- Students can do certification from any platform providing such certification courses.
- Registration information to be shared with concerned faculty/coordinator/mentor.
- These will be counted towards GP credits.

Credit Transfer Policy at NCU for MOOC Courses

1. Credit Mobility for MOOCS

- i. The Northcap University shall transfer the credit weightage to the students for the credits earned through online learning courses through the MOOC platform as specified in the credit plan of the course and curriculum.
- ii. Credit transfer policy will be applicable to all UG, PG, and Ph.d. programs offered by the university as per UGC guidelines.

2. Procedure for Credit Transfer

The procedure for transferring credits in MOOC courses is as follows.

- i. During the current semester, the candidate must register for the online course exam and have submitted the registration form mentioned in annexure-I is only eligible for the credit transfer of the course at university.
- ii. If a 4 credit course is not available as per the choice of the student then he/she can opt for a 3 credit course that is available and 1 credit will have to be acquired through continuous internal evaluation through a mentor.
- iii. If a 3 credit course is not available as per the choice of the student then he/she can opt for a 2 credit course that is available and 1 credit will have to be acquired through continuous internal evaluation through a mentor.
- iv. Students who have qualified in the examinations conducted by the MOOC coordinators and have applied for credit transfer as specified in step i. are exempted from appearing in the continuous and semester and evaluations (internal as well as external for the specified equivalent credit course only) conducted by the university.
- v. In case of failure, the student can take up the same course, if available, in the re-run cycle, for which a separate application has to be made in the process specified

above. However, the student will have an option to take the course in reappear regular mode also, if he fails the opted MOOCs course.

- vi. Fees for the MOOC course shall be borne by the student.
- vii. In order to benefit from the credit of the course, it is the sole responsibility of the student to submit all the necessary evidence to the supervisor of the course.
- viii. In case of delay in SWAYAM results, the university will re-issue the marks sheet for such students.

3. Other Measures

- i. The existing university-level CBCS credit transfer committee shall resolve any issues that may arise in the implementation of this ordinance from time to time.
- ii. The university shall review its credit transfer policy in the light of periodic changes brought by UGC, SWAYAM, NPTEL, and state government through the existing university-level CBCS credit transfer committee.

For Full MOOC courses the NCU grades recommended to be awarded will be as follows:

1	80% and above	A+
2	From 70% to 79.9%	A
3	From 62% to 69.9%	B+
4	From 55% to 61.9%	B
5	From 50% to 54.9%	C+
6	From 45% to 49.9%	C
7	From 40% to 44.9%	D

However, final grades can be decided by the moderation committee.