

Curriculum of Diploma Programme

in

Modern Office Practice



**Department of Science,
Technology and Technical Education (DSTTE),
Govt. of Bihar**

**State Board of Technical Education
(SBTE), Bihar**

Semester – III

Teaching & Learning Scheme

Course Codes	Category of course	Course Titles	Teaching & Learning Scheme (Hours/Week)					Total Credits (C)
			Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+SL)	Total Hours (CI+LI+TW+SL)	
			L	T				
2426301	ASC	Office Organization	03	-	-	02	05	04
2426302	ASC	Management information system	03	-	-	02	05	04
2426303	BEC	Managerial Economics	03	-	-	02	05	04
2426304	BCC	E- TYPING (ENGLISH)	03	-	04	02	09	06
2418305	BEC	Python Programming	03	-	04	02	09	06
2426306	BCC	E- TYPING (HINDI)	-	-	04	02	06	03
2400208	NRC	Sports, Yoga and Meditation	-	-	01	01	02	01
2400110	NRC	Community/ Society Development	01	-	-	-	01	01
2400111	NRC	Principles of Management	01	-	-	-	01	01
Total			17	-	13	13	43	30

Note: Prefix will be added to course code if applicable (T for Theory Paper, P for Practical Paper and S for Term Work)

Legend:

CI: Classroom Instruction (Includes different instructional/implementation strategies i.e. Lecture (L), Tutorial (T), Case method, Demonstrations, Video demonstration, Problem based learning etc. to deliver theoretical concepts)

LI: Laboratory Instruction (Includes experiments/practical performances /problem-based experiences in laboratory, workshop, field or other locations using different instructional/Implementation strategies)

Notional Hours: Hours of engagement by learners, other than the contact hours for ensuring learning.

TW: Term work (includes assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: Self Learning, MOOCs, spoken tutorials, online educational resources etc.

C: Credits = (1 x CI hours) + (0.5 x LI hours) + (0.5 x Notional hours)

Note: TW and SL have to be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome of learning.

Semester - III Assessment Scheme

Course Codes	Category of course	Course Titles	Assessment Scheme (Marks)						Total Marks (TA+TWA+LA)
			Theory Assessment (TA)		Term work & Self-Learning Assessment (TWA)		Lab Assessment (LA)		
			Progressive Theory Assessment (PTA)	End Theory Assessment	Internal	External	Progressive Lab Assessment	End Laboratory Assessment (ELA)	
2426301	ASC	Office Organization	30	70	20	30	-	-	150
2426302	ASC	Management information system	30	70	20	30	-	-	150
2426303	BEC	Managerial Economics	30	70	20	30	-	-	150
2426304	BCC	E- TYPING (ENGLISH)	30	70	20	30	20	30	200
2418305	BEC	Python Programming	30	70	20	30	20	30	200
2426306	BCC	E- TYPING (HINDI)	-	-	10	15	10	15	50
2400208	NRC	Sports, Yoga and Meditation	-	-	25	-	10	15	50
2400110	NRC	Community/ Society Development	25	-	-	-	-	-	25
2400111	NRC	Principles of Management	25	-	-	-	-	-	25
Total			200	350	135	165	60	90	1000

Note: Prefix will be added to course code if applicable (T for Theory Paper, P for Practical Paper and S for Term Work)

Legend:

- PTA: Progressive Theory Assessment in class room (includes class test, mid-term test and quiz using online/offline modes)
 PLA: Progressive Laboratory Assessment (includes process and product assessment using rating Scales and rubrics)
 TWA: Term work & Self Learning Assessment (Includes assessment related to student performance in assignments, seminars, micro projects, industrial visits, self-learning, any other student activities etc.)

Note:

- ETA & ELA are to be carried out at the end of the term/ semester.
- Term Work is to be done by the students under the guidance of internal faculty but its assessment will be done **internally (40%)** as well as **externally (60%)**. Assessment related to planning and execution of Term Work activities like assignment, micro project, seminar and self-learning is to be done by internal faculty (Internal Assessment) whereas assessment of output/product/ presentation related to these activities will be carried out by external faculty/expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

- A) **Course Code** : 2426301(T2426301/S2426301)
 B) **Course Title** : Office organization
 C) **Rationale:**

This Chapter Provides an Overview of Office Organization and its concepts. Its provides definitions of Organization from Various Sources and Outlines the key steps and factors to consider in Planning an Effective Office Organization Structure.

The Documents Emphasizes that Organizing Individuals efforts and dividing Labor is Necessary to Efficiently achieve Common Goals. Office Organization helps Increase office efficiency, Streamline the work process, maintain public relations, minimize costs, manage change and accept new Challenges.

- D) **Course Outcome (COs):** After the Competition of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor & Affective) in classrooms/ laboratory/ workshop/ field/ industries.

After completion of the course, the students will able to –

1. I know The Meaning of Office Management.
2. Read the Organization Structure and Working Environment.
3. Discuss the topic Management of Office records.
4. Elaborate the Office Stationary and Forms.
5. Read the Supervision, Safety and Security Arrangement in an Office.

E) **Suggested course articulation matrix (CAM):**

Course Outcomes (Cos)	Program outcomes (POs)							Program specific outcomes (POs)	
	PO-1 Basic and Discipline specific knowledge	PO-2 Problem analysis	PO-3 Professionalism	PO-4 Problem solving	PO-5 Digital working skill	PO-6 Awareness about ethical practice	PO-7 Life long learning	PSO-1	PSO-2
CO-1	3	2	-	1	-	1	-		
CO-2	2	2	2	1	1	-	-		
CO-3	2	3	1	1	1	1	1		
CO-4	2	2	1	1	-	-	-		
CO-5	3	3	2	-	1	-	1		
CO-6	-	-	-	-	-	-	-		

Legend: High (3), medium (2), Low (1) and mapping (-)

. PSOs will be developed by respective program coordinate at institute level. As per NBA guidelines.

Formulating PSOs is optional

F) **Teaching and Learning Scheme:**

Course code	Course Title	Scheme of study (hours/week)					
		Classroom instruction (CI)		Lab Instruction (LI)	National Hours (TW+SL)	Total hours (CI+LI+TW+SL)	Total credits (c)
		L	T				
2026301	Office Organization	03	-	-	02	05	04

Note: prefix will be added to course code if applicable (T for theory paper, p for practical paper and S for term work)

Legend:

CI: Classroom instruction (includes different instructional/ implementation strategies lecture (L), Tutorial (T), case method, Demonstrations, video demonstration, problem based learning etc. to deliver theoretical concepts)

LI: Laboratory instruction (includes experiments / practical performances / problem based experiences in laboratory. Workshop, field or other locations using different instructional \implementation strategies. National hours: Hours of engagement by learns, other than the contact hours for ensuring learning.

TW: Term Work (Include assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: self-learning MOOCs, spoken tutorials, online educational resources etc.)

C: Credits = (1x CI hours) + (0.5 x Li hours) + (0.5 x notional hours)

NOTE: be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome off learning.

H) Assessment scheme:

Course code	Course Title	Assessment Scheme (Marks)						Total marks (TA+ TWA+ LA)
		Theory Assessment(TA)		Term Work & Self-Learning Assessment (TWA)		Lab Assessment (LA)		
		Progressive theory Assessment (PTA)	End theory Assessment (ETA)	Internal	External	Progressive lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2426301	Office Organization	30	70	20	30	-	-	150

Note: prefix will be added to course code if applicable (T for theory paper , P for practical paper and S for Term Work)

Legend:

PTA: Progressive theory assessment in class room (includes class test, mid-term test and quiz using online \offline modes)

PLA: progressive laboratory assessment (includes process and product assessment using rating scales and rubrics)

TWA: Term work &self-learning assessment (includes assessment related to student performance in assessments seminars micro projects, industrial visits, self – learning, any other student activities etc.)

Note: Separate passing is must for progressive and end semester assessment for both theory and practical.

. ETA & ELA are to be carried out at the end of the term / semester.

. Term work is to be done by the students under the guidance of internal faculty but its assessment will be done internally (40%) as well as externally (60%). assessment related to planning and execution of Term Work activities like assessment, micro project, and seminar and self – learning is to be done by internal faculty (internal assessment) Whereas assessment of output / product / presentation related to these activities will be carries out by external faculty /expert (External Assessment). However, criteria of internal as well as external assessment may very as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

- 1) Course Curriculum Detailing: This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Class room instruction (CI, laboratory instruction (LI), Term Work (TW) And self-Learning (SL). Students are expected to demonstrate the attainment off Theory Session Outcome (TSOs) and Lab Session Outcome (LSOs) Leading to attainment of cost outcomes (COs) upon the completion of the course. While Curriculum detailing NEP 2020 related reforms like green skills, Sustainability, multidisciplinary aspects, society connect Indian Knowledge system (IKS) and others must be integrated appropriately.
- 2) **Theory Session outcomes (TSOS) and Units: T 2426301**

<ol style="list-style-type: none"> 1) Office management? and its Importance? 2) Writes the function of office. 3) What are the qualities an responsibilities of a managers? 4) What is the duty of an office manager 	<p style="text-align: center;">Unit-1 Office Management</p> <ol style="list-style-type: none"> 1.1 What is office management 1.2 Meaning and system and functions 1.3 Duties responsibilities and qualities of an office manager. 	<p style="text-align: center;">Relevant COS number CO1</p>
<ol style="list-style-type: none"> 1) What is the features of office? 2) What is Specialization and Division of work? 3) What are Organization Charts and Manuals? 4) What is Office lighting and Ventilation? 5) How should you Decorate your work Office? 	<p style="text-align: center;">Unit – 2 Organisation structure and Working Environment</p> <ol style="list-style-type: none"> <u>2.1</u> Special Features of Office work. <u>2.2 Job</u> Sub Division and Specialization. <u>2.3 Organization</u> Charts and Manuals. <u>2.4 Office</u> lay, Out lighting Ventilation, Interior. <u>2.5</u> Decoration, Maintaining a Proper Working Environment. 	<p style="text-align: center;">CO2</p>
<ol style="list-style-type: none"> 1) What is the filing and indexing system? 2) How does a model office work? 3) What is meant by data processing? 4) What is meant by records management? 5) What are the essential of a good filling system? 6) What is a classification of filling system? 7) What is centralization and decentralization? 8) What are the types of index and Binders? 	<p style="text-align: center;">Unit-3 Management of Office Records</p> <ol style="list-style-type: none"> 3.1 Filling and Indexing. 3.2 Proper work in a modern office. 3.3 Data processing. 3.4 Record management. 3.5 Essential of a good filling system. 3.6 Classification and arrangement. 3.7 Centralized and Decentralized filling. 3.8 Types of Index and Loose Leaf Binders. 	<p style="text-align: center;">CO3</p>
<ol style="list-style-type: none"> 1) How many types of stationery are there? 2) Why is standardization of stationary important? 3) What are the methods of purchasing stationery? 4) What are the uses of office form? 5) What is the best way to store stationery 	<p style="text-align: center;">UNIT: - 04 Office stationery and forms</p> <ol style="list-style-type: none"> 4.1 Types of stationery 4.2 Good system of Regulating Stationery. 4.3 Selection, purchase, storage and controlling of stationery. 4.4 Various type of office form and their rational use 	<p style="text-align: center;">CO4</p>

<ol style="list-style-type: none"> 1) What is supervision and its principles? 2) What are supervisor duties and responsibilities of measurements? 3) What are the units and standards of measurements? 4) What is the importance of a office and also safety and security 	<p>Unit-5 Supervision safety and security arrangement in an office.</p> <p>5.1 meaning and principles of supervision</p> <p>5.2 The duties and responsibilities of office supervisor</p> <p>5.3 units of measurement & setting Standards</p> <p>5.4 the importance and safety, security in an office</p>	CO 5
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Suggested Term Work and Self learning: S2426301 some sample suggested assignments, micro project and other activities are mentioned here for reference.

Assignment

1. Write the Meaning Importance and Functions of Modern office.
2. Read the duties Responsibilities and Qualities of Office Manager.
3. Write the Organization Structure Charts and Manuals.
4. Know the Office Accommodation and Working Environment.
5. Prepared a Management of Office Records.
6. Read the Office Stationery and Forms.
7. Know the Supervision and Work Management.
8. Writes the Safety and Security Arrangement in an Office.

Other Activities

Seminar

1. Application of modern office
2. Application of office management
3. Application of centralization of office services
4. Application of office decoration layout and maintaining a proper working environment.
5. Application of filing indexing and data processing.
6. Application of stationery and office forms.
7. Application of office supervision and measurement.
8. Application of duties responsibilities of office supervisor.
9. Application of importance of maintaining safety in a maintaining safety in an office.

2. Visit

- Visits to an Office.
- Visits to a Market.
- Visits to a Factories.
- Visits to a Laboratories.
- Visits to a Stores.
- Visits to a Company.
- Visits to an Enterprises.
- Visits to a Stationery.
- Visits to a Department of Office Organization Management.
- Visits to a Clinic/ Hospital.

➤ Suggested Course Evaluation Matrix:

The course teacher has to decide and use appropriate assessment strategy and its weightage in theory, laboratory and Term Work for ensuring CO attainment. The response/performance of each student in each of these designed activities is to be used to calculate **CO attainment**.

COs	Course Evaluation Matrix						
	Theory Assessment(TA)**		Term Work Assessment(TWA)			Lab Assessment(LA)#	
	Progressive Theory Assessment(PTA) Class/Mid Sem Test	End Theory Assessment(ETA)	Term Work & Self Learning Assessment			Progressive Lab Assessment(PLA)	End Laboratory Assessment(ELA)
			Assignments	Micro Projects	Other Activities		
CO-1	20%	20%	15%	20%	10%		
CO-2	15%	20%	20%	20%	15%		
CO-3	15%	15%	15%	15%	25%		
CO-4	20%	15%	20%	15%	20%		
CO-5	20%	20%	20%	20%	20%		
CO-6	10%	10%	10%	10%	10%		
Total Marks	30	70	20	20	10		
			50				

Legend:

*: Other Activities includes self-learning, seminar, visits, surveys, product development, software development etc.

*: Mentioned under point-(N)

#: Mentioned under point-(O)

Note:

- The percentage given are approximate.
- In case of Micro Projects and End Laboratory Assessment(ELA), The achieved marks will be equally divided in all those Cos mapped with total experiments.
- For CO attainment calculation indirect assessment tools like course exits survey need to be used which comprises of question related to achievements of each Cos.

➤ **Suggested Specification table for End Semester Theory Assessment:** Specification Table represents the reflection of sample representation of assessment of cognitive domain of full course.

LEARNING RESOURCES

Titles	Author [s]	Publisher
1.Office organisation of management	S.P Arora	Vikash publishing house
2.Office organisation of management	T.B Susar / G.N Sancho	Himalaya publishing
3.Fundamental of office management	Manesh	
4.office Org. management	P.k Ghosh	Sultan chand / sons
5.office management	P.k Mitra	<u>Sultan chand</u>
6. Office org. management	M.E Thukaram rao	Altantic publishing

Online Educational Resources

- <https://accountlearning.com>
- <https://www.govtwomencollege.com>
- <https://pdf.usaid.gov>
- <https://books.google.com>
- <https://commercestudyguide.com>
- <https://egyankosh.ac.in>
- <https://www.littleableco.com>
- <https://hostelstudies.in>
- <https://www.slideshare.net>
- <https://blog.gebesa.com>

- A) **Course code** : 2426302(T2426302/S2426302)
 B) **Course Title** : Management information system
 C) **Rationale**

The aim of this course is:

1. To describe the role of information technology and decision support systems in business and record the current issues with those of the firm to solve business problems.
2. To introduce the fundamental principles of computer based information systems analysis and design and develop an understanding of the principles and techniques used.
3. To enable students, understand the various knowledge representation methods and different expert system structures as strategic weapons to counter the threats to business and make business more competitive.
4. To enable the students to use information to assess the impact of the internet and internet technology on electronic commerce and electronic business and understand the specific threats and vulnerabilities of computer systems.
5. To provide the theoretical models used in database management systems to answer business questions.

D) Course outcomes (COs):

After the completion of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor and Affective) in classroom /laboratory/ workshop/field/industry.

Upon completion of this course, student will be able to :

1. Relate the basic concepts and technology used in the field of management information systems .
2. Compare the processes of developing and implementing information system .
3. Outline the role of the ethical social and security issues of information systems.
4. Translate the role of information systems in organizations the strategic management processes , with the application for the management.
5. Apply the understanding of how various information systems like DBMS work together to accomplish the information objectives of an organization.

E) Suggested course articulation matrix (CAM):

Course Outcomes (Cos)	Program outcomes (POs)							Program specific outcomes (POs)	
	PO-1 Basic and Discipline specific knowledge	PO-2 Problem analysis	PO-3 Professionalism	PO-4 Problem solving	PO-5 Digital working skill	PO-6 Awareness about ethical practice	PO-7 Life long learning	PSO-1	PSO-2
CO-1	3	2	-	1	-	1	-		
CO-2	2	2	2	1	1	-	-		
CO-3	2	3	1	1	1	1	1		
CO-4	2	2	1	1	-	-	-		
CO-5	3	3	2	-	1	-	1		
CO-6									

Legend: High (3), medium (2) ,Low (1) and mapping (-)

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F) Teaching and Learning Scheme :

Course code	Course Title	Scheme of study (hours/week)					
		Classroom instruction (CI)		Lab Instruction (LI)	National Hours (TW+SL)	Total hours (CI+LI+TW+SL)	Total credits (c)
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Legend:

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LI: Laboratory instruction (includes experiments / practical performances / problem based experiences in laboratory.

Workshop, field or other locations using different instructional \implementation strategies.

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be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome off learning.

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2426302	Management Information System	30	70	20	30	-	-	150

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Whereas assessment of output / product / presentation related to these activities will be carried out by external faculty /expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

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H) Theory Session Outcomes (TSOs) and Units: T2426302

Major theory session outcomes (TSOS)	UNITS	Relevant Cos Numbers
a. What is the meaning and introduction of management? b. What are the different types of MIS? c. What is the role of MIS? d. What is the impact of MIS? e. What is the role impact and importance of MIS? f. What are the management function of MIS? g. What of type computer is used in organization?	<u>UNIT-1</u> 1.1 Introduction to management information system. 1.2 Impact of MIS. 1.3 Role and importance. 1.4 Managers function. 1.5 Type of computers used by organization.	CO1
a. What is a conceptual foundation in MIS b. What is the mean concept of MIS? c. What is the process of decision making? d. What structure of management information? e. What is the role and structure of mis?	<u>Unit-2</u> conceptual foundation of mis 2.1 Introduction 2.2 The decision making process 2.3 Type of management system 2.4 Concept of management organization	CO2
a. What are the type of management? b. What is the introduction of information system? c. what is the function of management? d. What is the concept of management organization system?	<u>Unit-3</u> Kinds of information system 3.1 Introduction 3.2 Type of system 3.3 concept of management organization	CO3
a. What is Planning and control? b. What is role of Planning? c. What is Planning method? d. What is difference between Planning and control information? e. Why is information important in Planning?	<u>Unit-4</u> Planning and Control 4.1 Introduction 4.2 Difference between Planning and control information	CO4

Major theory session outcomes (TSOS)	UNITS	Relevant Cos Numbers
<p>Q. What is Planning?</p> <p>Q. What is System Planning and Development?</p> <p>Q. what is Information System Planning in MIS?</p> <p>Q. why is Information Important in Planning?</p> <p>Q. What is Planning Process?</p> <p>Q. What are the different types of Planning?</p> <p>Q. What is Planning Standards?</p> <p>Q. What is MIS Planning?</p> <p>Q. What is the meaning of MIS Development?</p> <p>Q. What is the Role of MIS Development?</p>	<p><u>UNIT – 05</u> MIS planning and Development</p> <p>5.1 – Introduction, Importance of Planning and development</p> <p>5.2 – Planning, Process, types of planning meaning & Role of MIS development</p>	CO5
<p>Q. What is the structure of MIS in Organisation?</p> <p>Q. What is the meaning and Introduction of MIS?</p> <p>Q. What is MIS in Management?</p> <p>Q. What are the levels of Management in MIS?</p> <p>Q. What are the levels of Strategy Planning?</p> <p>Q. What is Strategic level of Management?</p> <p>Q. What is operations Management Planning?</p> <p>Q. What is control concept?</p> <p>Q. What is controlling introduction?</p> <p>Q. What are the steps in control process?</p> <p>Q. What is the managerial control?</p> <p>Q. What is the nature of managerial control?</p> <p>Q. Why are management control system important</p> <p>Q. What is accounting and control?</p> <p>Q. What are the major function control system?</p> <p>Q. What is the basic purpose of responsibility accounting?</p> <p>Q. What are the types of responsibility accounting?</p>	<p><u>UNIT – 06</u> MIS Organisation Structure & Controlling</p> <p>6.1 – Introduction</p> <p>6.2 – MIS at Management levels</p> <p>6.3 – Strategic level Planning</p> <p>6.4 – Operational level Planning</p> <p>6.5 - Managerial Control</p> <p>6.6 - Accounting and Control</p> <p>6.9 - Major Control System (Traditional and Modern)</p> <p>7.0 – Responsibility Accounting</p>	CO6

- 1) **Suggested Term work and Learning:-** S2426302 some sample suggested assignments, micro project and other activities are mentioned here for reference.
- a. Assignments: Question /Problems/Numerical/Exercise to be provided by the course teacher in line with the targeted Cos.
1. Explain the basic concept of ERP.
 2. Explain the advantages of DSS and how does it benefits organization.
 3. Write the basics, benefits & challenge of ERD.
 4. Explain the application of AI and how is it being used in various industries.
 5. Prepare an assignment on (DSS) Decision support system and artificial intelligence
 6. Explain knowledge management (KM) and what is its main objectives.
 7. Explain the current trends in MIS.
 8. Prepare a project on basic of computers system and basic of network and terminology.
 9. Explain the benefits and challengers of enterprise system.
 10. Write the detailed essay on DBMS, Types of DBMS & designing of DBMS.

MICRO PROJECT:

1. The use of computer in management information system.
2. Write the impact of MIS on effective human resources management in an organize.
3. Write the impact of MIS in banking industry.
4. The relevance of MIS on the performance of office managers in business organization.
5. Impact of MIS on insurance industry.
6. Impact of MIS on administration effectiveness.

OTHER ACTIVITES

1. Seminar Topics
 - i. Using MIS to improves customer's services.
 - ii. Role of computer in MIS.
 - iii. Management information system and corporate organization.
 - iv. Supports models and knowledge management.
 - v. Enterprise resources planning.
 - vi. Concepts and process of control.
 - vii. MIS organization structure.
 - viii. MIS planning and development.

VISITS:

Visiting following places would provide student an opportunity to see the application of MIS. This will also help student to comprehend the career opportunities available in the field of management information system.

- a. Visit to a bank.
- b. Visit to a booking counter of railway station.
- c. Visit to a cash section of an organization.
- d. Visit to a computer section of an organization., visit to consultation services
- e.

➤ **Suggested Course Evaluation Matrix:**

The course teacher has to decide and use appropriate assessment strategy and its weightage in theory, laboratory and Term Work for ensuring CO attainment. The response/performance of each student in each of these designed activities is to be used to calculate **CO attainment**.

COs	Course Evaluation Matrix						
	Theory Assessment(TA)**		Term Work Assessment(TWA)			Lab Assessment(LA)#	
	Progressive Theory Assessment(PTA) Class/Mid Sem Test	End Theory Assessment(ETA)	Term Work & Self Learning Assessment			Progressive Lab Assessment(PLA)	End Laboratory Assessment(ELA)
			Assignments	Micro Projects	Other Activities		
CO-1	20%	20%	15%	20%	10%		
CO-2	15%	20%	20%	20%	15%		
CO-3	15%	15%	15%	15%	25%		
CO-4	20%	15%	20%	15%	20%		
CO-5	20%	20%	20%	20%	20%		
CO-6	10%	10%	10%	10%	10%		
Total Marks	30	70	20	20	10		
			50				

Legend:

*: Other Activities includes self-learning, seminar, visits, surveys, product development, software development etc.

*: Mentioned under point-(N)

#: Mentioned under point-(O)

Note:

- The percentage given are approximate.
 - In case of Micro Projects and End Laboratory Assessment (ELA), The achieved marks will be equally divided in all those Cos mapped with total experiments.
 - For CO attainment calculation indirect assessment tools like course exits survey need to be used which comprises of question related to achievements of each Cos.
- **Suggested Specification table for End Semester Theory Assessment:** Specification Table represents the reflection of sample representation of assessment of cognitive domain of full course.

Unit Title and Number	Total Classroom Instructions(CI) Hours	Relevant Cos Number(s)	Total Marks	ETA(Marks)		
				Remember(R)	Understanding(U)	Application and above(A)
Unit-1. Introduction to MIS	7	CO1	10	4	4	2
Unit-2 Conceptual Foundation of MIS	8	CO2	12	4	7	1
Unit-3. Types of Information System	7	CO3	10	4	4	2
Unit-4. Planning and Controlling	8	CO4	12	4	7	1
Unit-5. MIS Planning and Development	10	CO5	16	6	8	2
Unit-6. MIS Organization Structure	8	CO6	10	4	5	1
Total	48	-	70	26	35	9

Note: Similar table can also be used to designed class/mid-term/internal question paper for Progressive assessment.

Subject- MIS(Management Information System)

Sl. No.	Name of the books	Authors	Publisher
1	Management Information System	Gupta A.K.	S. Chand Publishing
2	Management Information System	Kenneth C. Laudon	Pearson Education
3	Management Information System	Guptnath Tridevi	Book Rivers
4	Management Information System	Oke, Jayant	Nirali Prakashan Pune
5	Management Information System	Jawadekar, W.S.	Tata Mc Graw Hill
6	Management Information System	S.A. Kelkar	PHI Learning Pvt.
7	Management Information System	RN Gupta	S. Chand Publishing

Online Link Of MIS :-

- a. <https://en.m.wikipedia.org>
- b. <https://www.coursera.org>
- c. <https://www.shiksha.com>
- d. <https://www.tutorialspoint.com>
- e. <https://www.techtarget.com>
- f. <https://byjus.com>
- g. <https://www.linkedin.com>

A) **Course Code** : 2426303(T2426303/S2426303)

B) **Course Title** : Managerial Economics

C) **Rationale**

- To provide knowledge in economics
- To explain various types of economics
- To provide inductor knowledge on classification of market
- To provide knowledge on functions of money
- Apply economic principles to management decisions
- Understand the role of Managerial Economics in decision making
- How to estimate demand and furcating of demand in the markets
- Understand the cardinal and ordinal approach of customer behavior
- Managerial uses of production function, short run and long run production analysis
- Able to analyze the concept of price and non-price competition used by the sellers.

D) **Course Outcome (COs)** : After the Competition of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor & Affective) in classrooms/ laboratory/ workshop/ field/ industries.

After completion of the course , the students will able to –

- Explain the various term of economics.
- Describe various types of Market.
- Identify various law of economics.
- Understand the various Macro-economic concepts of budgetary deficits , public debt, & balance of payment.
- Understand the role of International trade , International finance & exchange rates determination.
- Able to understand the concept of business cycles & its relevance to managerial economists.

E) **Suggested course articulation matrix (CAM):**

Course Outcomes (Cos)	Program outcomes (POs)							Program specific outcomes (POs)	
	PO-1 Basic and Discipline specific knowledge	PO-2 Problem analysis	PO-3 Professionalism	PO-4 Problem solving	PO-5 Digital working skill	PO-6 Awareness about ethical practice	PO-7 Life long learning	PSO-1	PSO-2
CO-1	3	2	-	1	-	1	-		
CO-2	2	2	2	1	1	-	-		
CO-3	2	3	1	1	1	1	1		
CO-4	2	2	1	1	-	-	-		
CO-5	3	3	2	-	1	-	1		
CO-6									

Legend: High (3), medium (2) ,Low (1) and mapping (-)

. PSOs will be developed by respective program coordinate at institute level. As per NBA guidelines.

Formulating PSOs is optional

F) **Teaching and Learning Scheme :**

Course code	Course Title	Scheme of study (hours/week)					
		Classroom instruction (CI)		Lab Instruction (LI)	National Hours (TW+SL)	Total hours (CI+LI+TW+SL)	Total Credits (c)
		L	T				
2426303	Managerial Economics	03	-	-	02	05	04

Note: prefix will be added to course code if applicable (T for theory paper, p for practical paper and S for term work)

Legend:

CI: Classroom instruction (includes different instructional/ implementation strategies lecture (L), Tutorial (T), case method, Demonstrations, video demonstration, problem based learning etc. to deliver theoretical concepts)

LI: Laboratory instruction (includes experiments / practical performances / problem based experiences in laboratory.

Workshop, field or other locations using different instructional \implementation strategies.

National hours: Hours of engagement by learns, other than the contact hours for ensuring learning.

TW: Term Work (Include assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: self-learning MOOCs, spoken tutorials, online educational resources etc.)

C: Credits = (1x CI hours) + 0.5 x Li hours) + (0.5 x notional hours)

NOTE:

be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome off learning.

G) Assessment scheme:

Course code	Course Title	Assessment Scheme (Marks)						Total marks (TA+TWA+LA)
		Theory Assessment(TA)		Term Work & Self Learning Assessment (TWA)		Lab Assessment (LA)		
		Progressive Theory Assessment (PTA)	End theory Assessment (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2426303	Managerial economics	30	70	20	30	-	-	150

Note : prefix will be added to course code if applicable (T for theory paper , P for practical paper and S for Term Work)

Legend:

PTA: Progressive theory assessment in class room (includes class test, mid-term test and quiz using online \offline modes)

PLA: progressive laboratory assessment (includes process and product assessment using rating scales and rubrics)

TWA: Term work &self-learning assessment (includes assessment related to student performance in assessments seminars micro projects, industrial visits, self – learning, any other student activities etc.)

Note:

- . Separate passing is must for progressive and end semester assessment for both theory and practical.
- . ETA & ELA are to be carried out at the end of the term / semester.
- . Term work is to be done by the students under the guidance of internal faculty but its assessment will be done internally (40%) as well as externally (60%) . assessment related to planning and execution of Term Work activities like assessment, micro project, and seminar and self – learning is to be done by internal faculty

(internal assessment) Whereas assessment of output / product / presentation related to these activities will be carried out by external faculty /expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

- 3) Course Curriculum Detailing: This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Class room instruction (CI), laboratory instruction (LI), Term Work (TW) And self-Learning (SL). Students are expected to demonstrate the attainment of Theory Session Outcome (TSOs) and Lab Session Outcome (LSOs) Leading to attainment of cost outcomes (COs) upon the completion of the course. While Curriculum detailing NEP 2020 related reforms like green skills, Sustainability, multidisciplinary aspects, society connect Indian Knowledge system (IKS) and others must be integrated appropriately.

Theory Session outcomes (TSOS) and Units

Sub code T2426303

<p>Theory Session outcomes (TSOS) and Units Q. Who is the father of Economics? Q. Define economics and also write the role of Economics? Q. Define Nature and scope of Economics? Q. List the two branches of economics? Q. In the context of economics define the terms consumption? Q. Which theory is generally included under microeconomics?</p>	<p>Unit-1 1.1 Definition of Economics, role, nature and scope of Economics. 1.2 Micro & Macro Economics 1.3 Theory of Consumption & Consumer Behavior (Marginal) Utility</p>	<p>Relevant COS number CO1</p>
<p>Q. What is the law of diminishing marginal utility? Q. What are the three stages of the law of diminishing managerial stages? Q. What is the law of marginal utility? Q. What is producer surplus and consumer surplus? Q. What is consumer surplus and example of surplus?</p>	<p>Unit-2 2.1 The law of Diminishing marginal utility 2.2 The law of equimarginal utility 2.3 Consumer's Surplus</p>	<p>CO2</p>
<p>Q. What is law of demand Q. What is second law of demand? Q. what is the income effect and price effect? Q. What is income and price level effect? Q. What is the substitution effect in terms of income and price effect? Q. What are the examples of the substitution effect and our real income effect?</p>	<p>Unit-3 3.1 Law of Demand 3.2 The price line & Equilibrium of consumer 3.3 The Substitution effect & income effect</p>	<p>CO3</p>

<p>Q. What is the elasticity of demand for inferior goods? Q. What Is the elasticity of demand for necessity? Q. What are the theories of production? Q. What is the theory of productivity in economics? Q. What are the formula of law of production function? Q. What is the slope of product curve?</p>	<p>Unit-4 4.1 Elasticity of Demand Griffon goods 4.2 Theory of Production & Functions 4.3 Law of Production & ISO Product curve</p>	CO4
<p>Q. What is meant by linear programming? Q. What is linear programming example for? Q. What is the theory production pricing? Q. What is the theory of production cost pricing?</p>	<p>Unit-5 5.1 linear programming (i) Graphical method (ii) Simpler method 5.2 Theory of exchange production pricing</p>	CO5
<p>Q. What are the concepts of cost curves? Q. What are the seven cost curves? Q. What is the market structure? Q. How many types of markets are there? Q. What are the revenue curves? Q. Why is total revenue curve downward sloping? Q. Who are the price under perfect competition</p>	<p>Unit-6 6.1 The concept of Cost and Curve 6.2 Market & Market Structures 6.3 Revenue and Revenue Curve 6.4 Price under perfect Competition, Price under monopoly, Monopolistic Competition & Oligopoly</p>	CO6

Suggested Term Work and Self learning: S2426303 some sample suggested assignments, micro project and other activities are mentioned here for reference.

- a. Assignments: Questions/ Problems/Numerical/Exercise to be provided by the course teacher in line with targeted COs .
1. Prepare an assignment on public finance and its importance.
2. Explain tax and type of tax.
3. Explain public debt and sources of Public debt.
4. Write the types of Budget.
5. Prepare an assignment on budgets and importance of budgets.
6. Write an project work on features of capitalist economy, socialist economy, mixed economy.
7. Explain comparative study of economic system.
8. Explain economic planning.
9. Write an assignment on nature of economic planning and of economic planning process.
10. Write an assignment of Budget and Unbalanced Budget.

Micro Project

1. Prepare a chart for different types of taxes.
2. Prepare a project on Micro and Macro Economics.
3. Prepare a comparative study on Diminishing Marginal Utility and Utility Marginal utility.
4. Prepare a list on Demand Griffon Goods.
5. Prepare a chart on ISO curve.
6. Analysis of Linear Programming Graph related to (Graphical method) and (simpler method).

Other Activities

1. Seminar Activities

- Seminar on the Global Economy.
- The study of how people use resources.
- Study of theory of consumption and consumer behavior (Marginal Utility).
- Study about consumer surplus and example of surplus.
- Study the slope of project curve.
- Study about the elasticity of demand and why it is necessary.
- Explain market structure and type of market.
- Study of revenue curve and why revenue curve downward sloping.

2. Visit

- Visit to cash section of the organization.
- Visit to Local Markets.
- Visit to Nearby retailers market.
- Visit to Perishable goods/vegetables market.
- Visit to mall, Big Bazar etc...
- Visit to different Bank and Financial institution.

➤ Suggested Course Evaluation Matrix:

The course teacher has to decide and use appropriate assessment strategy and its weightage in theory, laboratory and Term Work for ensuring CO attainment. The response/performance of each student in each of these designed activities is to be used to calculate **CO attainment**.

COs	Course Evaluation Matrix						
	Theory Assessment(TA)**		Term Work Assessment(TWA)			Lab Assessment(LA)#	
	Progressive Theory Assessment(PTA) Class/Mid Sem Test	End Theory Assessment(ETA)	Term Work & Self Learning Assessment			Progressive Lab Assessment(PLA)	End Laboratory Assessment(ELA)
Assignments			Micro Projects	Other Activities			
CO-1	20%	20%	15%	20%	10%		
CO-2	15%	20%	20%	20%	15%		
CO-3	15%	15%	15%	15%	25%		
CO-4	20%	15%	20%	15%	20%		
CO-5	20%	20%	20%	20%	20%		
CO-6	10%	10%	10%	10%	10%		
Total Marks	30	70	20	20	10		
			50				

Legend:

*: Other Activities includes self-learning, seminar, visits, surveys, product development, software development etc.

*: Mentioned under point-(N)

#: Mentioned under point-(O)

Note:

- The percentage given are approximate.
- In case of Micro Projects and End Laboratory Assessment(ELA), The achieved marks will be equally divided in all those Cos mapped with total experiments.
- For CO attainment calculation indirect assessment tools like course exits survey need to be used which comprises of question related to achievements of each Cos.

- **Suggested Specification table for End Semester Theory Assessment:** Specification Table represents the reflection of sample representation of assessment of cognitive domain of full course.

Name of the book	Authors	Publisher
Managerial Economics	D.N Dwivedi	Vikash Publishing
Managerial Economics	D.N Dwivedi	Vikash Publishing
Managerial Economics	Ahuja H.L	S.Chand Publishing
Managerial Economics	Philip K.Y Young	Paul G. Keat
Managerial Economics	R. Mittal, N. Kumar	Anmol Publisher
Managerial Economics	Mark Hirschey	Thomson/South western
Managerial Econom	Suma Damodaran	Oxford University Press

Online link of Managerial Economics

- i. <https://www.linkedin.com>
- ii. <https://web.uvic.ca>
- iii. <https://elearning.uou.a.c.in>
- iv. <https://originindia.oup.com>
- v. <https://en.m.wikipedia.org>
- vi. <https://www.cheggindia.com>
- vii. <https://www.jaroeeducation.com>

A) Course Code : 2426304 (T2426304/P2426304/S2426304)

B) Course Title : E- TYPING (ENGLISH)

C) Rationale

- To provide knowledge in typing
- To explain various types of typewriter
- To provide brief knowledge on classification of typewriter
- To provide knowledge on function of keyboard
- To improve your typing skills
- To provide instruction for good posture of sitting
- Discussion about the use of table and chair by Typist

D) **Course Outcome (COs):** After the Completion of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor & Affective) in classrooms/ laboratory/ workshop/ field/ industries.

After completion of the course, the students will able to –

- Explain the various row's of Keyboard.
- Describe the various form of Typewriter.
- Explain the history of Typewriter.
- Describe the role of Manual Typewriter in different offices and organizations.
- Describe the use of E-Typewriter in modern era.
- Describe the importance major parts of Typewriter.

E) **Suggested Course Articulation Matrix (CAM):**

Course Outcomes (Cos)	Program Outcomes (POs)							Program specific outcomes (POs)	
	PO-1 Basic and Discipline specific knowledge	PO-2 Problem analysis	PO-3 Professionalism	PO-4 Problem solving	PO-5 Digital working skill	PO-6 Awareness about ethical practice	PO-7 Life long learning	PSO-1	PSO-2
CO-1	3	2	-	1	-	1	-		
CO-2	2	2	2	1	1	-	-		
CO-3	2	3	1	1	1	1	1		
CO-4	2	2	1	1	-	-	-		
CO-5	3	3	2	-	1	-	1		

Legend: High (3), medium (2), Low (1) and mapping (-)

PSOs will be developed by respective program coordinate at institute level. As per NBA guidelines.

Formulating PSOs is optional

F) Teaching and Learning Scheme :

Course code	Course Title	Scheme of study (hours/week)					
		Classroom instruction (CI)		Lab Instruction (LI)	National Hours (TW+SL)	Total hours (CI+LI+TW+SL)	Total credits (c)
		L	T				
2426304	E-TYPING (English)	03	-	04	02	09	06

Note: Prefix will be added to course code if applicable (T for theory paper, p for practical paper and S for term work)

Legend:

CI: Classroom instruction (includes different instructional/ implementation strategies lecture (L), Tutorial (T), case method, Demonstrations, video demonstration, problem based learning etc. to deliver theoretical concepts)

LI: Laboratory instruction (includes experiments/ practical performances / problem based experiences in laboratory.

Workshop, field or other locations using different instructional \implementation strategies.

National hours: Hours of engagement by learns, other than the contact hours for ensuring learning.

TW: Term Work (Include assignments , seminars, micro projects , industrial visits , any other student activities etc.)

SL:Self learning MOOCs, spoken tutorials , online educational resources etc.)

C : Credits = (1x CI hours) + (0.5 x Li hours) + (0.5 x notional hours)

NOTE :

Be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome off learning.

G) Assessment scheme:

Course code	Course Title	Assessment Scheme (Marks)						Total marks (TA+TWA+LA)
		Theory Assessment(TA)		Term Work & Self-Learning Assessment (TWA)		Lab Assessment (LA)		
		Progressive theory Assessment (PTA)	End theory Assessment (ETA)	Internal	External	Progressive lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2426304	E-TYPING (English)	30	70	20	30	20	30	200

Note : Prefix will be added to course code if applicable (T for theory paper , P for practical paper and S for Term Work)

Legend:

PTA: Progressive theory assessment in class room (includes class test, mid-term test and quiz using online \offline modes)

PLA: Progressive laboratory assessment (includes process and product assessment using rating scales and rubrics)

TWA: Term work & self-learning assessment (includes assessment related to student performance in assessments seminars micro projects, industrial visits, self – learning, any other student activities etc.)

Note:

- Separate passing is must for progressive and end semester assessment for both theory and practical.
- ETA & ELA are to be carried out at the end of the term / semester.
- Term work is to be done by the students under the guidance of internal faculty but its assessment will be done internally (40%) as well as externally (60%). assessment related to planning and execution of Term Work activities like assessment, micro project, and seminar and self – learning is to be done by internal faculty (internal assessment) Whereas assessment of output / product / presentation related to these activities will be carries out by external faculty /expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

Course Curriculum Detailing: This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Class room instruction (CI, laboratory instruction (LI), Term Work (TW) And self-Learning (SL). Students are expected to demonstrate the attainment off Theory Session Outcome (TSOs) and Lab Session Outcome (LSOs) Leading to attainment of cost outcomes (COs) upon the completion of the course. While Curriculum detailing NEP 2020 related reforms like green skills, Sustainability, multidisciplinary aspects, society connect Indian Knowledge system (IKS) and others must be integrated appropriately.

Theory Session outcomes (TSOS) and Units T2426304

Theory Session Outcomes(TSOS)	UNITS	Relevant COS number
1. Write the history of E- Typewriting. 2. What is the most important thing about typing? 3.What are the benefits of a manual versus an electric typewriter? 4.Differentiate the features of manual and E–Typewriting.	Unit-1 1.1. E–Typewriting:- a. Introduction and Importance of E–Typewriting. b. Difference between manual typewriting and E–Typewriting.	CO1
1. How to improve your typing skill?	Unit-2	

2. What are the essential skills of a typist?	2.1. Qualities required to become an efficient and effective typist.	CO2
1. What type of chair and table are used during typing? 2. What is correct way of posture during typing?	UNIT – 3 3.1.Importance of proper physical environment for typing work, proper lighting, proper furniture.	CO3
1. What are four ergonomic rules for typing effective? 2. What is the ergonomic of typing desk?	UNIT – 4 4.1 Typing Ergonomics and positioning. Position of Monitor, Keyboard, Mouse etc. Body positioning .	CO4
1. What are the important points of keyboard? 2. Write the large row.	UNIT – 5 5.1 Introduction to keyboard in script, QWERTY etc. Types of key: Alpha numeric keys, Punctuation keys and Special keys. Ergonomic keyboard	CO5

Suggested Laboratory (Practical) Session Outcomes (LSOs) and List of Practical: P2426304

Practical/Lab Session Outcomes (LSOs)	Laboratory Experiment/Practical Titles	Relevant COs Number(s)
1.What do you mean by typewriter? 2. Write the difference between typewriting & manual typewriter.	1.1.E-Typewriting: - Introduction and importance of E-typing. Difference between manual typewriting and e-typewriting.	PO1
1.what is qualities require in good typist. 2.What is use of function key.	2.1 Qualities required to become an efficient and effective typist.	PO2
1.How many keys in E-typing. 2.What do you mean by touch typewriter?	3.1 Introduction to keyboard In script, qwerty etc. Alphanumeric key, function key, special keys.	PO3
1. What is sight typewriting? 2.How many row in typewriter.	4.1Methods of typewriting Touch typewriting, sight typewriting.	PO4
1.What is use of shift key? 2. What is use of space bar?	5.1 Finger placement according touch typewriting ,home row ,numerical row, upper row bottom row	PO5
1.What is paragraph? 2.What do you mean by fixing?	6.1 Margin fixing , Paragraphing.	PO6

Suggested Term Work and Self learning: S2426304 Some sample suggested assignments, micro project and other activities are mentioned here for reference.

b. Assignments: Questions/ Problems/Numerical/Exercise to be provided by the course teacher in line with targeted Cos.

11. Prepare an assignment on Importance of Typewriter.
12. Explain about proper fingering.
13. Explain how to achieve keyboard Mastery.
14. Write the uses of different keys.
15. Prepare an assignment on different Parts of Typewriter.
16. Write a project work on qualities of a good Typist.
17. Explain the use of Punctuation of marks.

18. Write an assignment on Maintenance of a typewriters including Simple Mechanism.

Micro Project

7. Prepare a chart for different types of Typewriter.
8. Prepare a project for how to be a good typewriter.
9. Prepare a comparative study on Manual Typewriting and E- Typewriting.
10. Prepare a list of different parts of Typewriter.
11. Prepare an assignment on good and bad posture during Typing.
12. Prepare an assignment on the History of the Typewriter.

Other Activities

2. Seminar Activities

- i. Seminar on Accuracy and Speed.
- j. The study on how to make typing more effective.
- k. Study about Importance of Typing.
- l. Study about the Manual and E- Typewriter.
- m. Study on the structure of Typewriter.

2. Visit

- g. Visit to a Professional writer.
- h. Visit to Federal Government.
- i. Visit to Banks.
- j. Visit to Attorneys.
- k. Visit to Federal Prisons.

Suggested Course Evaluation Matrix: The course teacher has to decide and use appropriate assessment strategy and its weightage in theory, laboratory and Term Work for ensuring CO attainment. The response/performance of each student in each of these designed activities is to be used to calculate **CO attainment**

COs	Course Evaluation Matrix						
	Theory Assessment(TA)		Term Work Assessment (TWA)			Lab Assessment(LA)	
	Progressive theory Assessment (PTA) Class/Mid Sem Test	End Theory Assessment (ETA)	Term Work & Self Learning Assessment			Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)
			Assignments	Micro Projects	Other Activities		
CO-1	20%	20%	15%	20%	10%	20%	15%
CO-2	15%	20%	20%	20%	15%	15%	20%
CO-3	20%	15%	15%	20%	25%	20%	15%
CO-4	20%	20%	25%	20%	25%	20%	25%
CO-5	25%	25%	25%	20%	25%	25%	25%
Total Marks	30	70	20	20	10	30	20
			50				

Legend:

- : Other Activities include Self-Learning, Seminar, Visits, Surveys, Product development, Software development etc.
- : Mentioned under Point - (N)
- : Mentioned Under Point- (O)

Note:

- The percentage given are approximate
- In case of Micro Projects and End Laboratory Assessment (ELA), the achieved marks will be equally divided in all those Cos mapped total experiments.
- For CO attainment calculation indirect assessment tools like course exit survey need to be used which comprises of questions related to achievement of each Cos.

Suggested specification Table for End Semester Theory Assessment: Specification Table represents the reflection of sample representation of assessment of cognitive domain of full course.

Unit Title and Number	Total Classroom Instruction (CI) Hours	Relevant Cos Number(s)	Total Marks	ETA (Marks)		
				Remember (R)	Understanding (U)	Application & above (A)
Unit-1.0 History	8	CO-1	12	4	4	4
Unit-2.0 Differentiate between Manual and E-Typewriter	10	CO-2	14	4	8	2
Unit-3.0 Essential Skill and Qualities of Typist	8	CO-3	12	4	4	4
Unit-4.0 Home Rows Key and Keyboard Introduction	10	CO-4	14	4	6	4
Unit-5.0 Use of Spacing in Punctuation Signs and Spacing Rule	12	CO-5	18	4	6	8
Total	48	.	70	20	28	22

Recommended Books: -

S.NO	NAME	WRITER
01	UPKAR HIGH SPEED(ENG,HINDI) TYPEWRITER	OMKAR NATH VERMA
02	PROFICIENCY IN ENGLISH TYPEWRITING	R.GUPTA'S
03	ANUPAM TYPING MASTER	Smt. Usha Gupta

On Line Educational Resources:-

<https://www.typing.com>

<https://www.typingbaba.com>

- A) **Course Code** : 2418305(T2418305/P2418305/S2418305)
 B) **Course Title** : Python Programming
 (CE, CSE, AIML, ME, ME (Auto), ELX, ELX (R), MIE, FTS, CRE, CHE, TE, CACDDM, GT, RE)
 C) **Pre- requisite Course(s)** :
 D) **Rationale** :

Python programming has emerged as a popular programming language across wide range of application segments from Scientific to Machine Learning to mobile app development, and so on. Python is a high-level general-purpose programming language.

Because code is automatically compiled to byte code and executed, Python is suitable as a scripting language, Web application implementation language, etc.

In Python there are multiple levels of organizational structure: functions, classes, modules, and packages. These assist in organizing code. An excellent and large example is the Python standard library.

The Object-oriented Python provides a consistent way to use objects: in Python it is easy to implement new object types (called classes in object-oriented programming).

This introductory course to learn basic Python programming features which can be used as building blocks to develop different kind of applications using Python 3.

- E) **Course Outcomes (COs):** After the completion of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor and Affective) in classroom/ laboratory/ workshop/ field/ industry.

After completion of the course, the students will be able to-

- CO-1** Use various data types and operators in formation of expressions.
CO-2 Write and execute programs using control statements.
CO-3 Perform relevant operations on Sequence data types
CO-4 Create functions in modules
CO-5 Use numpy in writing python programs
CO-6 Handle data files and exceptions.

- F) **Suggested Course Articulation Matrix (CAM):**

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analyses	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	1	-	1	-	-	-	-		
CO-2	1	2	2	1	-	1	-		
CO-3	1	2	2	1	-	1	-		
CO-4	1	2	2	1	-	1	2		
CO-5	1	2	2	1	-	1	-		
CO-6	1	2	2	1	-	1	1		

Legend: High (3), Medium (2), Low (1) and No mapping (-)

* PSOs will be developed by respective programme coordinator at institute level. As per latest NBA guidelines, formulating PSOs is optional

- G) **Teaching & Learning Scheme:**

Course Code	Course Title	Scheme of Study (Hours/Week)					Total Credits (C)
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+SL)	Total Hours (CI+LI+TW+SL)	
		L	T				
2418305	Python programming	03	-	04	02	09	06

Note: Prefix will be added to Course Code if applicable (T for theory Paper, P for Practical Paper and S for Term work)

Legend:

CI: Classroom Instruction (Includes different instructional/implementation strategies i.e. Lecture (L), Tutorial (T), Case method, Demonstrations, Video demonstration, Problem based learning etc. to deliver theoretical concepts)

LI: Laboratory Instruction (Includes experiments/practical performances /problem-based experiences in laboratory, workshop, field or other locations using different instructional/Implementation strategies)

Notional Hours: Hours of engagement by learners, other than the contact hours for ensuring learning.

TW: Term Work (includes assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: Self Learning, MOOCs, spoken tutorials, online educational resources etc.

C: Credits = (1 x CI hours) + (0.5 x LI hours) + (0.5 x Notional hours)

Note: TW and SL have to be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome of learning.

H) Assessment Scheme:

Course Code	Course Title	Assessment Scheme (Marks)						Total Marks (TA+TWA+LA)
		Theory Assessment (TA)		Term Work & Self-Learning Assessment (TWA)		Lab Assessment (LA)		
		Progressive Theory Assessment	End Theory Assessment (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2418305	Python programming	30	70	20	30	20	30	200

Note: Prefix will be added to Course Code if applicable (T for theory Paper, P for Practical Paper and S for Term work)

Legend:

PTA: Progressive Theory Assessment in class room (includes class test, mid-term test and quiz using online/offline modes)

PLA: Progressive Laboratory Assessment (includes process and product assessment using rating Scales and rubrics)

TWA: Term work & Self Learning Assessment (Includes assessment related to student performance in assignments, seminars, micro projects, industrial visits, self-learning, any other student activities etc.)

Note:

- Separate passing is must for progressive and end semester assessment for both theory and practical.
- ETA & ELA are to be carried out at the end of the term/ semester.
- Term Work is to be done by the students under the guidance of internal faculty but its assessment will be done **internally (40%)** as well as **externally (60%)**. Assessment related to planning and execution of Term Work activities like assignment, micro project, seminar and self-learning is to be done by internal faculty (Internal Assessment) whereas assessment of output/product/ presentation related to these activities will be carried out by external faculty/expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

i) Course Curriculum Detailing: This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Classroom Instruction (CI), Laboratory Instruction (LI), Term Work (TW) and Self Learning (SL). Students are expected to demonstrate the attainment of Theory Session Outcomes (TSOs) and Lab Session Outcomes (LSOs) leading to attainment of Course Outcomes (COs) upon the completion of the course. While curriculum detailing, NEP 2020 related

reforms like green skills, Sustainability, Multidisciplinary aspects, Society connect, Indian Knowledge System (IKS) and others must be integrated appropriately.

J) Theory Session Outcomes (TSOs) and Units:

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<p><i>TSO 1a.</i> Differentiate between Procedure Oriented P and Object Oriented Programming approach with example.</p> <p><i>TSO 1b.</i> Use the concept of Value and R-value</p> <p><i>TSO 1c.</i> Write python program using various data types and operators</p>	<p>Unit 1: Fundamentals of Python Programming Syntax</p> <p>1.1 Introduction to Python Character Set, Python Tokens, Variables, Lvalue and Rvalue Concepts, and the Use of Comments.</p> <p>1.2 Overview of Data Types:</p> <ul style="list-style-type: none"> • Number Types: Integer, Floating Point, Complex • Boolean Type • Sequence Types: String, List, Tuple • None Type • Mapping Type: Dictionary • Distinction between Mutable and Immutable Data Types <p>1.3 Understanding Operators:</p> <ul style="list-style-type: none"> • Arithmetic Operators • Relational Operators • Logical Operators • Assignment Operator • Augmented Assignment Operators • Expressions and Statements • Type Conversion and Input/Output Mechanisms • Precedence of Operators • Expression Evaluation 	CO-1
<p><i>TSO 2a.</i> Write Python program using decision making statements</p> <p><i>TSO 2b.</i> Write Python program using loop structure to solve iterative problems</p>	<p>Unit-2.0 Conditional and Iterative statements</p> <p>2.1 Conditional statements:</p> <ul style="list-style-type: none"> • simple if statement • if- else statemen • if-elif-else statement <p>2.2 Iterative statements:</p> <ul style="list-style-type: none"> • while loop • for loop • range function • break and continue statements • nested loops 	CO-2
<p><i>TSO 3a.</i> Perform various operations on string using string operators and methods</p> <p><i>TSO 3b.</i> Perform various operations on List using list operators and methods</p> <p><i>TSO 3c.</i> Perform various operations on tuples using tuples operators and methods</p>	<p>Unit-3.0 String, List, Tuples, set and Dictionary</p> <p>3.1 String:</p> <ul style="list-style-type: none"> • Indexing • string operations (concatenation, repetition, membership & slicing) 	CO-3

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<p><i>TSO 3d.</i> Perform various operations on set using set methods</p> <p><i>TSO 3e.</i> Perform various operations on dictionary using dictionary methods</p>	<ul style="list-style-type: none"> • traversing a string using loops • built-in functions. <p>3.2 Lists:</p> <ul style="list-style-type: none"> • Introduction • Indexing in list • list operations: concatenation, repetition, membership & slicing, traversing a list, built- in list functions, linear search on list of numbers and counting the frequency of elements in a list <p>3.3 Tuples: Creating, initializing, accessing elements, tuple assignment, performing operations on tuples, tuple methods and built-in functions, nested tuples</p> <p>3.4 Set: Creating set, traversing, adding, removing data in set, performing set operations like join, Union intersection, difference</p> <p>3.5 Dictionary: accessing items in a dictionary using keys, mutability of dictionary: adding a new item, modifying an existing item, built-in dictionary functions.</p>	
<p><i>TSO 4a.</i> Create and use user defined functions to implement modular programming approach</p> <p><i>TSO 4b.</i> Differentiate variable scope with example.</p> <p><i>TSO 4c.</i> Import and use Python modules, libraries</p>	<p>Unit-4.0 Python Functions, Modules and packages</p> <p>4.1 Functions: types of function (built- in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, Lambda functions, returning value, scope of a variable: global scope, local scope</p> <p>4.2 Modules and Packages: Importing module using 'import' Regular Expressions, Exception Handling, PyPI Python Package Index, Pip Python package manager, Importing Libraries and Functions</p>	CO-4
<p><i>TSO 5a.</i> Write simple Python programs using numpy</p> <p><i>TSO 5b.</i> Use Numpy array in python program</p> <p><i>TSO 5c.</i> Use Numpy to solve linear algebra problem.</p>	<p>Unit-5.0 Numpy</p> <p>5.1 Introduction to NumPy</p> <p>5.2 Installation of NumPy</p> <p>5.3 NumPy Arrays:</p> <ul style="list-style-type: none"> • Understanding the NumPy array • The fundamental data structure in NumPy. • Creation of arrays using different methods: np.array(), np.zeros(), no one's (), etc. • Exploring array attributes like shape, size, and dimensions. <p>5.4 Array Indexing and Slicing:</p>	CO-5

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
	<ul style="list-style-type: none"> Accessing elements and subarrays in NumPy arrays using indexing and slicing. Demonstration of the difference between one-dimensional and multi-dimensional array indexing. <p>5.5 Array Operations:</p> <ul style="list-style-type: none"> Performing element-wise operations on Numpy arrays. Exploring universal functions (ufuncs) for mathematical operations. <p>5.6 Linear Algebra with NumPy:</p> <ul style="list-style-type: none"> Introduction to linear algebra operations using NumPy. Matrix multiplication, determinant, inverse, and solving linear equations. <p>5.7 File input and output with Numpy</p> <p>5.8 Broadcasting in Numpy</p>	
<p><i>TSO 6a.</i> Explain different types of Exceptions in python</p> <p><i>TSO 6b.</i> Write Python programs for exception handling in Python</p> <p><i>TSO 6c.</i> Differentiate different modes of file opening.</p> <p><i>TSO 6d.</i> Perform read, Write, Append operations in files</p>	<p>Unit 6: Exception and File Handling in Python</p> <p>6.1 Exception Handling: syntax errors, exceptions, need of exception handling, user-defined exceptions, raising exceptions, handling exceptions, catching exceptions, Try - except - else clause, Try - finally clause, recovering and continuing with finally, built-in exception classes.</p> <p>6.2 File Handling: text file and binary file, file types, open and close files, reading and writing text files, reading and writing binary files, file access modes</p>	CO-6

Note: One major TSO may require more than one Theory session/Period.

K) Suggested Laboratory (Practical) Session Outcomes (LSOs) and List of Practical:

Practical/Lab Session Outcomes (LSOs)	S. No.	Laboratory Experiment/Practical Titles	Relevant COs Number(s)
<p><i>LSO 1.1.</i> Write, execute and debug simple Python program using Integrated Development and Learning Environment (IDLE)</p> <p><i>LSO 1.2.</i> Write and execute simple 'C' program using variables, arithmetic expressions.</p>	1.	<p>a) Download and Install IDLE.</p> <p>Write and execute Python program to-</p> <p>b) Calculate the Area of a Triangle where its three sides a, b, c are given. $s=(a+b+c)/2$, Area=square root of $s(s-a)(s-b)(s-c)$ (write program without using function)</p> <p>c) Swap Two Variables</p> <p>d) Solve quadratic equation for real numbers.</p>	CO-1
<p><i>LSO 2.1.</i> Write and execute python programs using conditional statements.</p>	2.	<p>Write and execute Python program to-</p> <p>a) Check if a Number is Positive, Negative or zero.</p>	CO-2

Practical/Lab Session Outcomes (LSOs)	S. No.	Laboratory Experiment/Practical Titles	Relevant COs Number(s)
LSO 2.2. Write and execute python programs using various types of Loop statements		b) Check whether the given year is a Leap Year. c) Print all Prime Numbers in an Interval. d) Display the multiplication Table based on the given input. e) Print the Fibonacci sequence. f) Find the Factorial of a Number.	
LSO 3.1. Write and execute Python program to perform various operations on string using string operators and methods	3.	Write and execute Python program to- a) Check whether the string is Palindrome b) Reverse words in a given String in Python c) identify in a strings the name, position and counting of vowels. d) Count the Number of matching characters in a pair of string (set) e) Python program for removing i-th character from a string	CO-2, CO-3
LSO 4.1. Write and execute Python program to perform various operations on List using List operators and methods	4.	Write and execute Python program to- a) find largest number in a given list without using max(). b) find the common numbers from two lists. c) create a list of even numbers and another list of odd numbers from a given list. d) To find number of occurrences of given number without using built-in methods.	CO-2, CO-3
LSO 5.1. Write and execute Python program to perform various operations on Tuple using Tuple operators and methods.	5.	Write and execute Python program to- a) find the index of an item of a tuple. b) find the length of a tuple. c) to reverse a tuple. d) Write a Python program to sort a list of tuple by its float element. Sample data: [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')] Expected Output: [('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]	CO-2, CO-3
LSO 6.1. Write and execute Python program to perform various operations on sets using set methods.	6.	Write and execute Python program to- a) create an intersection of sets. b) create a union of sets. c) create set difference. d) check if two given sets have no elements in common.	CO-2, CO-3
LSO 7.1. Write and execute Python program to perform various operations on Dictionary using Dictionary methods	7.	Write and execute Python program to- a) Write a Python script to concatenate two dictionaries to create a new one b) Write a Python script to merge two Python dictionaries. c) Write a Python program to combine two dictionary adding values for common keys. d1 = {'a': 100, 'b': 200, 'c':300} d2 = {'a': 300, 'b': 200, 'd':400} Sample output: d({'a': 400, 'b': 400, 'd': 400, 'c': 300})	CO-2, CO-3

Practical/Lab Session Outcomes (LSOs)	S. No.	Laboratory Experiment/Practical Titles	Relevant COs Number(s)
<i>LSO 8.1.</i> Write and execute Python program to create user defined functions and call them.	8.	Write and execute Python program to- a) Write a Python function for reversing a string and call it. b) Write a Python function for calculating compound interest and call it. c) Write a Python function for calculating the factorial of a number and call it to calculate $n/(!r)*(n-r)$ where symbol “! “ stands for factorial.	CO-2, CO-4
<i>LSO 9.1.</i> Write and execute Python program to define a numpy array. <i>LSO 9.2.</i> Develop and execute Python program Using various types of Numpy operation.	9.	a) Write a python program to create a Numpy array filled with all zeros b) Write a python program to check whether a Numpy array contains a specified row c) Write a python program to Remove rows in Numpy array that contains non-numeric values d) Write a python program to Find the number of occurrences of a sequence in a NumPy array e) Write a python program to Find the most frequent value in a NumPy array f) Write a python program to Combine a one and a two-dimensional NumPy Array g) Write a python program to Flatten a Matrix in Python using NumPy h) Write a python program to Interchange two axes of an array	CO-2, CO-5
<i>LSO 10.1.</i> Develop and execute Python program to handle various type of exceptions. <i>LSO 10.2.</i> Develop and execute Python program to perform file operations.	10.	a) Using exception handling feature such as try...except, try finally- write minimum three programs to handle following types of exceptions. i. Type Error ii. Name Error iii. Index Error iv. Key Error v. Value Error vi. IO Error vii. Zero Division Error b) Write Python program to demonstrate file operations.	CO-6, CO-1, CO-2,

Note: in addition to above listed practical, students are suggested to practice all the examples covered by the teacher during theory sessions.

L) Suggested Term Work and Self Learning: Some sample suggested assignments, micro project and other activities are mentioned here for reference.

a. **Assignments:** Questions/Problems/Numerical/Exercises to be provided by the course teacher in line with the targeted COs.

b. **Micro Projects:**

1. Create a shop billing system
2. Create income tax calculation system.
3. Develop number guessing game (random integer will be selected by the system and the user has to guess that integer in the minimum number of guesses. Maximum 5 guess allowed.)
4. Assign numbers to alphabet a-z as (1-26). User will input a word. System will convert it to a number by adding all the individual alphabets of that word.
5. Design a basic calculator program that performs arithmetic operations like addition, subtraction, multiplication, and division based on user input.
6. Any other micro-projects suggested by subject faculty on similar line.

(Students may use file and sequence data types to develop above listed applications)

c. Other Activities:

1. Seminar Topics:
 - Tkinter widgets in python
 - Python date/time module and its applications
 - wxPython and its applications

M) Suggested Course Evaluation Matrix: The course teacher has to decide and use appropriate assessment strategy and its weightage in theory, laboratory and Term Work for ensuring CO attainment. The response/performance of each student in each of these designed activities is to be used to calculate **CO attainment**.

COs	Course Evaluation Matrix						
	Theory Assessment (TA)**		Term Work Assessment (TWA)			Lab Assessment (LA)#	
	Progressive Theory Assessment (PTA) Class/Mid Sem Test	End Theory Assessment (ETA)	Term Work & Self Learning Assessment			Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)
Assignments			Micro Projects	Other Activities*			
CO-1	10%	10%	15%	16%	16%	10%	16%
CO-2	15%	15%	15%	16%	16%	15%	16%
CO-3	25%	25%	20%	18%	18%	25%	18%
CO-4	15%	15%	15%	16%	16%	15%	16%
CO-5	25%	25%	25%	18%	18%	25%	18%
CO-6	10%	10%	10%	16%	16%	10%	16%
Total Marks	30	70	20	20	10	20	30
			50				

Legend:

*: Other Activities include self-learning, seminar, visits, surveys, product development, software development etc.

** : Mentioned under point- (N)

: Mentioned under point-(O)

Note:

- The percentage given are approximate
- In case of Micro Projects and End Laboratory Assessment (ELA), the achieved marks will be equally divided in all those COs mapped with total experiments.
- For CO attainment calculation indirect assessment tools like course exit survey need to be used which comprises of questions related to achievement of each COs.

N) Suggested Specification Table for End Semester Theory Assessment: Specification table represents the reflection of sample representation of assessment of cognitive domain of full course.

Unit Title and Number	Total Classroom Instruction (CI) Hours	Relevant COs Number(s)	Total Marks	ETA (Marks)		
				Remember (R)	Understanding (U)	Application & above (A)
Unit-1.0 Basics of Python Programming syntax	4	CO-1	7	3	2	2

Unit-2.0 Conditional and Iterative statements	6	CO-2	10	3	3	4
Unit-3.0 3.0 String, List, Tuples, set and Dictionary	12	CO-3	18	5	3	10
Unit-4.0 Python Functions, Modules and packages	7	CO-4	10	3	3	4
Unit-5.0 Numpy	12	CO-5	18	4	5	9
Unit-6.0 Exception and File Handling in Python	7	CO-6	7	2	2	3
Total	48	-	70	20	18	32

Note: Similar table can also be used to design class/mid-term/ internal question paper for progressive assessment.

O) Suggested Assessment Table for Laboratory (Practical):

S. No.	Laboratory Practical Titles	Relevant COs Number(s)	PLA/ELA		
			Performance		Viva-Voce (%)
			PRA* (%)	PDA** (%)	
1.	Write and execute Python program to- a) Calculate the Area of a Triangle where its three sides a,b,c are given. $s=(a+b+c)/2$, Area=square root of $s(s-a)(s-b)(s-c)$ (write program without using function) b) Swap Two Variables c) Solve quadratic equation for real numbers.	CO-1	40	50	10
2.	Write and execute Python program to- a) Check if a Number is Positive, Negative or zero. b) Check whether the given year is a Leap Year. c) Print all Prime Numbers in an Interval. d) Display the multiplication Table based on the given input. e) Print the Fibonacci sequence. f) Find the Factorial of a Number.	CO-2	40	50	10
3.	Write and execute Python program to- a) Check whether the string is Palindrome b) Reverse words in a given String in Python c) identify in a strings the name, position and counting of vowels. d) Count the Number of matching characters in a pair of string (set) e) Python program for removing i-th character from a string	CO-2, CO3	40	50	10
4.	Write and execute Python program to- a) find largest number in a given list without using max(). b) find the common numbers from two lists. c) create a list of even numbers and another list of odd numbers from a given list. d) To find number of occurrences of given number without using built-in methods.	CO-2, CO-3	40	50	10
5.	Write and execute Python program to- a) find the index of an item of a tuple. b) find the length of a tuple. c) to reverse a tuple.	CO-2, CO-3	40	50	10

S. No.	Laboratory Practical Titles	Relevant COs Number(s)	PLA/ELA		
			Performance		Viva-Voce (%)
			PRA* (%)	PDA** (%)	
	d) Write a Python program to sort a list of tuple by its float element. Sample data: [('item1', '12.20'), ('item2', '15.10'), ('item3', '24.5')] Expected Output: [('item3', '24.5'), ('item2', '15.10'), ('item1', '12.20')]				
6.	Write and execute Python program to- a) create an intersection of sets. b) create a union of sets. c) create set difference. d) check if two given sets have no elements in common.	CO-2, CO-3	40	50	10
7.	Write and execute Python program to- a) Write a Python script to concatenate two dictionaries to create a new one b) Write a Python script to merge two Python dictionaries. c) Write a Python program to combine two dictionary adding values for common keys. d1 = {'a': 100, 'b': 200, 'c':300} d2 = {'a': 300, 'b': 200, 'd':400} Sample output: d({'a': 400, 'b': 400, 'd': 400, 'c': 300})	CO-2, CO-3	40	50	10
8.	Write and execute Python program to- a) Write a Python function for reversing a string and call it. b) Write a Python function for calculating compound interest and call it. c) Write a Python function for calculating the factorial of a number and call it to calculate $n!/(r)!(n-r)!$ where symbol "!" stands for factorial.	CO-2, CO-4	40	50	10
9.	a) Write a python program to create a Numpy array filled with all zeros b) Write a python program to check whether a Numpy array contains a specified row c) Write a python program to Remove rows in Numpy array that contains non-numeric values d) Write a python program to Find the number of occurrences of a sequence in a NumPy array e) Write a python program to Find the most frequent value in a NumPy array f) Write a python program to Combine a one and a two-dimensional NumPy Array g) Write a python program to Flatten a Matrix in Python using NumPy Write a python program to Interchange two axes of an array	CO-2, CO-5	40	50	10
h)	Using exception handling feature such as try...except, try finally-write minimum three programs to handle following types of exceptions. viii. TypeError ix. NameError x. IndexError xi. KeyError xii. ValueError xiii. IOError xiv. ZeroDivisionError	CO-2, CO-6	40	50	10
i)	Write and execute Python program to-	CO-1	40	50	10

S. No.	Laboratory Practical Titles	Relevant COs Number(s)	PLA/ELA		
			Performance		Viva-Voce (%)
			PRA* (%)	PDA** (%)	
	a) Calculate the Area of a Triangle where its three sides a,b,c are given. $s=(a+b+c)/2$, Area=square root of $s(s-a)(s-b)(s-c)$ (write program without using function) b) Swap Two Variables c) Solve quadratic equation for real numbers.				

Legend:

PRA*: Process Assessment

PDA**: Product Assessment

Note: This table can be used for both end semester as well as progressive assessment of practical. Rubrics need to be prepared by the course teacher for each experiment/practical to assess the student performance.

P) Suggested Instructional/Implementation Strategies: Different Instructional/ Implementation Strategies may be appropriately selected, as per the requirement of the content/outcome. Some of them are Improved Lecture, Tutorial, Case Method, Group Discussion, Industrial visits, Industrial Training, Field Trips, Portfolio Based, Learning, Role Play, Live Demonstrations in Classrooms, Lab, Field Information and Communications Technology (ICT)Based Teaching Learning, Blended or flipped mode, Brainstorming, Expert Session, Video Clippings, Use of Open Educational Resources (OER), MOOCs etc.

Q) List of Major Laboratory Equipment, Tools and Software:

S. No.	Name of Equipment, Tools and Software	Broad Specifications	Relevant Experiment/Practical Number
1.	Computer system	Processor Intel Core i5, 4 GB RAM, 15 GB free disk space	All
2.	Integrated Development and Learning Environment (IDLE)	S/w to be downloaded for python 3.11.3 or higher	All

R) Suggested Learning Resources:**(a) Books:**

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Introduction to Computing and Problem-Solving using Python	E. Balagurusamy	McGraw Hill Education (India) Pvt. Ltd. 1 st Edition /2016
2.	Learning Python Programming	Jeffrey Elkner, Allan B. Downey, Chris Meyers	Samurai Media Limited. 2016
3.	Python Programming	Ashok Namdev Kamthane and Amit Ashok Kamthane	McGraw Hill Education (India) Pvt. Ltd. 2020, 2 nd Edition
4.	Programming in Python	Dr. Pooja Sharma	BPB Publications 2017

(b) Online Educational Resources:

- <https://docs.python.org/3/tutorial/>
- <https://www.w3schools.com/python/>
- <https://www.tutorialspoint.com/python/index.htm>

Note: Teachers are requested to check the creative commons license status/ financial implications of the suggested, online educational resources before use by the students.

A) Course Code : 2426306 (P2426306/S2426306)

B) Course Title : E- TYPING (HINDI)

C) Rationale

- To provide knowledge in typing
- To explain various types of typewriter
- To provide brief knowledge on classification of typewriter
- To provide knowledge on function of keyboard
- To improve your typing skills
- To provide instruction for good posture of sitting
- Discussion about the use of table and chair by Typist

D) Course Outcome (COs) : After the Completion of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor & Affective) in classrooms/ laboratory/ workshop/ field/ industries.

After completion of the course, the students will able to –

- Explain the various raw's of Keyboard.
- Describe the various form of Typewriter.
- Explain the history of Typewriter.
- Describe the role of Manual Typewriter in different offices and organizations.
- Describe the use of E-Typewriter in modern era.
- Describe the importance major parts of Typewriter.

D) Suggested Course Articulation Matrix (CAM):

Course Outcomes (Cos)	Program Outcomes (POs)							Program specific outcomes (POs)	
	PO-1 Basic and Discipline specific knowledge	PO-2 Problem analysis	PO-3 Professionalism	PO-4 Problem solving	PO-5 Digital working skill	PO-6 Awareness about ethical practice	PO-7 Lifelong learning	PS0-1	PSO-2
CO-1	3	2	-	1	-	1	-		
CO-2	2	2	2	1	1	-	-		
CO-3	2	3	1	1	1	1	1		
CO-4	2	2	1	1	-	-	-		
CO-5	3	3	2	-	1	-	1		

Legend: High (3), medium (2), Low (1) and mapping (-)

PSOs will be developed by respective program coordinate at institute level. As per NBA guidelines. Formulating PSOs is optional

E) Teaching and Learning Scheme:

Note:
will be
to

Course code	Course Title	Scheme of study (hours/week)			
		Lab Instruction (LI)	National Hours (TW+SL)	Total hours (CI+LI+TW+SL)	Total credits (c)
2426306	E-TYPING-I (HINDI)	04	02	06	03

Prefix
added
course

code if applicable (T for theory paper, p for practical paper and S for term work)

Legend:

CI: Classroom instruction (includes different instructional/ implementation strategies lecture (L), Tutorial (T), case method, Demonstrations, video demonstration, problem based learning etc. to deliver theoretical concepts)

LI: Laboratory instruction (includes experiments/ practical performances / problem based experiences in laboratory. Workshop, field or other locations using different instructional \implementation strategies.

National hours: Hours of engagement by learns, other than the contact hours for ensuring learning.

TW: Term Work (Include assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: Self learning MOOCs, spoken tutorials, online educational resources etc.)

C : Credits = (1x CI hours) + (0.5 x Li hours) + (0.5 x notional hours)

NOTE: TW and SL have to be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome off learning.

F) Assessment scheme: Note: Prefix will be added to course code if

Course code	Course Title	Assessment Scheme (Marks)				Total marks (TA+TWA+ LA)
		Internal	External	Progressive lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2026306	E-TYPING (HINDI)	10	15	10	15	50

applicable (T for theory paper , P for practical paper and S for Term Work)

Legend:

PTA: Progressive theory assessment in class room (includes class test, mid-term test and quiz using online \offline modes)

PLA: Progressive laboratory assessment (includes process and product assessment using rating scales and rubrics)

TWA: Term work & self-learning assessment (includes assessment related to student performance in assessments seminars micro projects, industrial visits, self – learning, any other student activities etc.)

Note:

- . Separate passing is must for progressive and end semester assessment for both theory and practical.
- . ETA & ELA are to be carried out at the end of the term / semester.
- . Term work is to be done by the students under the guidance of internal faculty but its assessment will be done internally (40%) as well as externally (60%). assessment related to planning and execution of Term Work activities like assessment, micro project, and seminar and self – learning is to be done by internal faculty (internal assessment) Whereas assessment of output / product / presentation related to these activities will be carries out by external faculty /expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

Course Curriculum Detailing: This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Class room instruction (CI), laboratory instruction (LI), Term Work (TW) And self-Learning (SL). Students are expected to demonstrate the attainment off Theory Session Outcome (TSOs) and Lab Session Outcome (LSOs) Leading to attainment of cost outcomes (COs) upon the completion of the course. While Curriculum detailing NEP 2020 related reforms like green skills, Sustainability, multidisciplinary aspects, society connect Indian Knowledge system (IKS) and others must be integrated appropriately.

Suggested Laboratory (Practical) Session Outcomes (LSOs) and List of Practical: P 2426306

Practical/Lab Session Outcomes (LSOs)	Laboratory Experiment/Practical Titles
1. टंकण की क्या उपयोगिता हैं? 2. टाइप करते समय उचित मुद्रा क्यों महत्वपूर्ण हैं?	1. बैठने की सही स्थिति सिखाना और टंकण
1. गति का सिद्धांत क्या हैं? 2. गति से आप क्या समझते हैं।	2. गति और शुद्धता के बारे में समझाना।
1. की-बोर्ड में कितने बटन होते हैं। उसका वर्णन करें। 2. सिफ्ट की का क्या काम होता है।	3. आधार पंक्ति एवं परी संख्या का सही अभ्यास कराना। 3.1 निम्न पंक्ति एवं संख्या पंक्तिसिफ्ट कुंजी का संचालन। 3.2 गति बढ़ाना और शुद्धता पर ध्यान देना।
1. दाएँ हाशिए और बाएँ हाशिए में अंतर स्पष्ट करें। 2. दाएँ और बाएँ दोनों तरफ कितना हाशिया छोड़ा जाता है।	4. हाशिए लगाना बाएँ, दाएँ हाशिए लगाना, पंक्ति अंतरण करना, शीर्षक उपशीर्षक का केन्द्रित करना एवं व्याकरणिक चिह्नों का प्रयोग।
1. पैराग्राफ टाइप करते समय विशेष चिह्नों के प्रयोग का वर्णन करें। 2. टाइप करते समय विशेष चिह्नों का किस प्रकार करना चाहिए।	5. शब्दों के विभाजन पैराग्राफ टाइप करने एवं विशेष चिह्नों का प्रयोग एवं अभ्यास करना।

Suggested Term Work and Self learning: S2426306 Some sample suggested assignments, micro project and other activities are mentioned here for reference.

- a. Assignments: Questions/ Problems/Numerical/Exercise to be provided by the course teacher in line with targeted Cos.
1. Prepare an assignment on Importance of Typewriter.
 2. Explain about proper fingering.
 3. Explain how to achieve keyboard Mastery.
 4. Write the uses of different keys.
 5. Prepare an assignment on different Parts of Typewriter.
 6. Write a project work on qualities of a good Typist.
 7. Explain the use of Punctuation of marks.
 8. Write an assignment on Maintenance of a typewriters including Simple Mechanism.

Micro Project

1. Prepare a chart for different types of Typewriter.
2. Prepare a project for how to be a good typewriter.
3. Prepare a comparative study on Manual Typewriting and E- Typewriting.
4. Prepare a list of different parts of Typewriter.
5. Prepare an assignment on good and bad posture during Typing.
6. Prepare an assignment on the History of the Typewriter.

Other Activities

1. Seminar Activities

- Seminar on Accuracy and Speed.
- The study on how to make typing more effective.
- Study about Importance of Typing.
- Study about the Manual and E- Typewriter.
- Study on the structure of Typewriter.

2. Visit

- Visit to a Professional writer.
- Visit to Federal Government.
- Visit to Banks.
- Visit to Attorneys.
- Visit to Federal Prisons.

Suggested Course Evaluation Matrix: The course teacher has to decide and use appropriate assessment strategy and its weightage in theory, laboratory and Term Work for ensuring CO attainment. The response/performance of each student in each of these designed activities is to be used to calculate **CO attainment**

Legend:

- : Other Activities include Self-Learning, Seminar, Visits, Surveys, Product development, Software development etc.
- : Mentioned under Point - (N)
- : Mentioned Under Point- (O)

COs	Course Evaluation Matrix						
	Theory Assessment(TA)		Term Work Assessment (TWA)			Lab Assessment(LA)	
	Progressive theory Assessment (PTA) Class/Mid Sem Test	End Theory Assessment (ETA)	Term Work & Self Learning Assessment			Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)
			Assignments	Micro Projects	Other Activities		
CO-1	20%	20%	15%	20%	10%	20%	15%
CO-2	15%	20%	20%	20%	15%	15%	20%
CO-3	20%	15%	15%	20%	25%	20%	15%
CO-4	20%	20%	25%	20%	25%	20%	25%
CO-5	25%	25%	25%	20%	25%	25%	25%
Total Marks	30	70	20	20	10	30	20
			50				

Note:

- The percentage given are approximate
- In case of Micro Projects and End Laboratory Assessment (ELA), the achieved marks will be equally divided in all those Cos mapped total experiments.
- For CO attainment calculation indirect assessment tools like course exit survey need to be used which comprises of questions related to achievement of each Cos.

Suggested Instructional / Implementation strategies: Different Instructional/ Implementation strategies may be appropriately selected, as per the requirement of the content/outcome. Some of them are Improved Lecture, Tutorial, Case Method, Group Discussion, Industrial visits, Industrial Training, Field Trips, Portfolio Based, Learning, Role Play, Live Demonstrations in Classrooms, Lab, Field Information and Communications Technology (ICT) Based Teaching Learning, Blended or flipped mode, Brainstorming, Expert Session, Video Clippings, Use of Open Educational Resources (OER).

P) List of Major Laboratory Equipment, Tools and Software:

S. No	Name of Equipment, Tools	Board Specifications	Relevant Experiment/Practical Number
1.	Typing machine	Hindi typing manual typewriter	All lessons
2.	Computer	Processor Intel Core i7 RAM 32 GB,Font Hindi Downloaded	
3.	Printer	High Speed Duplex Printer	
4.	Scanner	Extended field of view for capturing both large and small objects	

Suggested Learning Resources:**Recommended Books:-**

S.NO	NAME	WRITER
01	Typewriter Made Easy For beginners by Dr.O.P. Kuthiala	Pitman Publications
02	Typewriting Speed and Accuracy Dr.O.P. Kuthiala	Pitman Publications

On Line Educational Resources:-

<https://www.typing.com>

<https://www.typingbaba.com>

<https://www.typingmaster.com>

- A) **Course Code** : 2400208(P2400208/S2400208)
 B) **Course Title** : Sports, Yoga and Meditation
 C) **Pre- requisite Course(s)** :
 D) **Rationale**

Sports or Physical Education, Yoga and Meditation is an integral part of a person's overall well-being and is imperative for a healthy mind and body balance. So, it is necessary that every educational institutes should lay ample emphasis on including sports, yoga and meditation as a necessary part of education, however, it depends on how it is introduced in the curriculum makes all the difference. Sports, Yoga and Meditation plays a very important role in overall Well-being for a good personality, develops value system, sense of friendliness, feeling of togetherness thereby developing team spirit and mutual cooperation. Its also plays a major role in reducing level of stress/anxiety and add to the mental toughness. Looking to the ample benefits there is need to inculcate sports, Yoga and meditation as a day to day habit and imparting education related to physical education is more critical than ever before.

- E) **Course Outcomes (COs):** After the completion of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor and Affective) in classroom/ laboratory/ workshop/ field/ industry.

After completion of the course, the students will be able to-

- CO-1** Select appropriate physical activities to maintain healthy lifestyle.
CO-2 Apply basic principles and practices of Yoga and meditation for overall growth & development.
CO-3 Use fitness and wellness techniques for optimal health and wellbeing
CO-4 Apply ancient Indian ayurvedic methods and techniques, exercises, yoga and meditation for fitness and wellness.

- F) **Suggested Course Articulation Matrix (CAM):**

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	3	3	-	1	-	2		
CO-2	3	3	3	-	1	-	2		
CO-3	3	3	3	-	1	-	2		
CO-4	3	2	1	-	1	-	1		

Legend: High (3), Medium (2), Low (1) and No mapping (-)

* PSOs will be developed by respective programme coordinator at institute level. As per latest NBA guidelines, formulating PSOs is optional

G) Teaching & Learning Scheme:

Course Code	Course Title	Scheme of Study (Hours/Week)					Total Credits (C)
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	
		L	T				
2400208	Sports, Yoga and Meditation	-	-	01	01	02	01

Legend:

CI: Classroom Instruction (Includes different instructional/implementation strategies i.e. Lecture (L), Tutorial (T), Case method, Demonstrations, Video demonstration, Problem based learning etc. to deliver theoretical concepts)

LI: Laboratory Instruction (Includes experiments/practical performances /problem-based experiences in laboratory, workshop, field or other locations using different instructional/Implementation strategies)

Notional Hours: Hours of engagement by learners, other than the contact hours for ensuring learning.

TW: Term Work (includes assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: Self Learning, MOOCs, spoken tutorials, online educational resources etc.

C: Credits = (1 x CI hours) + (0.5 x LI hours) + (0.5 x Notional hours)

Note: TW and SL have to be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome of learning.

H) Assessment Scheme:

Course Code	Course Title	Assessment Scheme (Marks)						Total Marks (TA+TWA+LA)
		Theory Assessment (TA)		Term Work & Self-Learning Assessment (TWA)		Lab Assessment (LA)		
		Progressive Theory Assessment (PTA)	End Theory Assessment (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2400208	Sports, Yoga and Meditation	-	-	25	-	10	15	50

Legend:

PTA: Progressive Theory Assessment in class room (includes class test, mid-term test and quiz using online/offline modes)

PLA: Progressive Laboratory Assessment (includes process and product assessment using rating Scales and rubrics)

TWA: Term work & Self Learning Assessment (Includes assessment related to student performance in assignments, seminars, micro projects, industrial visits, self-learning, any other student activities etc.)

Note:

- ETA & ELA are to be carried out at the end of the term/ semester.
- Term Work is to be done by the students under the guidance of internal faculty but its assessment will be done **internally (40%)** as well as **externally (60%)**. Assessment related to planning and execution of Term Work activities like assignment, micro project, seminar and self-learning is to be done by internal faculty (Internal Assessment) whereas assessment of output/product/presentation related to these activities will be carried out by external faculty/expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

I) **Course Curriculum Detailing:** This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Classroom Instruction (CI), Laboratory Instruction

(LI), Term Work (TW) and Self Learning (SL). Students are expected to demonstrate the attainment of Theory Session Outcomes (TSOs) and Lab Session Outcomes (LSOs) leading to attainment of Course Outcomes (COs) upon the completion of the course. While curriculum detailing, NEP 2020 related reforms like Green skills, Sustainability, Multidisciplinary aspects, Society connect, Indian Knowledge System (IKS) and others must be integrated appropriately.

J) Theory Session Outcomes (TSOs) and Units:

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<p><i>TSO.1a</i> Explain ancient history and development of yoga in India</p> <p><i>TSO.1b</i> Compare the ancient Indian games with the modern games.</p> <p><i>TSO.1c</i> Differentiate between given terms used in sports</p> <p><i>TSO.1d</i> Describe the different aspects of Mental Toughness</p> <p><i>TSO.1e</i> Use Imagery Training for sports</p> <p><i>TSO.1f</i> Apply motivation techniques to motivate students in sports.</p> <p><i>TSO.1g</i> Use concentration techniques for playing and exercising.</p> <p><i>TSO.1h</i> Manage Stress, Anxiety and Arousal during sports.</p> <p><i>TSO.1i</i> Select sports and exercise for healing and developing health and mental wellness</p> <p><i>TSO.1j</i> Describe the impact of parents' involvement in their children's sports activities</p> <p><i>TSO.1k</i> Select sports and exercises for physically challenged as per their need.</p>	<p>Unit-1.0 Sports and Exercises</p> <p>1.1 Historical development of physical activities and sports in India, Indian ancient games- Kho-Kho and Kabaddi, Chariot races, riding elephants and horse, swordsmanship, wrestling, boxing, atyapatya, archery, dancing, dands baithak, malkhamb, lezim, lathi etc</p> <p>1.2 Origin of traditional sports, 3rd century BCE- martial arts and archery, indoor games like Chess and Snakes & Ladders have origins in ancient India, in the form of games of Chaturanga and Gyan Chauper,</p> <p>1.3 Dholavira, the world's oldest terraced arena 3000 BC</p> <p>1.4 Definition of play, game, sports, exercise, psychology, sports psychology and exercise psychology, psychology and common sense.</p> <p>1.5 Mental toughness- mind, Imagery, use of imagery and imagery in sports, types of imagery (visual, kinesthetic, auditory and olfactory)</p> <p>1.6 Motivation in sport and goalsetting in sports</p> <p>1.7 Arousal regulation – self-awareness of regulation, anxiety reduction techniques- somatic anxiety reduction techniques, cognitive Anxiety reduction, multimodal anxiety reduction, coping with stress. Arousal-inducing techniques. Arousal and anxiety measurement factors, Arousal and anxiety signs recognition</p> <p>1.8 Nutrition and rehabilitation, Importance of concentration and attentional focus in sports and training, Impact of health on healing from physical athletic injuries. Impact of exercise to increase mental wellness, Role of coach in sports, parents' involvement in their children's sports activities.</p> <p>1.9 Adaptation of sports and exercises for physically challenged students in all levels.</p>	<p>CO1, CO4</p>
<p><i>TSO.2a</i> Explain ancient history and development of yoga in India</p> <p><i>TSO.2b</i> Identify the physiology of yoga and meditation.</p> <p><i>TSO.2c</i> Evaluate meditation and yoga as a healing modality.</p> <p><i>TSO.2d</i> Select asanas and pranayama as per need.</p> <p><i>TSO.2e</i> Describe the effect of yoga and meditation on ageing, stress and hypertension.</p>	<p>Unit-2.0 Yoga and Meditation</p> <p>2.1 Origin of yoga, History and development of yoga, Adi yogi, evidences of yoga in pre-Vedic period (2700 B.C.), Vedic Period, Pre-Classical Period, Classical Period- Patanjali's period, Modern Period.</p> <p>2.2 Yoga practices and the related literature- Vedas (4), Upanishads (108), Smritis, teachings</p>	<p>CO2, CO4</p>

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<p><i>TSO.2f</i> Select mediation techniques as per the need.</p> <p><i>TSO.2g</i> Explain Bandha, Mudra and Chakra</p> <p><i>TSO.2h</i> Enumerate the steps of Suryanamaskar.</p> <p><i>TSO.2i</i> Select Yoga and Meditation for physically challenged as per their need.</p>	<p>of Buddhism, Jainism, Panini, Epics (2), Puranas (18)</p> <p>2.3 Importance of Yoga & Meditation, meaning of the term Yoga and Meditation, Fundamentals Principles of Yoga & Fitness training, Eight Limbs of Yoga</p> <p>2.4 Difference between yoga asana and physical exercises, Difference between yoga and meditation</p> <p>2.5 Role of Yoga and Meditation in Purificatory Process, in character building, developing concentration, will power and discipline</p> <p>2.6 Types of Yoga Practices - Asanas, Pranayama, Meditation</p> <p>2.7 Mindfulness – knowing the mind, training the mind, feeling the mind</p> <p>2.8 Different Methods of meditation, Physiology of meditation, Mental, physical and emotional benefits of Asanas, Pranayama, Concentration and Meditation</p> <p>2.9 Bandha, Mudra and Chakra</p> <p>2.10 Effects of Asanas and pranayama on physiology of human body</p> <p>2.11 Importance of “Suryanamaskar</p> <p>2.12 Adaptation of Yoga and meditations for physically challenged students in all levels.</p> <p>2.13 Yoga Asanas Do’s and Don’ts for Beginners</p>	
<p><i>TSO.3a</i> Explain the ancient Indian ayurvedic methods for fitness and wellness</p> <p><i>TSO.3b</i> Identify the different factors affecting the fitness and wellness in the given situation</p> <p><i>TSO.3c</i> Use different methods to maintain Health and Wellness</p> <p><i>TSO.3d</i> Explain the components of Balance Diet</p> <p><i>TSO.3e</i> Identify the causes of stress and anxiety in the given situation</p> <p><i>TSO.3f</i> Use stress reduction techniques to manage Stress and Anxiety</p> <p><i>TSO.3g</i> Manage Stress, Anxiety and Depression in the given situation</p> <p><i>TSO.3h</i> Select recovery process for energy replenishment after exercise.</p>	<p>Unit 3.0 Fitness and Wellness</p> <p>3.1 Evolution of wellness, 3,000-1,500 BC: Ayurveda –holistic system, Tailored Ayurvedic regimens as per unique constitution of each person (their nutritional, exercise, social interaction and hygiene needs) – with the goal of maintaining a balance that prevents illness.</p> <p>3.2 Meaning, Importance, Definition and dimensions of Health and Wellness (WHO/Yoga)</p> <p>3.3 Factors affecting Fitness and Wellness</p> <p>3.4 Role of Physical Activities and Recreational Games in maintaining physiological and psychological wellbeing.</p> <p>3.5 Different Methods to Maintain Health, Wellness and to enhance mood</p> <p>3.6 Nutrition for Health & Wellness, Relationship between Diet and Fitness Components of Balance Diet and its importance – Carbohydrates, Protein, Fat, Vitamins & Minerals, Water, Healthy Lifestyle through Diet and Fitness</p> <p>3.7 Anxiety, Stress and Aging-Meaning of Anxiety, Stress and Aging, Types and Causes of Stress,</p> <p>3.8 Stress, anxiety and depression reduction with exercise, yoga and meditation</p> <p>3.9 Energy Continuum and Recovery Process, Metabolism and exercise, Recovery from exercise, Replenishment of energy stores</p>	<p>CO3, CO4</p>

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
	during recovery process, Removal of excess lactic acid produced during exercise	

Note: One major TSO may require more than one Theory session/Period.

K) Suggested Laboratory (Practical) Session Outcomes (LSOs) and List of Practical: P2400208

Practical/Lab Session Outcomes (LSOs)	S. No.	Laboratory Experiment/Practical Titles	Relevant COs Number(s)
<p><i>LSO 1.1.</i> Perform various sports activities for overall growth and development</p> <p><i>LSO 1.2.</i> Select suitable sport activities as per your need.</p>	1.	Track & Field: Running, Jumping, walking and Throwing, Cycling Event to develop Endurance, Speed, Strength, Agility, Flexibility etc	CO1
	2.	Aerobics and Gymnastics to develop Strength, Agility and Flexibility	
	3.	Net/Wall Sports – Volleyball and Basketball to develop Endurance, Speed, Strength, Agility and Flexibility	
	4.	Striking & Fielding sports like Cricket, bowling, Hockey, Football Baseball etc. to develop Endurance, Speed, Strength, Agility, Flexibility and Coordination	
	5.	Racket Game- Tennis, Badminton, Table tennis etc to develop Endurance, Speed, Strength, Agility and Flexibility	
	6.	Outdoor games: Kho-Kho and Kabaddi and cycling develop Endurance, Speed, Strength, Agility and Flexibility	
	7.	Indoor games: Chess and Carrom, Swimming, Boxing, Karate Weightlifting, Power Lifting, Physique Training, Archery, Roller Skating etc to develop concentration.	
	8.	Prepare and organize Adapted Sports for various levels of physically challenged and impairments.	
<p><i>LSOs 2.1</i> Perform various yogic techniques for internal purification and development.</p>	9.	Shat Karmas: Tratakam, Jala-Neti, Sutra-Neti, Vamana Dhauti, Danda Dhauti, Agnisara, Nauli	CO2
	10.	Perform following asanas with correct posture: Ardha-Padmasana [virasana], Ardha-Halāsana, Pavana-Muktasana, Naukasana, Ardha-shalabhasana, Shalabhasana, Makarasan, Bhujangasana, Dhanurasana	
	11.	Perform following asnas with correct posture: Vakrasana, Chakrasana, Paschimottanasana, Ugrasana, Gom ukhasana, Padmasana, Siddhasana, Bhadrasana, Swastikkasana, Vajrasana, Supta-Vajrasana, Yoga-Mudra	
	12.	MUDRAS & SURIYANAMASKAR Brahma-Mudra, Simha-Mudra, Shanmugi Mudra, Viparithakarani-Mudra, Ashwsini-Mudra, Suriyanamaskar	
	13.	BANDHAS Jalandhara-Bandha, Jihva-Banda, Uddiyana Bandha, Moola-Bandha	
	14.	PRANAYAMAS Nadi-Shuddhi, Nadi-Shodhana, Suryabhadana, Ujjayi, Bhastrika Pranayama, Bhramari Pranayama, Sitkari , Sitali , Kapalabhati	
	15.	MEDITATION -Silent Meditation	

Practical/Lab Session Outcomes (LSOs)	S. No.	Laboratory Experiment/Practical Titles	Relevant COs Number(s)
	16.	MEDITATION – Mantra Meditation	
LSO 3.1. Prepare diet chart for optimal health and wellbeing	17.	Prepare a diet chart for the given sport.	CO3
LSO 3.2. Use health monitoring device	18.	Measure heart rate and heart function with health monitoring device	
	19.	Measure blood sugar and blood pressure	
LSO 3.3. Use different equipment's	20.	Use massage therapy equipment, Hot and cold therapy equipment, Ultrasound therapy equipment	
LSO 3.4. Identify your own threshold and identification level for different taste Stimulations	21.	Determine the taste threshold for three different sensations- sweet salty and sour	
LSO 3.5. Check the given sample for conformance to the standard for moisture content.	22.	Determine the moisture content in the given sample of oil/fat	
LSO 3.6. Purity tests of oils/fats	23.	Determine the impurities in the given sample of oil.	
LSO 3.7. Acidity test in given sample of fat/oil	24.	Determines the acid value and free fatty acids in the given sample of oil/fat.	
LSO 3.8. Check whether any given samples of oils/fats conform to the standard.	25.	Determine the peroxide value in the given sample of fat or oil.	

L) Suggested Term Work/ Activities and Self Learning: S2400208 Some sample suggested assignments, micro project and other activities are mentioned here for reference.

a. Assignments: Questions/Problems/Numerical/Exercises to be provided by the course teacher in line with the targeted COs.

- i. Calculate your Body Composition (BMI) and Cardiovascular Assessment
- ii. Assessment for Muscular Endurance, Muscular Strength,
- iii. Flexibility, Cardio-respiratory Endurance, Body Composition
- iv. Rules and Regulations of different indoor and outdoor games.

b. Micro Projects:

- i. Identify and synthesize the factors that influence health in various situations (05 situations). Prepare a report with details of situations and solutions to remove the factors.
- ii. Visit different sports club, gyms, and schools and identify various measure taken by them for Fitness and wellness of students/ members
- iii. Visit different sports club, gyms, and schools and identify various measure taken by them for Fitness and wellness of physically challenged students/ members
- iv. Identify which type of stress, anxiety and depression students are facing and steps and solutions to overcome this.

c. Other Activities:

1. Seminar Topics:

- Identify the health-related challenges in current time and able to apply the preventive measures.
 - Role of peers, community and media in health and wellbeing in each level
 - Knowledge and skills required to preserve community health and well-being
 - Effect of yoga and meditation in maintaining fitness.
 - Methods to involve physically challenged students /members in all levels in sports, yoga and meditation in community.
 - Counselling techniques to counsel players in matters of handling success and failure.
2. Visits: Visit nearby sports complex, Gyms, stadium etc and prepare a report on hygiene maintenance, medical facilities available, facilities available for physically challenged members, facilities available for old aged members, tools and equipment available and training facilities.
3. **Self-Learning Topics:**
- Anatomy and physiology of human being
 - Role of Yoga and Meditation in Purificatory Process, in character building, developing concentration, will power and discipline
 - Mindfulness
 - Different Methods to Maintain Health, Wellness and to enhance mood
 - Diet and Nutrition
 - Metabolic adaptations to exercise
 - Cardio-respiratory changes

M) Suggested Course Evaluation Matrix: The course teacher has to decide and use appropriate assessment strategy and its weightage in theory, laboratory and Term Work for ensuring CO attainment. The response/performance of each student in each of these designed activities is to be used to calculate **CO attainment**.

COs	Course Evaluation Matrix						
	Theory Assessment (TA)**		Term Work Assessment (TWA)			Lab Assessment (LA)#	
	Progressive Theory Assessment (PTA) Class/Mid Sem Test	End Theory Assessment (ETA)	Term Work & Self Learning Assessment			Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)
			Assignments	Micro Projects	Other Activities*		
CO-1, CO4	-	-	35%	35%	35%	35%	35%
CO-2, CO4	-	-	35%	35%	35%	35%	35%
CO-3, CO4	-	-	30%	30%	30%	30%	30%
Total Marks	-	-	10	10	05	10	15
			25				

Legend:

*: Other Activities include self- learning, seminar, visits, surveys, product development, software development etc.

**.: Mentioned under point- (N)

#: Mentioned under point-(O)

Note:

- The percentage given are approximate
- In case of Micro Projects and End Laboratory Assessment (ELA), the achieved marks will be equally divided in all those COs mapped with total experiments.
- For CO attainment calculation indirect assessment tools like course exit survey need to be used which comprises of questions related to achievement of each COs.

N) Suggested Specification Table for End Semester Theory Assessment: (Not Applicable)

O) Suggested Assessment Table for Laboratory (Practical):

S. No.	Laboratory Practical Titles	Relevant COs Number (s)	PLA/ELA		
			Performance		Viva-Voce (%)
			PRA* (%)	PDA** (%)	
1.	Track & Field: Running, Jumping, walking and Throwing, Cycling Event to develop Endurance, Speed, Strength, Agility, Flexibility etc	CO1	30	60	10
2.	Aerobics and Gymnastics to develop Strength, Agility and Flexibility		30	60	10
3.	Net/Wall Sports – Volleyball and Basketball to develop Endurance, Speed, Strength, Agility and Flexibility		30	60	10
4.	Striking & Fielding sports like Cricket, bowling, Hockey, Football Baseball etc. to develop Endurance, Speed, Strength, Agility, Flexibility and Coordination		30	60	10
5.	Racket Game- Tennis, Badminton, Table tennis etc to develop Endurance, Speed, Strength, Agility and Flexibility		30	60	10
6.	Outdoor games: Kho-Kho and Kabaddi and cycling develop Endurance, Speed, Strength, Agility and Flexibility		30	60	10
7.	Indoor games: Chess and Carrom, Swimming, Boxing, Karate Weightlifting, Power Lifting, Physique Training, Archery, Roller Skating etc to develop concentration.		30	60	10
8.	Prepare and organize Adapted Sports for various levels of physically challenged and impairments.		30	60	10
9.	Shat Karmas : Tratakam, Jala-Neti, Sutra-Neti, Vamana Dhauti, Danda Dhauti, Agnisara, Nauli	CO2	40	50	10
10.	Perform following asanas with correct posture: Ardha-Padmasana [virasana], Ardha-Halasana, Pavana-Muktasana, Naukasana, Ardha-shalabhasana, Shalabhasana, Makarasan, Bhujangasana, Dhanurasana		40	50	10
11.	Perform following asnas with correct posture: Vakrasana, Chakrasana, Paschimottanasana, Ugrasana, Gomukhasana , Padmasana, Siddhasana, Bhadrasana, Swastikkasana, Vajrasana, Supta-Vajrasana, Yoga-Mudra		40	50	10
12.	MUDRAS & SURIYANAMASKAR Brahma-Mudra, Simha-Mudra, Shanmugi Mudra, Viparithakarani-Mudra, Ashwsini-Mudra, Suriyanamaskar		40	50	10
13.	BANDHAS: Jalandhara-Bandha, Jihva-Banda, Uddiyana Bandha, Moola-Bandha		40	50	10
14.	PRANAYAMAS : Nadi-Shuddhi, Nadi-Shodhana, Suryabhadana, Ujjayi, Bhastrika Pranayama, Bhramari Pranayama, Sitkari , Sitali , Kapalabhati		40	50	10
15.	MEDITATION -Silent Meditation		40	50	10
16.	MEDITATION - Mantra Meditation		40	50	10
17.	Prepare a diet chart for the given sport.	CO3	40	50	10
18.	Measure heart rate and heart function with health monitoring device		40	50	10
19.	Measure blood sugar and blood pressure		40	50	10
20.	Use massage therapy equipment, Hot and cold therapy equipment, Ultrasound therapy equipment		40	50	10
21.	Determine the taste threshold for three different sensations- sweet salty and sour		40	50	10
22.	Determine the moisture content in the given sample of oil/fat		40	50	10
23.	Determine the impurities in the given sample of oil.		40	50	10
24.	Determines the acid value and free fatty acids in the given sample of oil/fat.		40	50	10
25.	Determine the peroxide value in the given sample of fat or oil.		40	50	10

Note: -All the above Games can be selected from the list of SGFI/AIU/IOA

Legend:

PRA*: Process Assessment

PDA**: Product Assessment

Note: This table can be used for both end semester as well as progressive assessment of practical. Rubrics need to be prepared by the course teacher for each experiment/practical to assess the student performance.

P) Suggested Instructional/Implementation Strategies: Different Instructional/ Implementation Strategies may be appropriately selected, as per the requirement of the content/outcome. Some of them are Improved Lecture, Tutorial, Case Method, Group Discussion, Industrial visits, Industrial Training, Field Trips, Portfolio Based, Learning, Role Play, Live Demonstrations in Classrooms, Lab, Field Information and Communications Technology (ICT)Based Teaching Learning, Blended or flipped mode, Brainstorming, Expert Session, Video Clippings, Use of Open Educational Resources (OER), MOOCs etc.

Q) List of Major Laboratory Equipment, Tools and Software:

S. No.	Name of Equipment, Tools and Software	Broad Specifications	Relevant Experiment/ Practical Number
1.	High end computers for record keeping	Processor Intel Core i7 with Open GL Graphics Card, RAM 32 GB, DDR3/DDR4, HDD 500 GB, Graphics Card NVIDIA OpenGL 4 GB, OS Windows 10	All
2.	Aerobics and Gymnastic	Basic facilities and equipment's – Balance Beams, Gymnastic Ball, Gymnastic Chalk, Gymnastic Clubs, Flex Floor Systems, High Bars, Hoops, Horizontal Bars, Leotards, Music, Parallel Bar, Pommel Horses, Ribbons, Rings, Ropes, Single Bar Trainer, Spotting Blocks, Streamers, Trampoline, Tumble Track, Uneven Bar, Vault, Vault Spring Board Gymnastic Accessories – Chalk, Grips, Wrist Supports, Mat, Tape, Socks Singlets, Pants Shoes, Shorts Aerobics- Resistance bands, Jump rope, Step bench or box, Abdominal wheel, Exercise mat, Gliding discs, dumbbells, fitness trampolines, hoops	2
3.	Striking & Fielding sports	Complete Cricket Kit, Football Kit, Bowling Kit, Hockey Kit	4
4.	Net/Wall Sports	Complete Volley Ball and basketball kit	3
5.	Racket Game	Complete Tennis Kit, Table Tennis Kit and badminton kit	5
6.	Outdoor games	Complete Kho-Kho and Kabaddi and cycling kit	6
7.	Indoor games	Complete Chess kit, Carrom kit, Swimming kit, Boxing kit, Karate kit, Weightlifting kit, Power Lifting kit, Archery kit and Roller-Skating kit	7
8.	Physique Training	Cardio Machines- Treadmills, Elliptical Trainers, Exercise Bikes, Rowing Machines, Indoor Bikes, Vibration Machines, Steppers Recumbents Dumbbells, Multi-Purpose Bench, power rack, Adjustable Dumbbell Set 2 x 3-10 kg, Exercise mat, resistance band, balance trainer	7
9.	Sports and wellbeing equipment's for physically challenged and impairments.	Fusion Wheel – all-in-one portable wheelchair gym, Pedal exerciser, Deluxe hand exerciser, Greepier sports shoelaces, Active Hands, Ramble Tag Guidance Aid, Cat Tongue Grip Tape Adaptive Cycling- Straps, Leg/ Foot Adapters, Prosthetics, Steering Dampener, Handlebar Adapters, HANDCYCLING-Wheelchairs, Bike-On Handcycles, Trikes, Racing Wheelchairs, Trikes, Recumbent Bikes, All-terrain Handcycles, Mono Cycling, Hand Bikes - Off-Road, Cross Country, Racing, Downhill Archery - Field Tripod and Quad Mounts (Archery & Gun), In-Line Draw-Loc, Mounts (Archery & Gun), Stands (Gun), Mounts (Archery & Gun) Binoculars and Rests (Gun), Crossbows (Archery), Wheelchair Platform Stabilizing Crutch Poles, Dampeners, Crossbows (Archery), Hands free shooting rest (Gun) Bowling: ramp, roll assist Fitness: Anti-Gravity Treadmill, LapMat for Wheelchairs, Strike Assist, Adaptive Treadmill	8

S. No.	Name of Equipment, Tools and Software	Broad Specifications	Relevant Experiment/ Practical Number
10.	Yoga	Yoga Mats, Yoga Rollers, Yoga Blocks, Aero Yoga Clothing Blankets, cloth Straps, Bolsters, Wheels	9-16
11.	Fitness and wellbeing equipment's	Health monitoring devices for overall health- Personal health monitor for heart health, Blood sugar monitoring device, Wireless blood pressure device, Smart watch to track heart function, Hot and cold therapy equipment, Massage therapy equipment, Ultrasound therapy equipment	18-20
12.	Taste kit -To test three different sensations- sweet salty and sour	Salt solution (%) -0.5, 0.8, 1.0, 1.2, 1.5, Sugar solution (%) - 0.05, 0.5, 0.7, 1.0, 1.2, Citric acid (%) - 0.02, 0.04, 0.1, 0.5, 1.0 Spoons, Bowls, Beakers, Plain distilled water	21
13.	Test kit to measure peroxide value in the oil	Reagents: Acetic acid-chloroform solution, Saturated potassium iodide solution, Sodium thiosulphate solution- 0.1 N, Starch solution (1%) Apparatus: Pipette 1ml capacity, Conical flask	25
14.	Test kit to measure acid value and free fatty acids in the oil	Sample of oil/fats namely any refined oil or hydrogenated fat. Reagents - ethyl alcohol (95%), phenolphthalein indicator solution, standard aqueous sodium or potassium hydroxide solution (0.1 N or 0.5 N), Pipette (10 ml), Conical flask	24
15.	Test kit to measure impurities in the oil	Sample of Oil/fat, Oven-electric, maintained at $100 \pm 1^\circ\text{C}$., Desiccator, Weighing balance, Filter paper	23
16.	Test kit to measure moisture content in the oil	Sample of oil/fat, Moisture dish-made of porcelain, silica, glass or aluminum, Oven-electric, maintained at $105 \pm 1^\circ\text{C}$., Desiccator Weighing balance	22

R) Suggested Learning Resources:

(a) Books:

S. No.	Titles	Author(s)	Publisher with ISBN
1.	Practical Applications in Sports Nutrition	Heather Hedrick Fink, Alan E. Mikesky	Jones & Bartlett Learning (2020) ISBN No: 978-1284181340
2.	Massage and Medical Gymnastics,	Lace, M. V.	London: J & A Churchill Ltd. ASIN: B000RY4YB0
3.	ACSM's Guidelines for Exercise Testing and Prescription	Gary Liguori	LWW; (2021) ISBN-13: 978-1975150198
4.	Essentials of Strength Training and Conditioning	Javair Gillett	Human Kinetics, (2021) ISBN-13: 978-1718210868
5.	Practical Applications in Sports Nutrition	Heather Hedrick Fink, Alan E. Mikesky	Jones & Bartlett Learning, (2017) ISBN-13: 978-1284101393
6.	Health Fitness Management	Mike Bates, Mike Spezzano, Guy Danhoff	Human Kinetics, (2019) ISBN-13: 978-1450412230
7.	Yoga for Every Body: A beginner's guide to the practice of yoga postures, breathing exercises and meditation	Luisa Ray, Angus Sutherland	Vital Life Books (2022) ISBN-13: 978-1739737009
8.	Science of Yoga: Understand the Anatomy and Physiology to Perfect Your Practice	Ann Swanson	DK Publisher, (2019) ISBN-13: 978-1465479358
9.	Mudras for Modern Living: 49 inspiring cards to boost your health, enhance your yoga and deepen your meditation Cards	Swami Saradananda	Watkins Publishing (2019) ISBN-13: 978-1786782786
10.	Principles and Methods of Adapted Physical Education & Recreation	Kristi Roth, Laurie Zittel, Jean Pyfer, David Auxter	Jones & Bartlett Learning, (2016) ISBN-13: 978-1284077810
11.	Adapted Physical Education and Sport Sixth Edition	Joseph P. Winnick, David L. Porretta	Human Kinetics, (2016) ISBN-13: 978-1492511533
12.	Counselling Skills in Applied Sport Psychology: Learning How to Counsel	Paul McCarthy, Zoe Moffat	Routledge, (2023) ISBN-13: 978-1032592589
13.	Basic Counselling Skills: A Helper's Manual	Richard Nelson Jones	Sage Publication 2012, New Delhi.

S. No.	Titles	Author(s)	Publisher with ISBN
14.	Advancements in Mental Skills Training (ISSP Key Issues in Sport and Exercise Psychology)	Maurizio Bertollo, Edson Filho, Peter Terry	Routledge, (2020) ISBN-13: 978-0367111588
15.	The Relaxation and Stress Reduction Workbook	Martha Davis, Elizabeth Robbins, Matthew McKay, Eshelman MSW	A New Harbinger Self-Help Workbook (2019)
16.	Patanjalis Yoga Sutras	Swami Vivekananda	Fingerprint Publishing (2023) Prakash Books India Pvt Ltd, New Delhi, ISBN-13: 978-9354407017

(b) Online Educational Resources:

1. https://onlinecourses.swyam2.ac.in/aic19_ed28/preview- introduction to Yoga and Applications of Yoga
2. https://onlinecourses.swyam2.ac.in/aic23_ge09/preview- Yoga for Creativity
3. https://onlinecourses.swyam2.ac.in/aic23_ge05/preview- Yoga for concentration
4. https://onlinecourses.swyam2.ac.in/aic23_ge06/preview- yoga for memory development
5. https://onlinecourses.nptel.ac.in/noc21_hs29/preview-Psychology of Stress, Health and Well-being
6. https://onlinecourses.swyam2.ac.in/nce19_sc04/preview- Food Nutrition for Healthy Living - Course – Swyam
7. <https://www.classcentral.com/course/swyam-fitness-management-17608>- Fitness Management from Swyam
8. https://onlinecourses.swyam2.ac.in/nce19_sc04/preview-Food Nutrition for Healthy Living
9. https://onlinecourses.swyam2.ac.in/cec21_ed02/preview Health Education and Recreation
10. https://onlinecourses.swyam2.ac.in/cec22_ed31/preview Sports Administration and Management

Note: Teachers are requested to check the creative commons license status/ financial implications of the suggested, online educational resources before use by the students.

(c) Others:

1. <https://www.yogajournal.com/yoga-101/philosophy/good-read>
2. <http://hdl.handle.net/123456789/38171>- Yoga Philosophy
3. <https://yoga.ayush.gov.in>

- A) **Course Code** : 2400110(T2400110)
- B) **Course Title** : Community/ Society Development
(AIML, AE, CSE, ELX (R), CHE, EE, ME, ME (Auto), MIE, FTS, CACDDM, FPP)
- C) **Pre- requisite Course(s)** :
- D) **Rationale** :

Community development is a process in which community members collectively generate solutions to common problems/concerns for improvement in the quality of life of the people. The course in community and society development is essential so that students can be prepared for taking up activities for the welfare and social well-being of the community and society around them. This course has been designed to develop requisite competencies and skills in students so that they can address social problems, develop sustainable solutions that are tailored to local needs and resources, engage with local communities and civil society organizations to promote people's participation in decision-making and accountability, and apply them to community development.

- E) **Course Outcomes (COs):** After the completion of the course, teachers are expected to ensure the accomplishment of following course outcomes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor and Affective) in classroom/laboratory/workshop/field/ industry.

After completion of the course, the students will be able to-

- CO-1** Identify the issues and problems faced by local communities/societies that can be addressed through community development schemes for sustainable development.
- CO-2** Prepare an action plan for an identified issue under community development scheme for a selected area.

- F) **Suggested Course Articulation Matrix (CAM):**

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	2	1	1	3	2	2		
CO-2	3	2	1	1	3	3	2		

Legend: High (3), Medium (2), Low (1) and No mapping (-)

* PSOs will be developed by the respective program coordinator at the institute level. As per the latest NBA guidelines, formulating PSOs is optional

G) Teaching & Learning Scheme:

Course Code	Course Title	Scheme of Study (Hours/Week)				
		Classroom Instruction (CI)		Notional Hours (TW/ Activities+ SL)	Total Hours (CI+TW/ Activities)	Total Credits (C)
		L	T			
2400110	Community/ Society Development	01	-	-	01	01

Legend:

CI: Classroom Instruction (Includes different instructional/implementation strategies i.e. Lecture (L), Tutorial (T), Case method, Demonstrations, Video demonstration, Problem based learning etc. to deliver theoretical concepts)

LI: Laboratory Instruction (Includes experiments/practical performances /problem-based experiences in laboratory, workshop, field or other locations using different instructional/Implementation strategies)

Notional Hours: Hours of engagement by learners, other than the contact hours for ensuring learning.

TW: Term Work (includes assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: Self Learning, MOOCs, spoken tutorials, online educational resources etc.

C: Credits = (1 x CI hours) + (0.5 x LI hours) + (0.5 x Notional hours)

Note: TW and SL have to be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome of learning.

H) Assessment Scheme:

Course Code	Course Title	Assessment Scheme (Marks)						Total Marks (TA+TWA+LA)
		Theory Assessment(TA)		Term Work & Self-Learning Assessment (TWA)		Lab Assessment (LA)		
		Progressive Theory Assessment (PTA)	End Theory Assessment (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2400110	Community/ Society Development	25	-	-	-	-	-	25

Legend:

PTA: Progressive Theory Assessment in class room (includes class test, mid-term test and quiz using online/offline modes)

PLA: Progressive Laboratory Assessment (includes process and product assessment using rating Scales and rubrics)

TWA: Term work & Self Learning Assessment (Includes assessment related to student performance in assignments, seminars, micro projects, industrial visits, self-learning, any other student activities etc.)

Note:

- ETA & ELA are to be carried out at the end of the term/ semester.
- Term Work is to be done by the students under the guidance of internal faculty but its assessment will be done **internally (40%)** as well as **externally (60%)**. Assessment related to planning and execution of Term Work activities like assignment, micro project, seminar and self-learning is to be done by internal faculty (Internal Assessment) whereas assessment of output/product/ presentation related to these activities will be carried out by external faculty/expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

I) **Course Curriculum Detailing:** This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Classroom Instruction (CI), Laboratory Instruction (LI), Term Work (TW) and Self Learning (SL). Students are expected to demonstrate the attainment of Theory Session Outcomes (TSOs) and Lab Session Outcomes (LSOs) leading to attainment of Course Outcomes (COs) upon the completion of the course. While curriculum detailing, NEP 2020 related reforms like Green skills, Sustainability, Multidisciplinary aspects, Society connect, Indian Knowledge System (IKS) and others must be integrated appropriately.

J) Theory Session Outcomes (TSOs) and Units: T2400110

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<p><i>TSO 1a.</i> Explain the concept of to Community/Society in Indian Context</p> <p><i>TSO 1b.</i> Explain the concept of Rural and Urban Society</p> <p><i>TSO 1c.</i> Differentiate between Rural and Urban Societies.</p> <p><i>TSO 1d.</i> Differentiate between Underdevelopment and development.</p> <p><i>TSO 1e.</i> Describe the different components of community development</p>	<p>Unit-1.0 Community and Society Development Framework</p> <p>1.1 Concept of Community/Society Development</p> <p>1.2 Difference between Rural and Urban Societies</p> <p>1.3 Characteristics of Underdevelopment and development</p> <p>1.4 Components of Community Development</p>	CO1
<p><i>TSO 2a.</i> Prepare a brief report on Community Development Programmes in India considering the given criteria</p> <p><i>TSO 2b.</i> Prepare a brief report on institutions engaged in community development programmes considering the given criteria</p> <p><i>TSO 2c.</i> Explain the framework of sustainable community development</p>	<p>Unit-2.0 Community Development Initiatives</p> <p>2.1 Community Development Programmes in India-Historical perspective</p> <p>2.2 Institutions Engaged in Community Development Programmes</p> <p>2.3 Contemporary Community Development Initiatives.</p> <p>2.4 Sustainable Community Development</p>	CO1, CO2
<p><i>TSO 3a.</i> Explain Role of Technical Institutions in Community/Society development.</p> <p><i>TSO 3b.</i> Summarise the activities undertaken by technical institutions under community development through polytechnic scheme</p> <p><i>TSO 3c.</i> Prepare a plan for undertaking project to support Unnat Bharat Abhiyan</p>	<p>Unit-3.0 Community Development Schemes</p> <p>3.1 Role of polytechnics in Community development.</p> <p>3.2 Scheme of Community Development through Polytechnics</p> <p>3.3 Unnat Bharat Abhiyan</p>	CO3, CO4

Note: One major TSO may require more than one Theory session/Period.

K) **Suggested Term Work/ Activities and Self Learning:** Some sample suggested assignments, micro project and other activities are mentioned here for reference.

a. **Assignments:** Specific assignments will be given to students for preparing report on community development programmes and institutions engaged in community development programmes.

b. **Micro Projects:**

1. Suggest solution for flowing water near a water source.
2. Identify locally available construction materials in a village.
3. Suggest a plan for disposal of solid waste in a village.
4. Prepare a plan for use of solar light equipments at streets and public places.

c. **Other Activities:**

1. Seminar Topics:
 - Issues of development for a village near to the institution.
 - Activities to be undertaken by the polytechnic in a village.
 - Characteristics of Development and underdevelopment.

2. Visits: Visit to nearby village may be arranged and students may be asked to prepare list of development activities in different Discipline.
3. Self-Learning Topics:
 - Community Development programmes in India after independence.
 - Schemes of GOI for Community /society Development.

L) Suggested Instructional/Implementation Strategies: Different Instructional/ Implementation Strategies may be appropriately selected, as per the requirement of the content/outcome. Some of them are Improved Lecture, Tutorial, Case Method, Group Discussion, Industrial visits, Industrial Training, Field Trips, Portfolio Based, Learning, Role Play, Live Demonstrations in Classrooms, Lab, Field Information and Communications Technology (ICT)Based Teaching Learning, Blended or flipped mode, Brainstorming, Expert Session, Video Clippings, Use of Open Educational Resources (OER), MOOCs etc.

M) List of Major Laboratory Equipment, Tools and Software:(Not Applicable)

N) Suggested Learning Resources:

(a) Books and Reports:

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Module on Rural Development: Indian Context	IGNOU, New Delhi	Published by IGNOU, New Delhi
2.	Module on Rural Development Programmes	IGNOU, New Delhi	Published by IGNOU, New Delhi
3.	Module on Rural development planning and management	IGNOU, New Delhi	Published by IGNOU, New Delhi
4.	India's Developing Villages	G R Madan	Allied Publishers, 1990
5.	Five year plans, Plan Documents, Policy and Reports	Planning Commission of India publications	Planning Commission of India
6.	Scheme of Community Development through Polytechnics	Ministry of Human Resource Development, Shastri Bhavan, New Delhi	Ministry of Human Resource Development, Govt of India, New Delhi

(b) Online Educational Resources:

1. https://www.google.co.in/books/edition/Rural_Development/hABduOX-X-gC?hl=en&gbpv=1&dq=rural+development+latest+books&printsec=frontcover
2. <https://www.india.gov.in/my-government/documents/plan-document>
3. <https://www.india.gov.in/website-planning-commission>

Note: Teachers are requested to check the creative commons license status/ financial implications of the suggested, online educational resources before use by the students.

(c) Others:

1. Project Reports Available in the office of CEO, Zila Parishad of the District.
2. Schemes of various departments of Bihar Government for Community/Social Development

- A) **Course Code** : **2400111(T2400111)**
 B) **Course Title** : Principles of Management
 (CE, AIML, AE, CHE, CSE, ME (Auto), FTS, MIE)
 C) **Pre- requisite Course(s)** :
 D) **Rationale** :

The course is designed to provide students with an overview of the management functions and its role in organizations and society. The course aims to provide students with the basic managerial knowledge necessary for engineering students in the world of work. The course focuses on providing students with analytical, developmental, managerial, and technical skills that relate to managerial positions in organizations. This course is an introduction to the critical management skills involved in planning, organizing, controlling, leading and decision making in an organization. It provides a framework for understanding issues involved in both managing and being managed, and it will help you to be a more effective contributor to organizations that you join.

- E) **Course Outcomes (COs):** After the completion of the course, teachers are expected to ensure the accomplishment of following course out comes by the learners. For this, the learners are expected to perform various activities related to three learning domains (Cognitive, Psychomotor and Affective) in classroom/laboratory/workshop/field/ industry.

After completion of the course, the students will be able to-

- CO-1** Design strategic plan for various types of organizations.
CO-2 Take decisions to handle world of work situations.
CO-3 Formulate organizational hierarchy for different situations.
CO-4 Identify various leadership styles.

- F) **Suggested Course Articulation Matrix (CAM):**

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes* (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	1	-	-	-	-	3	1		
CO-2	1	2	2	-	-	3	1		
CO-3	1	-	3	-	-	3	1		
CO-4	1	2	-	-	1	3	1		

Legend: High (3), Medium (2), Low (1) and No mapping (-)

* PSOs will be developed by the respective program coordinator at the institute level. As per the latest NBA guidelines, formulating PSOs is optional

G) Teaching & Learning Scheme:

Course Code	Course Title	Scheme of Study (Hours/Week)				
		Classroom Instruction (CI)		Notional Hours (TW/ Activities+ SL)	Total Hours (CI+TW/ Activities)	Total Credits (C)
		L	T			
2400111	Principles of Management	01	-	-	01	01

Legend:

CI: Classroom Instruction (Includes different instructional/implementation strategies i.e. Lecture(L), Tutorial(T), Case method, Demonstrations, Video demonstration, Problem based learning etc. to deliver theoretical concepts)

LI: Laboratory Instruction (Includes experiments/practical performances /problem-based experiences in laboratory, workshop, field or other locations using different instructional/Implementation strategies)

Notional Hours: Hours of engagement by learners, other than the contact hours for ensuring learning.

TW: Term Work (includes assignments, seminars, micro projects, industrial visits, any other student activities etc.)

SL: Self Learning, MOOCs, spoken tutorials, online educational resources etc.

C: Credits= (1 x CI hours) + (0.5 x LI hours) + (0.5 x Notional hours)

Note: TW and SL have to be planned by the teacher and performed by the learner under the continuous guidance and feedback of teacher to ensure outcome of learning.

H) Assessment Scheme:

Course Code	Course Title	Assessment Scheme (Marks)						Total Marks (TA+TWA+LA)
		Theory Assessment (TA)		Term Work & Self-Learning Assessment (TWA)		Lab Assessment (LA)		
		Progressive Theory Assessment (PTA)	End Theory Assessment (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2400111	Principles of Management	25	-	-	-	-	-	25

Legend:

PTA: Progressive Theory Assessment in class room (includes class test, mid-term test and quiz using online/offline modes)

PLA: Progressive Laboratory Assessment (includes process and product assessment using rating Scales and rubrics)

TWA: Term work & Self Learning Assessment (Includes assessment related to student performance in assignments, seminars, micro projects, industrial visits, self-learning, any other student activities etc.)

Note:

- ETA & ELA are to be carried out at the end of the term/ semester.
- Term Work is to be done by the students under the guidance of internal faculty but its assessment will be done **internally (40%)** as well as **externally (60%)**. Assessment related to planning and execution of Term Work activities like assignment, micro project, seminar and self-learning is to be done by internal faculty (Internal Assessment) whereas assessment of output/product/presentation related to these activities will be carried out by external faculty/expert (External Assessment). However, criteria of internal as well as external assessment may vary as per the requirement of respective course. For valid and reliable assessment, the internal faculty should prepare checklist & rubrics for these activities.

I) Course Curriculum Detailing: This course curriculum detailing depicts learning outcomes at course level and session level and their attainment by the students through Classroom Instruction (CI), Laboratory Instruction (LI), Term Work (TW) and Self Learning (SL). Students are expected to demonstrate the attainment of Theory Session Outcomes (TSOs) and Lab Session Outcomes (LSOs) leading to attainment of Course Outcomes (COs) upon the completion of the course. While curriculum detailing, NEP 2020 related reforms like Green skills, Sustainability,

Multidisciplinary aspects, Society connect, Indian Knowledge System (IKS) and others must be integrated appropriately.

J) Theory Session Outcomes (TSOs) and Units: T2400111

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<p><i>TSO 1a.</i> Explain the nature of management</p> <p><i>TSO 1b.</i> List the steps of evolution of management.</p> <p><i>TSO 1c.</i> Differentiate between different plans.</p> <p><i>TSO 1d.</i> Design Strategic plan for the given world of work situation.</p> <p><i>TSO 1e.</i> Take decisions in the given situation with justification.</p>	<p>Unit-1.0 Introduction to Management and Planning</p> <p>1.1 Nature and Purpose.</p> <p>1.2 Evolution of Management Thoughts.</p> <p>1.3 System approach to Management Process.</p> <p>1.4 Types of Plans: Missions or Purpose, Objective or Goals, Strategies, Policies, Procedures.</p> <p>1.5 Decision Making.</p>	CO1, CO2
<p><i>TSO 2a.</i> Differentiate formal and informal organizations.</p> <p><i>TSO 2b.</i> Identify the levels of hierarchy in the given organization.</p> <p><i>TSO 2c.</i> List the staffing principles.</p>	<p>Unit-2.0 Organizing and Staffing</p> <p>2.1 Nature of Organizing</p> <p>2.2 Formal and Informal Organization</p> <p>2.3 Principles of Organizing, Organizational Hierarchy, Authority, and Power.</p> <p>2.4 Staffing, Recruitment, Selection, Performance Appraisal.</p>	CO3
<p><i>TSO 3a.</i> Explain the theories of motivation</p> <p><i>TSO 3b.</i> Differentiate between leadership styles</p>	<p>Unit-3.0 Motivation and Leadership</p> <p>3.1 Motivation</p> <p>3.2 McGregor Theory of X and Y</p> <p>3.3 Maslow Hierarchy of Needs Theory</p> <p>3.4 Herzberg's Motivation- Hygiene Theory</p> <p>3.5 Leadership: Definition, Ingredients, Styles, theories</p>	CO4

Note: One major TSO may require more than one Theory session/Period.

K) Suggested Term Work and Self Learning: Some sample suggested assignments, micro project and other activities are mentioned here for reference.

a. Assignments: Questions/Problems/Numerical/Exercises to be provided by the course teacher in line with the targeted COs.

- Describe about adopting the systems approach in any organization.
- Write in brief about grapevine communication.
- Compare the traits Theory of X and Y as proposed by McGregor

b. Micro Projects:

- Apply Maslow's need hierarchy theory in workplace.

c. Other Activities:

1. Seminar Topics:

- Importance of management theories in the corporates.
- The hierarchy levels create smoothness in functioning of any organization.

- Leadership practices that are popular in current scenario.
2. Visits:
- Visit nearby corporate setup and report
 - Interview leaders in the organization and identify leadership style'
3. Self-Learning Topics:
- Herzberg's Motivation- Hygiene Theory
 - Leadership theories
 - Motivation for efficient productivity

L) Suggested Instructional/Implementation Strategies: Different Instructional/ Implementation Strategies may be appropriately selected, as per the requirement of the content/outcome. Some of them are Improved Lecture, Tutorial, Case Method, Group Discussion, Industrial visits, Industrial Training, Field Trips, Portfolio Based, Learning, Role Play, Live Demonstrations in Classrooms, Lab, Field Information and Communications Technology (ICT)Based Teaching Learning, Blended or flipped mode, Brainstorming, Expert Session, Video Clippings, Use of Open Educational Resources (OER), MOOCs etc.

M) List of Major Laboratory Equipment, Tools and Software: (Not Applicable)

N) Suggested Learning Resources:

(a) Books:

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Fundamentals of Management: Essential Concepts and Applications	Robbins S.P. and DeCenzo David A	Pearson Education
2.	Koontz Essentials of Management	Koontz	Tata McGraw Hill Latest Edition
4.	Principles and Practices of Management	Shejwalkar and Ghaneekar	Tata McGraw Hill Latest Edition
5.	Fundamentals of Management	Robbins and Dinzo	2002, Pearson India.
6.	Organization Theory, Structure, Design and Application	Stephen P. Robbins	PHI, New Delhi, 2005

(b) Online Educational Resources:

1. <https://www.coursera.org/learn/principles-of-management>
2. <https://alison.com/course/an-introduction-to-the-principles-of-management>
3. <https://www.udemy.com/course/principles-of-management-j/>
4. <https://lumenlearning.com/courses/principles-of-management/>
5. <https://www.mygreatlearning.com/academy/learn-for-free/courses/principles-of-management>
6. <https://onlineprogrammes.insead.edu/leadership-programme-for-senior-executives>
7. implilearn.com/general-management-certification-training-course?utm_source=google&utm_medium=cpc&utm_term
8. <https://discovery.ucl.ac.uk/id/eprint/10115948/1/Educational-Resource-Management.pdf>
9. <https://libraries.etsu.edu/research/guides/management/oer>
10. <https://www.cmu.edu/teaching/designteach/syllabus/checklist/learningresources.html>

Note: Teachers are requested to check the creative commons license status/ financial implications of the suggested, online educational recourses before use by the students.

(c) Others: -
