

Curriculum
of
Diploma Programme
in
Library and Information Science



State Board of Technical Education (SBTE)
Bihar

Semester – V

Teaching & Learning Scheme

Course Codes	Course Titles	Teaching & Learning Scheme (Hours/Week)					
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	Total Credits (C)
		L	T				
2441501	Management of Library & Info. Centre	02	01	-	02	05	04
2441502	Preservation and conservation of Library material	02	01	04	-	07	05
2441503	Information Sources and Services	02	01	-	02	05	04
2441504	Internet and Web resources	02	01	04	02	09	06
2441505	Adv. Library Classification	02	01	04	02	09	06
2400505	Entrepreneurship Development & Start-ups	-	-	04	02	06	03
2441506	Minor Project	-	-	-	02	02	02
Total		10	05	16	12	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 the teacher to ensure the outcome of learning.

Semester - V Assessment Scheme

Course Codes	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 (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2441501	Management of Library & Info. Centre	30	70	20	30			150
2441502	Preservation and conservation of Library material	30	70	-	-	20	30	150
2441503	Information Sources and Services	30	70	20	30	-	-	150
2441504	Internet and Web resources	30	70	20	30	20	30	200
2441505	Adv. Library Classification	30	70	20	30	20	30	200
2400505	Entrepreneurship Development & Start-ups	-	-	20	30	20	30	100
2441506	Minor Project		-	10	15	10	15	50
Total		150	350	110	165	90	135	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** : 2441501 (T2441501 /S2441501)
- B) **Course Title** : Management of Library & Info. Centre
- C) **Pre- requisite Course(s)** :
- D) **Rationale** :

Information Management system forms a part of information management which deals with all sorts of problems relatively to management at information technique of management, Man-power management and ways of motivating people for better management.

- E) **Course Outcomes (COs): After completion of the course, the students will be able to-**
- CO-1** Carry out various operations of Library and information centers.
- CO-2** Manage, Preserve and provide access to various print and Non-print information sources.
- CO-3** Comprehend the concept of Financial Management and human resource management.
- CO-4** Maintain the Library Statistics and Prepare annual Report.
- CO-5** Preservation technique of traditional and non-traditional resources.

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 Communication Skills	PO-3 Professionalism	PO-4 Problem-Solving	PO-5 Digital working skills	PO-6 Awareness of ethical practices	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	1	-	-	-	-	-		
CO-2	3	2	-	-	-	-	-		
CO-3	3	2	1	-	-	-	-		
CO-4	3	3	1	1	-	-	-		
CO-5	3	3	2	2	-	-	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)					
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	Total Credits (C)
		L	T				
2441501	Management of Library & Info. Centre	02	01	-	02	05	04

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= (1x CI hours) + (0.5x 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)	
2441501	Management of Library & Info. Centre	30	70	20	30	-	-	150

Legend:

- PTA: Progressive Theory Assessment in classroom (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, industrialists, 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, 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.

- 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: T2441501

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 1a.</i> Explain the meaning <i>TSO 1b.</i> Describe the scope of management <i>TSO 1c.</i> Explain various concepts of management <i>TSO 1d.</i> Describe the function of management <i>TSO 1e.</i> Write the special features of management <i>TSO 1f.</i> Explain POSDCORD IN Brief.	Unit-1.0 Management: Definition, Concepts, Function, Characteristics and Elements of management process. 1.1 Meaning of management 1.2 Definition of management 1.3 Scope of management 1.4 Various Concepts of management 1.5 Function of management 1.6 Special features of management 1.7 Elements of management process (POSCORB)	1&4
<i>TSO 2a.</i> Describe the principles of management <i>TSO 2b.</i> Explain scientific management <i>TSO 2c.</i> Describe the principles of scientific management <i>TSO 2d.</i> Describe the principles of management as enunciated by Henry Fayol <i>TSO 2e.</i> Explain general principles of scientific management. How for these applicable in the administration of Library and information centre	Unit-2.0 Principles of Scientific Management and their Application in Libraries and Information Centre 2.1 Principles of Library management 2.2 Scientific management 2.3 Definition of scientific management 2.4 Principles of Scientific management 2.5 Application of the Principles of the Scientific management of the libraries and information centre.	1&3
<i>TSO 3a.</i> Explain the meaning of TQM <i>TSO 3b.</i> Describe the elements of TQM <i>TSO 3c.</i> Describe the main limitations of TQM	Unit-3.0 Total Quality Management 3.1 TQM: Meaning and Definition 3.2 TQM: Elements 3.3 TQM: Technology used in Library and Information Centre 3.4 TQM; Barriers	1,2&5
<i>TSO 4a.</i> Explain library committee <i>TSO 4b.</i> Describe the need for library committee <i>TSO 4c.</i> Explain the Different types of library committee <i>TSO 4d.</i> Describe the power and function of library committee <i>TSO 4e.</i> Describe its Advantage and Disadvantages in detail	Unit-4.0 Library Committee 4.1 Types and function 4.2 Meaning and definition of library committee 4.3 Need for library committee 4.4 Power and function of Library committee 4.5 Advantage and Disadvantage of library committee	1,2&5
<i>TSO 5a.</i> Describe Library statistics and Annual report <i>TSO 5b.</i> Explain the types of library statistics <i>TSO 5c.</i> Describe the importance of library statistics <i>TSO 5d.</i> Explain the need and Annual report <i>TSO 5e.</i> Explain the features of Annual report <i>TSO 5f.</i> Explain the types of Annual report <i>TSO 5g.</i> Describe the advantages of Annual report	Unit-5.0 Library statistics and Annual report 5.1 Library Statistics: Sources 5.2 Library Statistics: Meaning and Definition 5.3 Library Statistics: Types 5.4 Library statistics: Importance 5.5 Annual report: meaning and definition 5.6 Annual report: Need 5.7 Annual report: Features 5.8 Annual report: Types 5.9 Annual report: Advantages	1,2&4

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO6a</i> Describe financial management in the Library <i>TSO6b</i> Describe Principles of financial management <i>TSO6c</i> Write the characteristics of financial management <i>TSO6d</i> Explain the importance of the financial function <i>TSO6e</i> Write Name of the financial sources of library <i>TSO6f</i> Describe the Budget <i>TSO6g</i> Write the characteristics of the Budget <i>TSO6h</i> Describe the Budgetary Control system	Unit-6.0 Financial management 6.1 Meaning and definition 6.2 Principles of Financial management 6.3 Characteristics of financial management 6.4 Importance of financial function 6.5 Sources of library finance 6.6 Budget: Meaning and Definition 6.7 Characteristics of Budget 6.8 Budgetary control system	1&5

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

K) Suggested Laboratory (Practical) / Tutorials and Outcomes:

L) Suggested Term Work and Self Learning: S2441501

1. Prepare a detailed project on different section of library and information centre and their function.
2. Prepare a model budget for your library or the library you are attached with.
3. Make a project on the element of management process(POSDCORB).
4. Make a detailed list of sources of income of the university library.
5. Make a detailed list of the head of expenditure of the college library.
6. Make a project on the qualification, experience, salary etc of the staff of your library or the library you are attached with.
7. Make a project on the general principle of scientific management.
8. Prepare a project on different types of budget.

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	15%	15%	15%	20%	15%	-	-
CO-2	25%	25%	25%	20%	25%	-	-
CO-3	10%	10%	10%	20%	10%	-	-
CO-4	20%	20%	20%	20%	20%	-	-

CO-5	30%	30%	30%	20%	30%	-	-
Total Marks	30	70	20	20	10	-	-
			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	Remember (R)	ETA (Marks) Understanding (U)	Application & above (A)
Unit-1.0 Management: Definition, Concepts, Function, Characteristics and Elements of management process.	8	1&4	10	4	4	3
Unit-2.0 Principles of Scientific Management and their Application in Libraries and Information Centre	10	1&3	8	3	4	4
Unit-3.0 Total Quality Management	6	1,2&5	10	3	4	3
Unit-4.0 Library Committee	6	1,2&5	8	3	4	2
Unit-5.0 Library statistics and Annual report	10	1,2&4	14	3	6	6
Unit-6.0 Financial management	10	1&5	20	4	6	4
Total	50	-	70	20	28	22

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): (Not Applicable)

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	Processor Intel Core i7 with Compilers and Programming Languages; RAM 32 GB, DDR3/DDR4, HDD 500 GB, OS Windows 10.	All
2.	Software	Library management Software(LMS), Office management software, Accounting management Software, Employee Management Software	1,2,3,4,5
3.	Printer	High-Speed Combo Printer	

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

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Principles of Library & Information Science	B.K Sharma Ashu Shokeen Jitendra Dubey	Y K Publication, Agra(U.P)
2.	Management Information System: Conceptual Foundations	Gordon B.Davis Margrethe Olson	McGraw-Hill Second Edition
3.	Library Personnel Management (Professional Librarian)	Herbers S white	Macmillan USA
4.	Personnel Management in College Libraries	S.P. Satarkar	Rawat Publication

(b) Online Educational Resources:

- <https://ignou.ac.in/>
- <https://www.inflibnet.ac.in/>
- <https://www.engranthalaya.nic.in/>
- <https://epgp.inflibnet.ac.in/>
- <https://nptel.ac.in/>
- <https://www.mooc.org/>
- <https://www.jstor.org/>
- <https://ndl.iitkgp.ac.in/>
- <https://www.nic.in/>
- <https://egyankosh.ac.in/>

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:

- A) **Course Code** : 2441502 (T2441502/P2441502)
- B) **Course Title** : Preservation and conservation of Library materials
- C) **Pre-requisite Course(s)** :
- D) **Rationale** :

One of the very important aspects of a Librarians obligation to the society is the preservation of the collection of reading materials in his custody in a good, healthy and usable condition. To enable his to fulfill his basic responsibility with the required competence, he has to have an adequate knowledge of the why and how of preservation and conservation. This subject explains the concept and its various implications. It also gives a general outline of the various preservation and conservation methods and techniques to create a general background for a more elaborate study.

E) **Course Outcomes (COs): After completion of the course, the students will be able to-**

- CO-1** Know the concept of preservation and conservation and the role of the librarian in doing so;
- CO-2** Plan the steps required for the preservation of various library materials
- CO-3** Understand the method used for effective preservation in the library
- CO-4** Get a clear insight into the techniques of conservation of restoration of Book materials
- CO-5** Understand the various types of binding and standards for Library Binding

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 Communication Skills	PO-3 Professionalism	PO-4 Problem Solving	PO-5 Digital working skills	PO-6 Awareness about ethical practices	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	1	-	1	2	1	-		
CO-2	3	2	-	-	-	-	-		
CO-3	3	2	1	-	2	1	-		
CO-4	3	3	1	1		-	-		
CO-5	3	3	2	2	2	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:

Board of Study	Course Code	Course Title	Scheme of Study (Hours/Week)					
			Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	Total Credits (C)
			L	T				
	2441502	Preservation and conservation of Library material	02	01	04	-	07	05

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= (1x CI hours) + (0.5x 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)						
		Theory Assessment(TA)		Term Work& Self-Learning Assessment(TWA)		LabAssessment(LA)		
		Progressive Theory Assessment (PTA)	End Theory Assessment (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2441502	Preservation and conservation of Library material	30	70	-	-	20	30	150

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: Teamwork & 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, 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.

- 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 the 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: T2441502

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 1a.</i> Explain the overview of Preservation and conservation <i>TSO 1b.</i> Describe the need and purpose of preservation and conservation	Unit-1.0 Preservation and conservation: overview 1.1 Preservation and conservation: Need and purpose 1.2 Historical development of writing materials	1&4
<i>TSO 2a.</i> Write in detail about the preservation of print material <i>TSO 2b.</i> How can we preserve and conserve books <i>TSO 2c.</i> Why preservation and conservation of periodicals is important <i>TSO 2d.</i> How can we preserve newspaper and pamphlet <i>TSO 2e.</i> Difference between preservation and conservation in the library	Unit-2.0 Preservation of Print Material 2.1 Books 2.2 Periodical 2.3 News 2.4 Pamphlet	1&3
<i>TSO 3a.</i> write in detail about preservation and conservation of Non-Print Material <i>TSO 3b.</i> Describe the significance of non-book materials in the library <i>TSO 3c.</i> Differences between Print and non-print material How can we preserve manuscript ,palm leaves, fiber ,floppies	Unit-3.0 Preservation of Non-Print Material 3.1 Palm leaves 3.2 Manuscript 3.3 Fibers 3.4 floppies	1,2&5
<i>TSO 4a.</i> write in detail about hazards to library materials and control measures <i>TSO 4b.</i> Describe Environmental factor of library materials <i>TSO 4c.</i> Get a clear insight into the techniques of conservation or restoration of book	Unit-4.0 Hazard to Library material and control measures 4.1 Environmental Factor (Temperature, Humidity, water, Light, Air, Pollution, Smoke, Dust etc.) 4.2 Chemical factors	1,2&5

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
materials <i>TSO 4d.</i> Understand the method used for effective preservation in the library (chemical factor)		
<i>TSO 5a.</i> Explain the different: Types of binding of Library materials <i>TSO 5b.</i> Explain binding materials and their varieties <i>TSO 5c.</i> Describe binding process <i>TSO 5d.</i> Write an essay on standards for Library binding	Unit-5.0 Binding 5.1 Types of Binding of Library materials 5.2 Binding materials and their varieties 5.3 Binding process 5.4 Standards for Library Binding	1,2&4

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

K) Suggested Laboratory (Practical) / Tutorials and Outcomes: P2441502

Outcomes	S. No.	Laboratory (Practical)/ Tutorials Titles	Relevant COs Number(s)
<i>LSO 1a</i> Plan the process of Preservation of print material <i>LSO 1b</i> Arrange the process of preservation of book and periodical <i>LSO 1c</i> Arrange the process of preservation of news pamphlet	1.	Unit -1 : Preservation of Print Material - Books - Periodical - Newspaper - Pamphlet	1&4
<i>LSO 2a</i> Prepare the process of Preservation of non-print Material. <i>LSO 2b</i> Write an essay on Palmleaves. <i>LSO 2c</i> Write an essay on the manuscript <i>LSO 2d</i> Write the process of preservation of Fibers & Floppies.	2.	Unit -2: Preservation of non-print Materials - Palm leaves - Manuscript - Fibers - Floppies	1&3
<i>LSO 3a</i> Describe Hazards of Library Material and Control Measures <i>LSO 3b</i> Prepare a list of hazards of library material by environmental factors and their	3.	Unit -3: Hazards of library material and control measures - Environmental Factors (temperature humidity water light Air pollution smoke dust etc)	1,2,5

control measures. <i>LSO 3c</i> Prepare a list of hazard of library material by chemical factors and their control measures.		- Chemical Factor	
<i>LSO 4a</i> Prepare a list of various process of binding <i>LSO 4b</i> Enumerate the standard of library binding	4.	Unit-4: Binding - Binding process standard for Library Binding - Standard for Library Binding	1&5
<i>LSO 5a</i> Repair deciation and historical development of writing material with emphasis on handmade and machine made material	5.	Unit -5: History of writing material - Hand made - Machine made	1,2&5

L) Suggested Term Work and Self-Learning:

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	15%	15%	15%	20%	15%	-	-
CO-2	25%	25%	25%	20%	25%	-	-
CO-3	10%	10%	10%	20%	10%	-	-
CO-4	20%	20%	20%	20%	20%	-	-
CO-5	30%	30%	30%	20%	30%	-	-
Total Marks	30	70	20	20	10	-	-
			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	Remember (R)	ETA (Marks) Understanding (U)	Application & above (A)
Unit -1 : Preservation of Print Material	10	1&4	11	4	4	3
Unit -2: Preservation of non-Print Materials	12	1&3	16	4	6	6
Unit-3.0 Preservation of Non-Print Material	10	1,2&5	10	3	4	3
Unit-4.0 Hazard to Library material and control measures	8	1,2&5	12	4	6	2
Unit-5.0 Binding	10	1,2&4	21	5	8	8
Total	50	-	70	20	28	22

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): (Not Applicable)**

- 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	Processor Intel Core i7 with RAM 32 GB, DDR3/DDR4, HDD 500 GB, OS Windows 10.	All
2.	Equipments	Binding Machine, Fumigation Chamber, Chemical Spray Machine, Photo Copier, Page Cutter/Shapper	1,2,3,4,5
3.	Printer	High Speed Combo Printer	

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

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Preservation and Conservation of Library Resources.	P.Balasubramanian	Y K Publishers,Agra
2.	Preservation and Conservation of Library Resources and Archives.	Nelly Balloffet Jenny Hille	Mc Graw Hills,London
3.	Practical Preservation and Conservation Strategies for Libraries.	Brian J.Baird Jody Brown	TMH,New Delhi
4.	Preservation and Conservation of Library Materials	Mahendra M.Patel	Cybertech

(b) Online Educational Resources:

- <https://ignou.ac.in/>
- <https://www.inflibnet.ac.in/>
- <https://www.engranthalaya.nic.in/>
- <https://epgp.inflibnet.ac.in/>
- <https://nptel.ac.in/>
- <https://www.mooc.org/>
- <https://www.jstor.org/>
- <https://ndl.iitkgp.ac.in/>
- <https://www.nic.in/>
- <https://egyankosh.ac.in/>

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:

- A) Course Code : 2441503 (T2441503/S2441503)
- B) Course Title : Information Sources and Services
- C) Pre- requisite Course(s) :
- D) Rationale :

The course on Information Sources and Services gives a broad view of Sources of information and their classifications. Information is the most important resources for any organizations. It is the age of information explosion. Everybody needs information. Major users of information are -Researchers, Scientists, Teachers, Professionals etc. So, the library professionals/ Staffs should be well acquainted with the information sources so as to guide the users towards the right sources of information.

E) Course Outcomes (COs):

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

- CO-1** Classify the sources of information.
- CO-2** Identify primary, secondary and tertiary sources.
- CO-3** Work with reference sources (National Bibliographies, Dictionaries, Encyclopedias, Geographical Sources etc.)
- CO-4** Deal with Electronic sources and web resources.
- CO-5** Answer the queries of users with the help of library resources and provide user awareness services (CAS and SDI)

F) Suggested Course Articulation Matrix (CAM):

Course Outcomes (COs)	Program Outcomes (POs)							Program Specific Outcomes* (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Communication Skills	PO-3 Professionalism	PO-4 Problem Solving	PO-5 Digital working skills	PO-6 Awareness about ethical practices	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	3	2	1	1	1	1	-	-
CO-2	3	2	2	2	1	-	1	-	-
CO-3	2	3	2	2	1	1	1	-	-
CO-4	2	2	2	1	2	1	1	-	-
CO-5	2	3	1	1	2	1	2	-	-

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

* PSOs will be developed by respective program 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)					
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+ SL)	Total Credits (C)
		L	T				
2441503	Information Sources and Services	02	01	-	02	05	04

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= (1x CI hours) + (0.5x 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)	
2441503	Information Sources and Services	30	70	20	30	-	-	150

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, 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.

- 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: T2441503**

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 1a.</i> Define Information Source <i>TSO 1b.</i> Differentiate between documentary and non-documentary sources. <i>TSO 1c.</i> Describe Primary Sources with examples. <i>TSO 1d.</i> Describe Secondary Sources. <i>TSO 1e.</i> Define and Describe Tertiary sources. <i>TSO 1f.</i> Compare Primary, Secondary and Tertiary Sources. <i>TSO 1g.</i> Write the Evaluation criteria for reference sources.	Unit-1.0 Information Sources and their classifications 1.1 Concept and definition of information sources. 1.2 Classifications of Information Sources- Documentary and Non-documentary 1.3 Documentary Sources- Primary, Secondary and Tertiary. 1.4 Non-documentary sources – Formal and Informal 1.5 Evaluation of Information Sources.	1&2
<i>TSO 2a.</i> Define Primary Sources. <i>TSO 2b.</i> Describe the Thesis. <i>TSO 2c.</i> Explain Conference Proceedings. <i>TSO 2d.</i> Differentiate between patents and Standards. <i>TSO 2e.</i> List out the Secondary Sources. <i>TSO 2f.</i> Describe various types of Dictionaries. <i>TSO 2g.</i> Define Encyclopedia and write their types with examples.	Unit-2.0 Important Primary and Secondary Sources 2.1 Primary Sources – Thesis, Conference Proceedings, Trade bulletins, Journals/ Periodicals, Patents and Standards etc. 2.2 Secondary Sources – Dictionary, Encyclopedia, Indexing and abstracting periodicals etc. 2.3 Classification of Dictionaries – General, Language and subject dictionaries. 2.4 Classification of Encyclopedia – General and specific Encyclopedia. 2.5 Evaluation Criteria for reference sources evaluation.	1,2&4
<i>TSO 3a.</i> Define National Bibliography. <i>TSO 3b.</i> Describe INB. <i>TSO 3c.</i> Write the Salient features of BNB. <i>TSO 3d.</i> Describe Yearbook in brief.	Unit-3.0 Other main Sources of Information 3.1 Bibliographical Sources – National Bibliographies (INB and BNB), Trade Bibliography. 3.2 Tertiary Sources - Yearbook and	1,2&3

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 3e.</i> Define and Describe Directory. <i>TSO 3f.</i> Explain Geographical Sources. <i>TSO 3g.</i> Differentiate between gazetteer and guide. <i>TSO 3h.</i> Describe Biographical Sources in detail.	directory, bibliography of bibliographies, Guide to literature. 3.3 Geographical Sources – Gazetteer, Guide, Maps, Globe etc. 3.4 Biographical Source	
<i>TSO 4a.</i> Describe Electronic sources. <i>TSO 4b.</i> Explain Electronic storage devices in brief. <i>TSO 4c.</i> Describe multimedia. <i>TSO 4d.</i> Explain Electronic database. <i>TSO 4e.</i> Differentiate between full text and bibliographic databases. <i>TSO 4f.</i> Explain Subject Gateways. <i>TSO 4g.</i> Write the main uses of internet.	Unit-4.0 Electronic and Web Resources 4.1- Electronic Sources – Magnetic Tape, Multimedia, CD-ROM etc. 4.2- Electronic Books and journals. 4.3- Electronic Database – Full text and bibliographic databases. 4.4- Web resources – Internet, Subject Gateways, bulletin board service, Chats and forums etc.	1,2&5
<i>TSO 5a.</i> Define Information Service. <i>TSO 5b.</i> Describe various Information service in brief. <i>TSO 5c.</i> Briefly describe Literature Search Service. <i>TSO 5d.</i> Explain Document Delivery Service. <i>TSO 5e.</i> Describe CAS. <i>TSO 5f.</i> Differentiate between CAS and SDI Services.	Unit-5.0 Reference and Information Service. 5.1- Information Service – Concept, definition and types. 5.2- Literature Search Service. 5.3- Translation and Documentation service. 5.4- Document delivery services. 5.5- Current Awareness Services (CAS) 5.6- SDI Service	1,3&4

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

K) Suggested Term Work and Self Learning: S2441503

Some sample suggested assignments, micro-projects 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. Write a dissertation on Information Sources.
2. Draw the classification of Information Sources given by Dr. Ranganathan.
3. Draw a tabular comparison between Primary, secondary and Tertiary Sources of Information.
4. Make a project on Reference documents available in your library.
5. Make a presentation on Geographical Sources.

6. Draw a detailed comparison between INB and BNB.
7. Make a project on Electronic Sources with suitable drawing.
8. Conduct a survey on the usages of web resources in your library/Institute.
9. Make a project on web resources.
10. Prepare a list of electronic resources available in your library by mentioning their working principle and description.
11. Make a project on various reference and information services provided by your library.
12. Write a dissertation on Specialized services, CAS and SDI given to the users.

c. Other Activities:

1. Seminar Topics:

- Conflict among experts about classification documents.
- Classification of electronic documents
- Changing technologies and the library.
- Limitations and challenges of the modern day libraries

2. Visits:

Visiting following places would provide students an opportunity to see the application of various types of Library. This will also help students to comprehend the career opportunities available in the field of Library and Information Science

- Visit to a Public Library.
- Visit to a University Library.
- Visit to a Library of Technical Institute.
- Visit to the National Library of India.
- Visit to a Library of National Importance.
- Visit to a Special Library.

- L) Suggested Course Evaluation Matrix:** The course teacher has to decide and use appropriate assessment strategy and its weight age 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	15%	15%	15%	20%	15%	-	-
CO-2	25%	25%	25%	20%	25%	-	-
CO-3	10%	10%	10%	20%	10%	-	-
CO-4	20%	20%	20%	20%	20%	-	-
CO-5	30%	30%	30%	20%	30%	-	-
Total Marks	30	70	20	20	10	-	-
			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 this comprises of questions related to achievement of each CO.

M) 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 Information Sources and their classifications	8	1&2	10	5	4	4
Unit-2.0 Important Primary and Secondary Sources	10	1,2&4	14	5	5	5
Unit-3.0 Other Main Sources of Information	12	1,2&3	20	7	5	4
Unit-4.0 Electronic and Web Resources	10	1,2&5	12	5	4	3
Unit-5.0 Reference and Information Service.	10	1,3&4	14	6	4	4
Total	50	-	70	28	22	20

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

N) 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.

O) Suggested Learning Resources:

(a) **Books:**

S. No.	Titles	Author(s)	Publisher
1.	Information Sources Services and System	Gurudev Singh	Prentice Hall of India New Delhi

2.	Information Sources, Systems and Services	Renu Arora	INFLIBNET Centre, Gandhinagar
3.	Management Information System	Gordon B.Davis	McGraw-Hill Publication
4	Library Management and computer	Vijay Singh Rawat	Priya publication New Delhi

(b) Online Educational Resources:

1. <https://ignou.ac.in/>
2. <https://www.inflibnet.ac.in/>
3. <https://www.engranthalaya.nic.in/>
4. <https://epgp.inflibnet.ac.in/>
5. <https://nptel.ac.in/>
6. <https://www.mooc.org/>
7. <https://www.jstor.org/>
8. <https://ndl.iitkgp.ac.in/>
9. <https://www.nic.in/>
10. <https://egyankosh.ac.in/>

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

- A) **Course Code** : 2441504 (T2441504/P2441504/S2441504)
- B) **Course Title** : Internet and Web resources
- C) **Pre-requisite Course(s)** :
- D) **Rationale** :

The introduction of digital information resources on Internet has revolutionized the academic world. Today the Internet has become one of the major sources of resources for academicians, researchers, teachers, and Library users at large. So Library Professionals must be conversant with the uses Of Internet -resources in providing library service. Presently many libraries in India have provisions to access electronic information in multiple ways.

- E) **Course Outcomes (COs):**
After completion of the course, the students will be able to:-

- CO-1** Work with digital and online resources.
- CO-2** Search & retrieve information from web resources and answer the query of users..
- CO-3** Carry out user study and fulfill the user's demand in the library.
- CO-4** Explain Metadata, its development process and metadata standards.
- CO-5** Deal with online databases and e-books and information networks.

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

Course Outcomes (COs)	Program Outcomes (POs)							Program Specific Outcomes* (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Communication Skills	PO-3 Professionalism	PO-4 Problem Solving	PO-5 Digital working skills	PO-6 Awareness about ethical practices	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	1	1	1	1	1	1		
CO-2	3	2	2	2	1	-	1		
CO-3	3	2	1	2	2	1	1		
CO-4	3	3	1	1	1	-	1		
CO-5	3	3	2	2	2	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)					
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	Total Credits (C)
		L	T				
2441504	Internet and Web resources	02	01	04	02	09	06

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= (1x CI hours) + (0.5x 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)		LabAssessment (LA)		
		Progressive Theory Assessment (PTA)	End Theory Assessment (ETA)	Internal	External	Progressive Lab Assessment (PLA)	End Laboratory Assessment (ELA)	
2441504	Internet and Web resources	30	70	20	30	20	30	200

Legend:

PTA: Progressive Theory Assessment in classroom (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, industrialists, 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, 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.

- 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: T2441504**

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 1a.</i> Describe Paperless library service in brief. <i>TSO 1b.</i> Define Metadata or met-document. <i>TSO 1c.</i> Write the metadata development process step wise. <i>TSO 1d.</i> List out various Metadata standards. <i>TSO 1e.</i> Explain DCMI in brief.	Unit-1.0 Introduction to Metadata 1.1 Meta data:- Introduction, definition, types 1.2 Meta data developing process 1.3 Meta data standards 1.4 Dublin core meta data initiative (DCMI)	1&4
<i>TSO 2a.</i> Define User study and write its purpose. <i>TSO 2b.</i> Write the need for user study in brief. <i>TSO 2c.</i> Describe various types of user study. <i>TSO 2d.</i> Briefly describe various method of user study. <i>TSO 2e.</i> Write the evaluation criteria for evaluating the User study. <i>TSO 2f.</i> Make a detailed plan to conduct User study in your Library.	Unit-2.0 Users - need and training 2.1 User study:- Introduction, need and purpose 2.2 Types of users study. 2.3 Methods and technique of user study. 2.4 Evaluation of user studies. 2.5 User profile and training. 2.6 User education need and purpose. 2.7 Users training program.	1&3
<i>TSO 3a.</i> Give a brief account of development of Internet. <i>TSO 3b.</i> Write the various usages of Internet. <i>TSO 3c.</i> Describe Web browsers and web services in brief. <i>TSO 3d.</i> Describe popular search engines in brief. <i>TSO 3e.</i> Briefly explain various web resources used in the Library. <i>TSO 3f.</i> Differentiate between full Text database and Bibliographic (Online) database. <i>TSO 3g.</i> Write a short note on e-books by special mention to e-book reading devices. <i>TSO 3h.</i> Describe Multimedia database in brief. <i>TSO 3i.</i> Explain Electronic thesis and dissertations. <i>TSO 3j.</i> Explain Phrase searching and word Streaming.	Unit-3.0 Internet and Web-searching. 3.1 Internet- Introduction ,definition 3.2 Use of Internet. 3.3 Web based search: web browsers and web services. 3.4 Web search engine: Introduction and types. 3.5 Web Resources: Various categories of web services. 3.6 Online database- Full Text & Bibliographic database. 3.7 Electronics books (e-books) 3.8 Multimedia database. 3.9 Electronics thesis and dissertations. 3.10 Basic search features in database: Boolean operators, phrase searching, Truncation & wild card, key word searching, word streaming etc.	1,2,&5
<i>TSO 4a.</i> Explain www in brief. <i>TSO 4b.</i> Write short note on (a) FTP (b) FAX (c) WAIS <i>TSO 4c.</i> Write the advantage of email over traditional mail.	Unit-4.0 Internet tools and Techniques 4.1 World Wide Web (WWW). 4.2 FTP (File Transfer Protocol)	1,2&5

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 4d.</i> Differentiate between Usenet and Telnet. <i>TSO 4e.</i> Briefly described various markup language i.e, HTML, XML etc. <i>TSO 4f.</i> Explain Audio and Video streaming in brief.	4.3 E-mail & Fax 4.4 WAIS 4.5 Usenet, news group Telnet, Remote login, IRC etc. 4.6 Markup language- HTML, DHTML, XML, SGML, VRML, etc. 4.7 Audio and Video Steaming. 4.8 Audio and Video conferencing	
<i>TSO 5a.</i> Write an essay on digital Library. <i>TSO 5b.</i> Differentiate between Digital and Virtual Libraries. <i>TSO 5c.</i> Explain digitization process in brief. <i>TSO 5d.</i> Write a notes on NDLI project. <i>TSO 5e.</i> Briefly describe digital Library software.	Unit-5.0 Digital Library 5.1 Digital Library: Introduction, Definition, features. 5.2 Digital and Virtual Libraries. 5.3 National Digital Library (NDLI) Initiative. 5.4 Digital Library Software: - Greenstone, D-space, Fedora etc.	1,2&4
<i>TSO 6a.</i> State the need for library networking. <i>TSO 6b.</i> Write a note on NICNET service. <i>TSO 6c.</i> Describe main activities and services of DELNET. <i>TSO 6d.</i> Describe the role on INFLIBNET in the up gradation and development of University Libraries. <i>TSO 6e.</i> Describe the "WORD CAT" service of OCLC.	Unit-6.0 Types of Resources (By Institutions) : 6.1 NICNET. 6.2 INFLIBNET. 6.3 DELNET. 6.4 ERNET. 6.5 OCLC.	1&5

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

K) Suggested Laboratory (Practical) / Tutorials and Outcomes: P2441504

Outcomes	S. No.	Laboratory (Practical)/ Tutorials Titles	Relevant COs Number(s)
<i>LSO 1.1.</i> Describe Metadata. <i>LSO 1.2.</i> Write Metadata development process-stepwise. <i>LSO 1.3.</i> Describe Metadata schemes. <i>LSO 1.4.</i> Differentiate between generic & Domain specific schemes. <i>LSO 1.5.</i> Draw and describe the elements of DCMI.	1.	Unit 1. Metadata (Preparation and Maintenance) 1.1- Familiarize with metadata. 1.2- Metadata Scheme-generic & domain specific. 1.3- Generic scheme: DCMI,MODS,TEI etc. 1.4- Domain Specific scheme: METS, VRA core. 1.5- Elements of doubling core metadata (DCMI)	1&4
<i>LSO 2.1.</i> Describe users study in brief. <i>LSO 2.2.</i> Make a depth study of previous studies/Report. <i>LSO 2.3.</i> Make a need survey of LIS 3 rd Sem Students. <i>LSO 2.4.</i> Observe and note down the behavior	2.	Unit-2.0 Users need Study 2.1- Familiarization with user study (Previous Studies) 2.2 -Users need survey. 2.3 -Observation of users/Behavior Studies. 2.4 -Information flow studies- analyzing data logs users search behavior, information	1&3

Outcomes	S. No.	Laboratory (Practical)/ Tutorials Titles	Relevant COs Number(s)
pattern of hours of study room. <i>LSO 2.5.</i> Carry out the information flow study of your library. <i>LSO 2.6.</i> Prepare a user study report of your library by maintaining average daily-student arrival, book issued, book return, library use time etc.		seeking patterns etc. 2.5- Preparing users study report	
<i>LSO 3.1.</i> Make a list of 10 popular search engines. <i>LSO 3.2.</i> Search 05 LIS journal by keyword searching. <i>LSO 3.3.</i> Make searching with Boolean operators. <i>LSO 3.4.</i> Differentiate between keyword and pure searching. <i>LSO 3.5.</i> Search bibliographic information on any 10 LIS books form internet. <i>LSO 3.6.</i> Send mail to all the LIS students about new arrivals. <i>LSO 3.7.</i> Write the procedure to current a DOC file into PDF file and vice versa (online).	3.	Unit-3.0 Internet and web searching 3.1 - familiarization with search engine. 3.2- search practice – Keywords Searching, Boolean Search, Phrase Searching etc. 3.3- Searching Bibliographic information- Author, title, Publisher address etc. 3.4- Sending e-mail 3.5 -Miscellaneous practice- File Transfer, File Conversion, uploading/downloading etc.	1,2&5
<i>LSO 4.1.</i> Write the step wise procedure to practice using Demo site of e-G4 Web version. <i>LSO 4.2.</i> Make a change in the user name of your library (the Admin modules) in e-Granthalaya. <i>LSO 4.3.</i> Practice with serial control module. <i>LSO 4.4.</i> Make an Annual Budget for your library with the help of e-Granthalaya. <i>LSO 4.5.</i> Do accessing of at least 10 books by copying its catalogue form Web OPAC. <i>LSO 4.6.</i> Generate various types of reports in e-Granthalaya.	4.	Unit-4.0 Hands on Practice (advanced):- e-Granthalaya (e-G4 web version) 4.1- Working with admin module. 4.2- Serials/serial control module. 4.3- Article Indexing 4.4- Budgets 4.5- Search/OPAC.	1&5
<i>LSO 5.1.</i> Make an assessment of your library to convert into digital library. <i>LSO 5.2.</i> Maintain the safety p..... to be taken for the storage of digital materials. <i>LSO 5.3.</i> Briefly describe the process of digitization. <i>LSO 5.4.</i> List out various e-book reading software devices. <i>LSO 5.5.</i> Briefly NDLI project. <i>LSO 5.6.</i> Do the user registration-Individual and Institutional. <i>LSO 5.7.</i> Describe search techniques of NDLI.	5.	Unit-5.0 Digital Library 5.1- Assessing requirement of digitalization. 5.2- Digital collection development. 5.3- Procurement and storage of digital materials. 5.4- e-books acquisition. 5.5- Using NDLI (National Digital Library of India) resources.	1,2&5

L) Suggested Term Work and Self Learning: S2441504

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

1. Calculate the flow rate of a fluid through a pipe with a given velocity profile using integration through open source software.

Micro Projects:

1. Prepare a detailed ` Project on metadata.
2. Conduct users study in your library and prepare the report.
3. Conduct a survey on your library users to know their demand pattern.
4. Prepare a project on information flow pattern analysis of your library.
5. Make a project on popular search engine.
6. Make a dissertation on the development of internet in the world.
7. Make a project on the models of e-granthalaya.
8. Prepare a model Budget for your library with the help of e-granthalaya.
9. Make a project on various reports that can be generated with the e-granthalaya.
10. Prepare and print barcode of 50 books in the e-granthalaya.
11. Make a project in the online resources.
12. Make a project on NDLI initiative.

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	15%	15%	15%	20%	15%	10%	15%
CO-2	25%	25%	25%	20%	25%	15%	15%
CO-3	10%	10%	10%	20%	10%	20%	20%
CO-4	20%	20%	20%	20%	20%	15%	10%
CO-5	30%	30%	30%	20%	30%	25%	15%
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 Introduction to Metadata	6	1&4	10	4	4	3
Unit-2.0 Users - need and training	8	1&3	8	3	4	4
Unit-3.0 Internet and Web-searching.	10	1,2&5	10	3	4	3
Unit-4.0 Internet tools and Techniques	8	1&5	8	3	4	2
Unit-5.0 Digital Library	6	1,2&5	14	3	6	6
Unit-6.0 Types of Resources (By Institutions)	12	1&5	20	4	6	4
Total	50	-	70	20	28	22

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

O) 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.

P) 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	Processor Intel Core i7 with RAM 32 GB, DDR3/DDR4, HDD 500 GB, OS Windows 10.	All
2.	Software	Library management Software, Digital Library Software, Barcode Generation Software, Employee Management Software	1,2,3,4,5
3.	Printer and Scanner	High Speed Combo Printer and Hand Held Scanner	

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

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Principles of Library & Information Science	B K Sharma Et.Al	Y K Publisher Agra
2.	Automation and Digitization software of Library: Open Source and Commercial	Dr. Mange Ram	Y K Publisher Agra
3.	Web Technologies in Library and Information Science	<u>Dr. Kailash D. Tandel Et.Al</u>	Write and Print Publications

(b) Online Educational Resources:

1. <https://ignou.ac.in/>
2. <https://www.inflibnet.ac.in/>
3. <https://www.engranthalaya.nic.in/>
4. <https://epgp.inflibnet.ac.in/>
5. <https://nptel.ac.in/>
6. <https://www.mooc.org/>
7. <https://www.jstor.org/>
8. <https://ndl.iitkgp.ac.in/>

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

- A) Course Code : 2441505 (T2441505/P2441505/S2441505)
- B) Course Title : Adv. Library Classification
- C) Pre- requisite Course(s) :
- D) Rationale :

Arrangement of book and Non-book materials according to subject, Author, time place etc is the basic need of a Library Classification of reading materials according to recognized devices have been incorporated in the classification Theory paper.

The methods are put in to practice in this chapter. For the IIIrd semester student's classification according to DDC 19th edition is practiced colon classification scheme is in range for V semester students.

E) **Course Outcomes (COs): After completion of the course, the students will be able to-**

- CO-1** Discuss the characteristics. Merits and demerits of different species of Library Classification Scheme.
- CO-2** Express the meaning, purpose, function, theories, and canons of library classification.
- CO-3** Elucidate various facts of Notation and Call Number.
- CO-4** Highlight Salient features of major classification schemes.
- CO-5** Review current trends in Library Classification.

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 Communication Skills	PO-3 Professionalism	PO-4 Problem Solving	PO-5 Digital working skills	PO-6 Awareness about ethical practices	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	1	-	-	-	1	-		
CO-2	3	2	-	-	1	-	-		
CO-3	3	2	1	-	-	2	-		
CO-4	3	3	1	1	1	-	-		
CO-5	3	3	2	2	-	2	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)					
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	Total Credits (C)
		L	T				
2441505	Advanced library classification	02	01	04	02	09	06

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= (1x CI hours) + (0.5x 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)	
2441505	Advanced library classification	30	70	20	30	20	30	200

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: Teamwork & 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, 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.

- 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: T2441505

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 1a.</i> Write in detail about the Species of classification <i>TSO 1b.</i> Explain the role of Dr. S.R. Ranganathan in development of different species of the library classification <i>TSO 1c.</i> Explain illogical scheme of classification <i>TSO 1d.</i> Explain logical scheme of classification <i>TSO 1e.</i> Describe Enumeration scheme of classification <i>TSO 1f.</i> Describe Analytico-synthetic	Unit-1.0 Species of classification scheme 1.1 Illogical scheme of classification 1.2 Logical scheme of classification 1.3 Enumerative scheme of classification 1.4 Analytico-synthetic	1&4
<i>TSO 2a.</i> Explain canons for idea plane <i>TSO 2b.</i> Explain canon for verbal plane <i>TSO 2c.</i> Explain canon for Notational Plane <i>TSO 2d.</i> Describe canons for mnemonics <i>TSO 2e.</i> Explain in brief three planes of library classification and its canon	Unit-2.0 Some important canon of classification 2.1 Canons for idea plane 2.2 Canons for verbal plane 2.3 Canons for Notational Plane 2.4 Canons for Mnemonics	1 & 3
<i>TSO 3a.</i> Write in detail about the Fundamental categories and Device and indicator digits <i>TSO 3b.</i> Explain fundamental categories <i>TSO 3c.</i> Write in detail about PMEST used in colon-classification (CC).Describe them with suitable example <i>TSO 3d.</i> Describe use and identification of different facet sequence with suitable example <i>TSO 3e.</i> Write in detail about device and indicator digits. <i>TSO 3f.</i> Describe how new subject are accommodates in CC with different devices <i>TSO 3g.</i> Explain Alphabetical devices with example <i>TSO 3h.</i> Explain chronological devices with suitable example <i>TSO 3i.</i> Explain subject device with example <i>TSO 3j.</i> Describe geographical devices and other devices. <i>TSO 3k.</i> Explain indicator digit in UDC	Unit-3.0 Fundamental categories and devices and predicator digits 3.1 Fundamental categories 3.2 Details study of PMEST 3.3 Use and identification of different facts in titles 3.4 Devices and indicator digits 3.5 Alphabetical, chronological, subject, Geographical devices etc. 3.6 Indicator digits in UDC	1,2,& 5
<i>TSO 4a.</i> Explain meaning and definition of call number. <i>TSO 4b.</i> Describe function of call number <i>TSO 4c.</i> Explain class number <i>TSO 4d.</i> Explain Author mark, merril, Biscoe, Jast and Browre <i>TSO 4e.</i> Wriute in detail about Ranganathan Book numbering system	Unit-4.0 Book Number 4.1 Call Number, meaning, definition and Function 4.2 Class number, Book number, collection number 4.3 Author mark, merit, Biscoe, jast and broure 4.4 Ranganathan Book numbering system.	1,2&5

Major Theory Session Outcomes (TSOs)	Units	Relevant COs Number(s)
<i>TSO 5a.</i> Explain the salient feature of colon classification 6 th ed <i>TSO 5b.</i> Explain the salient features of DDC 19 th ed. <i>TSO 5c.</i> Compare between colon classification and Dewey Decimal Classification	Unit-5.0 Salient feature of CCC and DDC 5.1 Salient feature of colon classification 6 th ed. 5.2 Salient features of DDC 19 th ed. 5.3 Comparative study of CC and DDC	1,2&4
<i>TSO 6a.</i> Explain the Critical analysis of the current trends in Library classification <i>TSO6b</i> Explain current trends in DDC <i>TSO6c</i> Explain current trends in CC <i>TSO6d</i> Explain the role of national and International Organization/Institution in development of Library classification	Unit-6.0 Current Trends in Library Classification 6.1 Current trends in DDC 6.2 Current trends in CC 6.3 Current trends in UDC 6.4 International conference and current trends of classification.	1 &5

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

K) Suggested Laboratory (Practical) / Tutorials and Outcomes: P2441505

Outcomes	S. No.	Laboratory (Practical)/ Tutorials Titles	Relevant COs Number(s)
<i>LSO 1.1.</i> Student will be acquainted with various devices as explained in CC and DDC. <i>LSO 1.2.</i> Understand the structure and organization of colon classification scheme. <i>LSO 1.3.</i> Understand the structure and organization of Dewey decimal classification scheme.	1.	Introducing various devices as enumerated in (a) Colon classification scheme (b) Dewey Decimal Classification scheme.	1&4
<i>LSO 2.1.</i> Construct number for complex and interdisciplinary titles according to colon classification 6 th edition. <i>LSO 2.2.</i> Construct number for complex and interdisciplinary titles according to DDC 19 th edition. <i>LSO 2.3.</i> Prepare and Practice Classification work according to DDC 19 th and CC 6 th edition.	2.	Practice at least 200 complex titles according to (a) Colon 6th ed. (b) DDC 19th ed.	1&3

Rationale:-

Arrangement of book and non-book materials according to subject, Author, time, place etc is the basic need of a library classification of reading materials according to recognized devices have been incorporated in the classification theory paper. The methods are put into practice in this chapter. For the IIIrd Semester students classification according to DDC 19th edition is practical. Colon Classification scheme is in range for Vth Semester students.

L) Suggested Term Work and Self Learning: S2441505

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

1. Classification of books and periodicals according to Colon 6th edition.
2. Classification of books and periodicals according to DDC 19th ed.
3. Classification of 50 titles of one's
4. Make a project on books and Non-Book material according to subject, author, Time, Place etc.

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	15%	15%	15%	20%	15%	-	-
CO-2	25%	25%	25%	20%	25%	-	-
CO-3	10%	10%	10%	20%	10%	-	-
CO-4	20%	20%	20%	20%	20%	-	-
CO-5	30%	30%	30%	20%	30%	-	-
Total Marks	30	70	20	20	10	-	-
			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 Species of classification scheme	10	1&4	11	4	4	3
Unit-2.0 Some important canon of classification	12	1&3	16	4	6	6
Unit-3.0 Fundamental categories and devices and predicator digits	8	1,2&5	10	3	4	3
Unit-4.0 Book Number	8	1,2&5	12	4	6	2
Unit-5.0 Salient feature of CCC and DDC	06	1,2&4	11	3	4	4
Unit-6.0 Current Trends in Library Classification	04	1&5	10	2	4	4
Total	48	-	70	20	28	22

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

- O) 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.

P) 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	Processor Intel Core i7 with RAM 32 GB, DDR3/DDR4, HDD 500 GB, OS Windows 10.	All
2.	Documents	DDC Volume 19, CC 6 th Edition, Sayer's List of Subject Heading	1,2,3,4,5
3.	Printer	High-Speed Duplex Printer	

Q) Suggested Learning Resources:

(a) Books:

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Knowledge Organization in Library and Science	S.M Rokade	Crescent Publishing corporation ,New Delhi-02(1 January 2017)
2.	Library classification	GD Bhargav	YK Publisher, Agra
3.	Granthalaya vargikarn	Dinesh Singh	Janki Prakasan
4.	Library classification	Krishna Kumar	Vikash Publishing House
5	Granthalaya Evam Suchna Vigyan	BK Sharma & Adarsh	YK Publisher, Agra

(b) Online Educational Resources:

- <https://ignou.ac.in/>
- <https://www.inflibnet.ac.in/>
- <https://www.engranthalaya.nic.in/>
- <https://epgp.inflibnet.ac.in/>
- <https://nptel.ac.in/>
- <https://www.mooc.org/>
- <https://www.jstor.org/>
- <https://ndl.iitkgp.ac.in/>
- <https://www.nic.in/>
- <https://egyankosh.ac.in/>

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:

- A) **A) Course Code** : 2400505(P2400505/S2400505)
- B) **Course Title** : Entrepreneurship Development & Start-ups
(Common for all Programmes)
- C) **Pre-requisite Course(s)** :
- D) **Rationale** :

A fast-growing economy provides ample opportunities for diploma engineers to succeed in entrepreneurship and start-ups. Start-up ecosystem and Entrepreneurship Development skills are fully developed providing many opportunities to the youths. Diploma engineers can be their own masters and provide jobs to others by starting their service-industry / assembly/ marketing/ consultancy/ manufacturing enterprises. Entrepreneurship requires a distinct set of skills that will be developed in this course. This course aims at developing competencies in the diploma engineer for becoming an intrapreneur, a successful entrepreneur, or a startup Co-Founder. After successfully completing this course students who develop the qualities of a successful entrepreneur can establish their own manufacturing industry/business startup or be self-employed. Those who prefer jobs can become intrapreneurs and share profits with their company.

- E) **Course Outcomes (COs):** After the completion of the course, teachers are expected to ensure the accomplishment of the 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 the classroom/laboratory/workshop/field/industry.

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

CO-1 Demonstrate traits of a successful intrapreneur/ entrepreneur/ start-up co-founder.

CO-2 Innovate products and services using creativity and innovation techniques.

CO-3 Manage critical resources from support institutions.

CO-4 Prepare sustainable small business plans.

- 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	3	2		
CO-2	3	2	3	-	2	3	2		
CO-3	3	3	3	-	2	3	2		
CO-4	3	3	-	-	2	3	2		

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)					
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	Total Credits (C)
		L	T				
2400505	Entrepreneurship Development & Startups	-	-	04	02	06	03

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)	
2400505	Entrepreneurship Development & Startups	-	-	20	30	20	30	100

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: (Not Applicable)

K) **Suggested Laboratory (Practical) Session Outcomes (LSOs) and List of Practical: P2400505**

Practical/Lab Session Outcomes (LSOs)		S. No.	Laboratory Experiment / Practical Titles	Relevant Cos Number(s)
LSO1.1	Identify the skills of a Successful Entrepreneur.	1.	Profile summary (about 500 words) of a successful entrepreneur indicating milestone achievements.	CO1
LSO1.2	Determine the charms of entrepreneurship and start-ups	2.	Discussion session with your institute's pass-out students who are successful entrepreneurs.	CO1
LSO1.3	Perform strength, weakness, opportunity, and threat analysis.	3.	SWOT analysis to arrive at your business idea of a product/service.	CO1
LSO1.4	Develop sales & marketing skills	4.	Sale of products to different customers	CO1
LSO2.1	Use creativity and put up a stall in a funfair and write a report of profit/loss.	5.	Creativity and Innovation in Business	CO2
LSO2.2	Innovate a point of sale for a product.	6.	Exhibition cum sale of products prepared out of waste.	CO2
LSO2.3	Generate different business opportunities.	7.	Business ideas (product/service) for intrapreneurial and entrepreneurial opportunities through brainstorming.	CO2
LSO1.5	Discover entrepreneurial potential.	8.	Self-assessment test to discover entrepreneurial traits.	CO1
LSO2.4	Classify domain-specific industries on business parameters.	9.	Survey industries (your stream), and grade them according to the level of scale of production, investment, turnover, and pollution to prepare a report on it.	CO2
LSO3.1	Identify entrepreneurship support institutions beneficial for the enterprise.	10.	Compile the information from the government agencies that will help you set up your business enterprise.	CO3
LSO3.2	Select a suitable funding scheme for the enterprise.	11.	Visit a bank / financial institution to enquire about various funding schemes for small-scale enterprises.	CO3
LSO3.3	Analyze the assessment procedure of bank loans.	12.	Collect loan application forms of nationalized banks / other financial institutions.	CO3
LSO3.4	Compute the financial needs of the business enterprise	13.	Compile the information from financial agencies that will help you set up your business enterprise.	CO3
LSO2.5	Select a business opportunity.	14.	Identify the business opportunity suitable for you.	CO2
LSO3.5	Carry-out market survey for a product.	15.	Market Survey for an Enterprise	CO3
LSO4.1	Find out rates of industrial lands and buildings in different industrial areas.	16.	Industrial land and building for Entrepreneurship.	CO4
LSO4.2	Craft a vision statement and enabling mission statements for your chosen enterprise.	17.	Vision statement and mission statement for a Startup.	CO4

Practical/Lab Session Outcomes (LSOs)		S. No.	Laboratory Experiment / Practical Titles	Relevant Cos Number(s)
LSO4.3	Select a suitable name and brand for the business enterprise.	18.	Branding for a product and a Company.	CO4
LSO4.4	Design a logo, letterhead, and visiting card for the business.	19.	Marketing communication for business.	CO4
LSO4.5	Prepare a techno-feasibility report	20.	A techno-feasibility report of a chosen product/service.	CO4
LSO4.6	Prepare a business plan for the enterprise.	21.	Business plan for the enterprise.	CO4
LSO4.7	Develop a website for the business	22.	Online Marketing for Business.	CO4
LSO3.6	Prepare a set of short-term, medium, and long-term goals for starting a chosen small-scale enterprise.	23.	Goal setting for an enterprise.	CO3
LSO3.7	Prepare an advertising campaign for your chosen product/service.	24.	Marketing management for an enterprise.	CO3
LSO3.8	Establish a supply chain network for the enterprise.	25.	Supply Chain Management	CO3
LSO3.9	Establish a Market intelligence mechanism.	26.	Market Intelligence for Entrepreneurship	CO3
LSO4.8	Compile information about various insurance schemes covering different risk factors.	27.	Risks in business	CO4
LSO4.9	Calculate the breakeven point for the business idea chosen by you.	28.	Breakeven point for a business	CO4

L) Suggested Term Work and Self-Learning: S2400505 Some sample suggested assignments, micro-projects, and other activities are mentioned here for reference.

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

- i. Prepare a list of successful Entrepreneurs in the city.
- ii. Prepare a list of startups in the city.
- iii. Prepare a list of the nearest incubators.
- iv. Prepare a list of Angel Investors and Venture Capitalists.
- i. Choose any product and study its supply chain.
- ii. Arrange brainstorming sessions for improvement of any product.
- iii. Choose any advertisement and analyse its good and bad points.
- iv. Visit industrial exhibitions, trade fairs and observe nitty-gritty of business.
- v. Study schemes for entrepreneurship promotion of any bank.

b. Micro Projects:

- i. Interview successful entrepreneurs and startup co-founders in the city and innovate their products/services, pricing, packaging, advertisements, propositions, etc.
- ii. Identify different entrepreneurship support institutions in the city.
- iii. Prepare a collage for specific entrepreneurship development institutions.
- iv. Conduct a market survey for a specific product idea.

c. Other Activities:

1. Seminar Topics:

- Charms of entrepreneurship.

- Challenges of entrepreneurship.
- Startup ecosystem in India.
- One district one product scheme
- Setting up of a business.
- Market study of specified business.
- Prepare a business plan for your chosen small scale enterprise.
- Business opportunity suitable for you.

2. **Visits:** Visit DIC, MSME, NSIC, NABARD, KVIC, IDBI, SBI, State Consultancy Organization, Industrial Development Center, Trade Exhibitions, Export Fairs, Trade Shows, etc.

Visit nearby tool room/industry and learn to prepare budget of that industry. Also learn to grow low scale business and marketing. Prepare list of advertisement to grow business.

3. Self-Learning Topics:

- Achievement Motivation.
- Need for achievement.
- Calculated risk.
- CSR (Corporate Social Responsibility)
- MSME Development Institute.
- Marketing their business.
- Growing their business.
- Financial management.
- Dealing with the pressure and stress

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	30%	30%	30%	-	-	30%	25%
CO-2	10%	10%	10%	33%	-	10%	25%
CO-3	30%	30%	30%	33%	50%	30%	25%
CO-4	30%	30%	30%	34%	50%	30%	25%
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: (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.	Profile summary (about 500 words) of a successful entrepreneur indicating milestone achievements.	CO1	50	40	10
2.	Discussion session with your institute's pass-out students who are successful entrepreneurs.	CO1	50	40	10
3.	SWOT analysis to arrive at your business idea of a product/service.	CO1	50	40	10
4.	Sale of products to different customers	CO1	50	40	10
5.	Creativity and Innovation in Business	CO2	50	40	10
6.	Exhibition cum sale of products prepared out of waste.	CO2	50	40	10
7.	Business ideas (product/service) for intrapreneurial and entrepreneurial opportunities through brainstorming.	CO2	50	40	10
8.	Self-assessment test to discover entrepreneurial traits.	CO1	50	40	10
9.	Survey industries (your stream), and grade them according to the level of scale of production, investment, turnover, and pollution to prepare a report on it.	CO2	50	40	10
10.	Compile the information from the government agencies that will help you set up your business enterprise.	CO3	50	40	10
11.	Visit a bank / financial institution to enquire about various funding schemes for small-scale enterprises.	CO3	50	40	10
12.	Collect loan application forms of nationalized banks / other financial institutions.	CO3	50	40	10
13.	Compile the information from financial agencies that will help you set up your business enterprise.	CO3	50	40	10
14.	Identify the business opportunity suitable for you.	CO2	50	40	10
15.	Market Survey for an Enterprise	CO3	50	40	10
16.	Industrial land and building for Entrepreneurship.	CO4	50	40	10
17.	Vision statement and mission statement for a Startup.	CO4	50	40	10
18.	Branding for a product and a Company.	CO4	50	40	10
19.	Marketing communication for business.	CO4	50	40	10
20.	A techno-feasibility report of a chosen product/service.	CO4	50	40	10
21.	Business plan for the enterprise.	CO4	50	40	10
22.	Online Marketing for Business.	CO4	50	40	10
23.	Goal setting for an enterprise.	CO3	50	40	10
24.	Marketing management for an enterprise.	CO3	50	40	10

S. No.	Laboratory Practical Titles	Relevant Cos Number (s)	PLA/ELA		
			Performance		Viva-Voce (%)
			PRA* (%)	PDA** (%)	
25.	Supply Chain Management	CO3	50	40	10
26.	Market Intelligence for Entrepreneurship	CO3	50	40	10
27.	Risks in business	CO4	50	40	10
28.	Breakeven point for a business	CO4	50	40	10

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: (Not Applicable)

R) Suggested Learning Resources:

(a) Books:

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
1.	Entrepreneurial Development	Khanka S.S. (2006)	S. Chand Publishing, 20068121918014,
2.	Un-Boxing Entrepreneurship Your self-help guide to setup a successful business	Dr. Nishith Dubey Aditya Vyas, AnnuSoman, AnupamSingh, CharulChaturvedi, Praveen Shukla	Indra Publishing House, 2023, ISBN- 978-93-93577-70-2
3.	Skill Development and Entrepreneurship in India	Rameshwari Pandya	Ingram 2016, 8177084186
4.	Production and Operations Management	SV Deshmukh, A K Chitale and Nishith, Rajaram Dubey,	Archers & Elevators Publishing House, Bangalore ISBN 9789386501197
5.	Entrepreneurship Development	Sapna Jarial	New India Publishing Agency- Nipa 2022, 9395319240
6.	The Entrepreneurial Instinct: How Everyone Has the Innate Ability to Start a Successful Small Business	Monica Mehta	Tata McGraw Hill Education, New Delhi, 2012, ISBN 978-0-07-179742-9
7.	The Learn Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses	Eric Ries	Penguin UK ISBN-978-0670921607

S. No.	Titles	Author(s)	Publisher and Edition with ISBN
8.	Entrepreneurship and Start-ups	Ekta Sharma	FPH
9.	The Innovator's Dilemma: The Revolutionary Book That Will Change the Way You Do Business	Clayton M. Christensen	Harvard business ISBN: 978-142219602

(b) Online Educational Resources:

1. Coir Board <http://coirboard.gov.in/>
2. National Institute for Micro, Small and Medium Enterprises (ni-msme) <https://www.nimsme.org/>
3. MSME / Udyam Registration <https://udyamregistration.gov.in/Government-India/Ministry-MSME-registration.htm>
4. CHAMPIONS <https://champions.gov.in/Government-India/Ministry-MSME-Portal-handholding/msme-problem-complaint-welcome.htm>
5. Prime Minister Employment Generation Programme and Other Credit Support Schemes <https://msme.gov.in/prime-minister-employment-generation-programme-and-other-credit-support-schemes>
6. Marketing Promotion Schemes <https://msme.gov.in/marketing-promotion-schemes>
7. Start-up India <https://www.startupindia.gov.in/>
8. DPIIT Recognition <https://www.startupindia.gov.in/content/sih/en/startup-scheme.html>
9. Startup India Seed Fund Scheme <https://seedfund.startupindia.gov.in/>
10. STARTUP INDIA INVESTOR CONNECT <https://investorconnect.startupindia.gov.in/>
11. Startup Funding <https://www.startupindia.gov.in/content/sih/en/funding.html>
12. Women Entrepreneurship in India https://www.startupindia.gov.in/content/sih/en/women_entrepreneurs.html
13. Incubators <https://www.startupindia.gov.in/content/sih/en/incubator-framework.html>
14. Start-up Mentors <https://www.startupindia.gov.in/content/sih/en/search.html?roles=Mentor&page=0>
15. NEN <https://nen.org/>
16. TIE <https://tie.org/>
17. MoE Innovation Cell <https://www.mic.gov.in/>
18. <https://youtu.be/8iKsZZYv90k>
19. <https://youtu.be/Tzzfd6168jk>
20. <https://youtu.be/9-O15gDqebg>

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: -

- A) **Course Code** : 2441506 (P2441506/S2441506)
- B) **Course Title** : Minor Project
- C) **Pre-requisite Course(s)** :
- D) **Rationale** :

Project work plays a very important role in engineering education in developing core technical skills, soft skills and a higher level of cognitive, psychomotor and affective domain skills. It encourages the critical thinking process in the students. Project work is normally done when students have acquired sufficient knowledge, skills and attitude and are able to integrate all these, entirely in a new situation or task to solve the problems of the industries/real world. Project work also develops many soft skills like confidence, communication skills, creative ability, inquisitiveness, learning to learn skills, lifelong learning skills, problem-solving skills, management skills, positive attitude, ethics etc.

In diploma programme of state of Bihar, minor project is being carried out at 5th semester where all aspects of project planning will be deal in detail.

- 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 a real-world problem in the form of a project to be developed.
- CO-2** Perform literature survey related to the identified area/problem.
- CO-3** Identify preliminary resource requirements (Equipment, Tools, Software, Manpower, Services)
- CO-4** Prepare project synopsis for the identified problem/project title within stipulated time period.

- 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 Communication Skills	PO-3 Professionalism	PO-4 Problem Solving	PO-5 Digital working skills	PO-6 Awareness about ethical practices	PO-7 Life Long Learning	PSO-1	PSO-2
CO-1	3	2	-	-	-	-	1		
CO-2	3	2	-	-	-	2	1		
CO-3	3	2	-	2	-	2	1		
CO-4	3	-	-	-	-	3	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)					
		Classroom Instruction (CI)		Lab Instruction (LI)	Notional Hours (TW+ SL)	Total Hours (CI+LI+TW+SL)	Total Credits (C)
		L	T				
2441506	Minor Project	-	-	02	02	04	02

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)	
2441506	Minor Project	-	-	10	15	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)

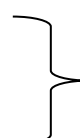
TWA: Term work & Self Learning Assessment (Includes assessment related to student performance in assignments, seminars, micro projects, industrial visits, self-learning, any other student activities etc.)

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) Suggested Implementation Plan of Minor Project:

Suggested implementation plan of minor project along with guidelines to teachers and students are mentioned below. For effective implementation of the project work in totality, different steps are to be carried out at different stages of the comprehensive project work.

- Project Planning.  **(Minor Project)**
 - Design, development and execution of the project.
 - Quality of report writing and presentation.
- 
- (Major Project)**

In this semester, under the minor project work, the students are guided and monitored to under take Project planning steps as mentioned below. While, the remaining steps of project implementation will be carried out during major project work in next the semester.

1.0 Guidelines to Students for Implementation of Minor Project.

Students are guided to undergo following steps under the minor project. Teacher are advised to guide the students on each and every step.

- 1.1 Identification of Area/Problem and Project Titles
- 1.2 Literature Survey
- 1.3 Identification of Outcomes of the Project
- 1.4 Identification of the recourses required.
- 1.5 Preparation of Synopsis
- 1.6 Presentation of Synopsis

1.1 Identification of Project Titles and Allocation Methodology:

Though the teachers and students, both are involved in identification of project titles, but the prime responsibility of identification of project titles goes to the respective teachers involved in implementing the course or programme. Teachers are fully aware of course/programme curriculum and they are also aware of related industrial problems hence, they try to explore the possibility of identification of project titles through these problems.

These small industrial problems in the form of project titles may be brought into the laboratories or workshop of institutions of a specific programme, which are equipped with all necessary facilities and resources to carry out the project work. These labs or workshop can function as miniature industry to solve the industrial problems in the form of simulated industrial projects. These projects may be integrated problem of courses or programme.

Criteria for Identification of Project Titles.

The identification of problem statement must be based on the following criteria:

- Environmental Considerations
- Simulated/Automated Industry's/ Improvised Process
- Application or Utility in the World of Work.
- Relevance to the Curriculum
- Mapping of Outcomes of Project with Pos and PSOs (if applicable)
- Feasibility of Implementation of the Project

1.2 Literature Survey:

Literature survey on the project title needs to be done through journals, websites, open source technologies available, discussion with the practicing engineers/industry persons and other relevant sources available.

1.3 Outcomes of the Project:

The project guide should ensure that the project outcomes are written properly as clear, specific, measurable and attainable statements. The outcomes formulated will decide the overall scope or course of action, depth and breadth of the project and implementation plan.

1.4 Identification of the recourses required:

Students under the guidance of teacher should try to identify all the resources required for the completion of the project like equipment, devices, experimental test rig, software, computer, persons to be contacted, suppliers, funds, availability of internal/external lab. The sample size has to be delimited and decided as per the time limit allotted, feasibility and many other considerations.

1.5 Preparation of Synopsis:

The students at the end of the semester are expected to submit 'Project Synopsis' after interaction with guide, as per the guidelines and format provided.

1.6 Presentation of Synopsis:

After developing the synopsis, student(s) should prepare a Power Point Presentation and present the same in front of examiner, guide and audience. Quality of presentation of data need to be ensured using the following criteria through Rubric-

- Clarity in Communication and Presentation
- Voice Audibility
- Use of Media and Methods
- Satisfying the Queries of Audience
- Attainment of Outcomes

2.0 Guidelines to Teachers for Implementation of the Minor Project:

The teacher alongwith the students should identify the different types of project title(s) as per need of the client as mentioned below:

- Prototype Development
- Experimentation Type
- Software Development Type
- Solving Industrial Problem Type
- Market Survey Type
- Feasibility Study Type
- Simulation Based
- Application Type
- Product Type
- Research Type
- Review Type

The project must be feasible. The guide allocated for each project are responsible for the quality of student's work, on different criteria including the synopsis writing which can be monitored on continual basis.

The guide must ensure that the feasibility of the project, the availability of resources/ software technology, sufficiency of time, finance and requirements during each and every step or activity of project work in advance.

J) Assessment of the Minor Project:

Continual Monitoring and feedback mechanism should be developed by the guide. An assessment plan on weekly progress/updates, action taken on different criteria and sub-criteria of the project work is suggested below. Path-breaking teachers who think out of the box are required to guide, monitor and evaluate the project work.

For objective, valid and reliable assessment, different tools of assessment such as a checklist, rating scale, assessment rubric, observation schedule, portfolio assessment, incidental records etc. need to be prepared. Even the students may be encouraged to adopt self-assessment techniques using the assessment rubrics.

The students need to be assessed continuously based on the below mentioned assessment criteria at project planning stage. The Project guide must prepare detailed rubric(s) for each criteria to have valid and reliable assessment.

Assessment Scheme for Minor Project

S. No.	Suggested Assessment Criteria	Suggested Weightage (%)
1.	Identification of Area/Problem Statement	10
2.	Literature Survey	20
3.	Formulation of Project Title	10
4.	Clarity in Formulation of Outcomes of The Project	10
5.	Preparation of Synopsis	30
6.	Presentation of Synopsis	20
	Total	100
