

**K L E F (Deemed to be University)**  
**Model Course Handout Template**

Course Title :  
Course Code :  
L-T-P-S Structure :  
Credits :  
Pre-requisite :  
Course Coordinator :  
Team of Instructors :  
Teaching Associates :

**Course Objective:**

**Course Rationale:**

**COURSE OUTCOMES (COs):**

CO No	Course Outcome (CO)	PO/PSO	Blooms Taxonomy Level (BTL)
CO1		PO2	2
CO2		PO3	4
CO3		PO5	5
CO4		PSO1	5
CO5 (Only for lab components)		PO6	3

**Commented [M1]:** The number of Course Outcomes is recommended to be 4 for courses that do not contain practical component and 5 for those courses with a practical component. Flexibility can be sought by the post-graduate courses in this regard.

**Commented [M2]:** BTL: Bloom's Taxonomy Levels from 1 to 6 must be used in the course handouts. No other alternatives must be used unless permitted by the Dean Academics Office in writing. Each CO must be mapped to a BTL indicating the highest cognitive level of knowledge possessed by a student after successful attainment of the outcome.

**Commented [M3]:** The terminology used in defining the Course Outcome must adhere to the BTL it is mapped to.

**COURSE OUTCOME INDICATORS (COIs):**

Course Outcome No.	Highest BTL	COI-1 (BTL1)	COI-2 (BTL2)	COI-3 (BTL3)	COI-4 (BTL4)	COI-5 (BTL5)	COI-6 (BTL6)
CO 1							
CO 2							
CO 3							
CO 4							
CO5							

**Commented [M4]:** Refer PO-CO Matrix from respective departments where mapping is already done, collect POs & PSOs

**Commented [M5]:** There can be multiple indicators for each CO where each indicator is mapped to a BTL equal to or lesser than the highest BTL to which the CO is mapped. It is mandatory to have at least one indicator for the highest BTL mapped to the CO. Each indicator (COI) mentioned in the course handout must be evaluated.

**Commented [M6]:** Give Indicators for CO5 also with BTL 3 or above.

**Commented [M7]:** Course Coordinator must obtain the list of POs & PSOs from their respective departments

**PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs/PSOs)**

**SYLLABUS:**  
**TEXT BOOKS:**

**Commented [M8]:** Put BoS Approved Syllabus. Deviations (if any) from BoS approved syllabus must be brought to the notice of BoS chairman & Dean Academics, After approval, revised handout should be submitted.

## REFERENCE BOOKS:

## WEB REFERENCES/MOOCs:

## COURSE DELIVERY PLAN:

Sess. No.	CO	COI	Topic (s)	Book No[CH No][Page No]	Teaching-Learning Methods	Evaluation Components
				R BOOK [1], CH 1.1-1.5, Page no 3-13		
				T BOOK [1], CH 4.2-4.5, Page no 123-133		
				W REF [1], Topic name.		

## SESSION WISE TEACHING – LEARNING PLAN

SESSION NUMBER: 01

Session Outcome: 1.  
2.  
3.

Time (min)	Topic	BTL	Teaching - Learning Methods	Active Learning Methods
10				
10				
10				
10				
5				
45 minutes Total Contact Session + 5 minutes for Attendance and Transition activities = 50 Minutes				

SESSION NUMBER: 02

Session Outcome: 1.  
2.  
3.

Time (min)	Topic	BTL	Teaching - Learning Methods	Active Learning Methods
10		-		
20		3		
10		1		
5		-		
45 minutes Total Contact Session + 5 minutes for Attendance and Transition activities = 50 Minutes				

SESSION NUMBER: 52

**Commented [M9]:** The following are some of the Teaching & Learning methods that can be incorporated in session wise teaching learning plan.

### Teacher-centered Learning Methods:

- 1.Lecture
- 2.Discussion
- 3.Demonstration method using a simulation or a tool
- 4.Reviewing
- 5.Questioning

### Learner-centered teaching & Learning methods:

- 1.**Active learning**, in which students solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm during class;
- 2.**Cooperative learning**, in which students work in teams on problems and projects under conditions that assure both positive interdependence and individual accountability; and
- 3.**Inductive teaching and learning**, in which students are first presented with challenges (questions or problems) and learn the course material in the context of addressing the challenges.

4.Inductive methods include *inquiry-based learning, case-based instruction, problem-based learning, project-based learning, discovery learning, and just-in-time teaching*.

It is important to integrate **authentic, reflective** and collaborative learning experiences when designing for student-centred learning.

**Commented [M10]:** The Number of sessions to be planned = Number of Lecture Sessions per Week X 13. The remaining sessions are for revision. Some hours can be used for content beyond syllabus (if any). **One revision hour before Test-I and Two to three Revision hours should be scheduled before Test-II.** Sessions must cover all COs in each CO

Example:

- If LTPS structure of a course is 2-2-2-0, the # sessions to be planned is 26.
- If LTPS structure of a course is 3-0-0-0, the # sessions to be planned is 39
- If LTPS structure of a course is 4-0-0-0, the # sessions to be planned is 52
- If LTPS structure of a course is 0-0-4-0, the # sessions to be planned is 26
- If LTPS structure of a course is 0-0-0-8, the # sessions to be planned is 52

**Commented [M11]: Session Plan:** The following are the guidelines to be followed while creating session plans

- Each session may be planned for a duration of 50mins (irrespective of the double hour or single hour scheduled in timetable).
- Session outcome must be a subset of the course outcome and must be in tune with the skills required to attain the course outcome.
- Sessions falling under each CO must incorporate topics taught at the highest BTL the CO is mapped to.
- Every session must incorporate atleast one active learning method which may or may not be part of the assessments.
- The number of sessions elaborated in the session plan must match those in the course delivery plan.

Session Outcome: 1.

2.

Time (min)	Topic	BTL	Teaching - Learning Methods	Active Learning Methods
10	Recap of the previous class	-		
10		2		
10		2		
10		2		
5	Summary & Conclusions	-		
45 minutes Total Contact Session + 5 minutes for Attendance and Transition activities = 50 Minutes				

## PRACTICAL COMPONENT

List of Experiments supposed to finish in Open Lab Sessions:

Lab session no	List of Experiments	CO-Mapping
1	Weekly Experiment/Exercise - I	CO1
2	Develop a set of programs to implement below sorting techniques and analyse its time complexities a. Insertion Sort b. Shell sort c. Selection Sort	CO1
3		CO5
4		CO2
5		CO2
6		CO5
7		CO3
8		CO3
9		CO5
10		CO4
11		CO4
12		CO5
13		CO5

## LIST OF TUTORIALS:

Tutorial session no	Topics	CO-Mapping

**Commented [M12]:** The following are some of the **Active Learning Methods** that can be incorporated in session wise teaching learning plan.

1. One Minute Paper
2. Group Discussion
3. Student-Created Ppt, Charts, Matrices, Flowcharts, Models
4. The Fish Bowl
5. Debate
6. Video Synthesis
7. Quiz/Test Questions
8. Brain Storming Sessions
9. Case Study
10. Shadowing
11. Leading Question
12. Puzzle, Enigma, Contradiction
13. Statement-Opinion-Summary
14. Think / Pair / Share
15. Peer Review
16. Just in Time Teaching
17. Statement-Opinion-Summary
18. Peer Survey
19. Focused Listing
20. Role-Playing
21. Student Field Work with Reflection
22. Infusing Humour into Class Sessions
23. Inviting Effective Guest Speakers

**Commented [M13]: Quality Parameters:**

1. All courses must provide access through LMS & NDL and confirm student registration into SWAYAM/NPTEL/Coursera/Edx/MOOCs
2. All courses to provide various online resources to all topics.
3. Topics having interactive video content, the evaluation should be included in ALMs.
4. Courses can identify to cater to one of these components.
  - a. Video animations
  - b. Gamification
  - c. Notes as an Intellectual property
  - d. Case studies
  - e. Virtual Labs
  - f. Group discussions
  - g. Seminars
  - h. Webinars with polls
  - i. Open book Tests
  - j. Peer evaluation
  - k. Evaluated discussion forums
5. Employ one of these **teaching pedagogies**.
  - a. Flipped Learning
  - b. Project Based Learning
  - c. Case study based learning
  - d. Empirical learning
  - e. Deep Learning

**WEEKLY HOMEWORK ASSIGNMENTS/ PROBLEM SETS/OPEN ENDED PROBLEM-SOLVING EXERCISES etc.**

Week	Assignment	Topic	Details	CO
2	A01	Orthographic Projections	Flat surfaces, Curved Surfaces, Complex Solid Models	CO1
4				
6				

## COURSE TIME TABLE

### Course Conduct

<b>Theory Lecture</b>	6 Sections   72 Students each   Class Room   Course Coordinator	3 Lectures per week
<b>Practical</b>	6 Sections   72 Students each   3 Batches   3 Instructors   77 Computers	1 P per week   each 2 hrs. 70 minutes Experiment   30 minutes Evaluation for 25 students per instructor

	Hour	1	2	3	4	5	6	7	8	9
Day	Component	9:00-9:50	9:50-10:40	11:00-11:50	11:50-12:40	12:40-1:30	1:30-2:20	2:20-3:10	3:20-4:10	4:10-5:00
Mon	Theory	S1, S11								
	Lab	S4, S13, S23								
Tue	Theory									
	Lab									
Wed	Theory									
	Lab									
Thu	Theory									
	Lab									
Fri	Theory									
	Lab									
Sat	Theory									
	Lab									

### REMEDIAL CLASSES:

**Supplement course handout**, which may perhaps include special lectures and discussions that would be planned, and schedule notified accordingly.

### SELF-LEARNING:

**Assignments to promote self-learning**, survey of contents from multiple sources.

S.No	Topics	CO	ALM	References/MOOCs

### DELIVERY DETAILS OF CONTENT BEYOND SYLLABUS:

Content beyond syllabus covered (if any) should be delivered to all students that would be planned, and schedule notified accordingly.

S.No	Advanced Topics, Additional Reading, Research papers and any	CO	POs & PSOs	ALM	References/MOOCs
1					

### EVALUATION PLAN: (may vary based on the course)

Evaluation Type	Evaluation Component	Weightage/Marks	Assessment Dates	Duration (Hours)	CO1	CO2	CO3	CO4	CO5

**Commented [M14]:** After Test – I, identify weak learners, provide supplement course handout. Student must maintain a minimum of 90% attendance to be eligible for appearing to In-Sem Exam II. Student list and Impact Observed report should be submitted to Dean Academics through proper channel.

**Slow Learners:** Students who perform very much below the class averages

**Commented [M15]:** Plan 10% of topics in self-learning mode with discussions, ALM's and Assessment happening in the class.

**Commented [M16]:** Plan Advanced Topics, Experiments, Additional Reading, Research papers in self-learning mode with ALM's and Assessment happening in the regular class or lab. Usually caters advanced learners. Identify Advanced learners. For Extra classes, schedule should be notified accordingly.

**Advanced Learners:** Students who perform very much better than the class averages

**Commented [M17]: Evaluation Plan:** The Evaluation(weightages) Table recommends marks distribution among various assessments for different LTPS structures. Course Coordinators are recommended to follow the marks distribution unless they have a justifiable concern for their specific course.

Any variations to these weightages must be brought to the notice of Dean Academics prior to documentation. The max marks awarded for continuous evaluation category may vary from course to course depending on the number of activities taken up.

Blooms Taxonomy Level										
In-Semester Summative Evaluation Total = 0 %	In-Sem Exam-I	Weightage		Test 1 Dates	2					
		Max Marks	50M			21	21			8
	In-Sem Exam -II	Weightage		Test 2 Dates	2					
		Max Marks	50M					21	21	8
	Surprise Quiz	Weightage			20 Min					
		Max Marks	40M			10	10	10	10	
	Lab Internal Tests	Weightage		Lab Internal Dates	1 ½					
		Max Marks	40M							40
Formative Evaluation Total = 0 %	Tutorial	Weightage								
		Max Marks	100M			25	25	25	25	
	ALMs	Weightage								
		Max Marks	100M			25	25	25	25	
	Home Assignment + Book	Weightage								
		Max Marks	40M			10	10	10	10	10
	Lab Continuous Evaluation	Weightage								
		Max Marks	100M							100
	Project/Skill	Weightage								
		Max Marks	100M			25	25	25	25	
	Attendance	Weightage								
		Max Marks	5M							
End-Semester Summative Evaluation Total = 0 %	SE Lab Expt.	Weightage		Lab External	1 ½					
		Max Marks	40M	Dates						25
	SE Lab Proj.	Weightage		Lab External	1 ½					
		Max Marks	40M	Dates						25
	Semester End Exam	Weightage		End Sem Exam Dates	3 hrs					
		Max Marks	100M			25	25	25	25	

**Commented [M18]:** Refer Theory Course Embedded with Laboratory Question Paper Template, where CO5 questions were asked.

In Part-A, Q. No. 5 from CO5 with BTL Level.  
In Part-C, Q. No. 10 from CO1+CO2+CO5 with Highest BTL Level.

**Commented [M19]:** Please note the following points for administration and quality improvements in teaching, learning & Assessing

- All courses must use LMS for marking attendance and lesson plans
- All course must use LMS to conduct and evaluate ALMs through Rubrics
- All courses must submit (Students to upload) the lab experiments results on LMS and the evaluation using rubrics to happen in LMS
- All tutorials evaluation to happen in LMS using Rubrics
- All project-based labs must submit the project draft and review documents in LMS and grading of these documents must happen on LMS using rubrics
- All course content to be uploaded on LMS Session/Topic wise
- Additional reading material /additional practice problems must be uploaded on LMS for every session/topic
- Each CO must have at least one surprise quiz with at least 15 questions each
- All courses to have 10% of topics in Self-Learning mode with ALMs and Assessment happening in class.

#### EVALUATION COMPONENTS (WEIGHTAGES) OF INTERNAL & EXTERNAL MARKS

Type of the Course	INTERNAL 60%		EXTERNAL 40%	
	Components	Weightage	Components	Weightage
	In Semester Exam-I		Exam	Viva
	In Semester Exam-II			Exercise

Purely Laboratory Based Course		Lab Weekly exercise		Report				
				External Review				
				Plus				
		Mini /Capstone Project		Paper publication	National			
Purely Theory Based Course		Attendance			or			
				International				
		In-Sem Exam-I		End Semester Exam				
		In-Sem Exam-II						
		ALMs						
		Surprise Quiz (min 2) (online)						
Theory Course Embedded with Laboratory		Home Assignment and Book. (Min. 5 Assignments etc.)						
		Attendance						
		Lab Part	In Semester Exam		Exam	Viva		
			Lab Weekly exercise			Exercise		
		Theory Part	In-Sem Exam-I					
			In-Sem Exam-II		End Semester Exam			
ALM (LTC, in-class Quiz, etc.)								
Home Assignment and Book. (Min. 3 Assignments etc.)								
Both		Attendance						
Skill based course (8hrs / week)		In Semester Exam-I		Review for Project				
		In Semester Exam-II		Report				
		Continuous Evaluation	Lab Exercise	Presentation				
			Project	Exercise				
		Attendance		Questions &Answers				
Technical Proficiency Course		In Semester Exam-I		End Semester Exam (online MCQ)				
		In Semester Exam-II						
		Continuous(weekly) Test (40 MCQ)		Viva				
		Attendance						

**Commented [M20]:** Refer Methodologies to be Adopted for conduct of Laboratory Classes document.

**Commented [M21]:** Guidelines for designing Lab Exercise/Cycle, Open Ended Problem-Solving Exercises and skilling courses exercises related to computer science and engineering. **Organization of the Laboratory.**

The laboratory framework includes a creative element but shifts the time-intensive aspects outside of the Two-Hour closed laboratory period. Within this structure, each laboratory includes three parts: Prelab, In-lab, and Postlab.

#### a.Prelab

The Prelab exercise is a homework assignment that links the lecture with the laboratory period - typically takes 2 hours to complete. The goal is to synthesize the information they learn in lecture with material from their textbook to produce a working piece of software. Prelab Students attending a two-hour closed laboratory are expected to make a good-faith effort to complete the Prelab exercise before coming to the lab. Their work need not be perfect, but their effort must be real (roughly 80 percent correct).

#### b.In-lab

The In-lab section takes place during the actual laboratory period. The First hour of the laboratory period can be used to resolve any problems the students might have experienced in completing the Prelab exercises. The intent is to give constructive feedback so that students leave the lab with working Prelab software - a significant accomplishment on their part. During the second hour, students complete the In-lab exercise to reinforce the concepts learned in the Prelab. Students leave the lab having received feedback on their Prelab and In-lab work.

#### c.Post lab

The last phase of each laboratory is a homework assignment that is done following the laboratory period. In the Postlab, students analyze the efficiency or utility of a given system call. Each Postlab exercise should take roughly 30 minutes to complete.

**Commented [M22]:** The Max Marks should be 40.

**Commented [M23]:** Refer/follow the rubrics for pure laboratory, Skilling, and Project courses.

### ATTENDANCE POLICY

Every student is expected to be responsible for regularity of his/her attendance in class rooms and laboratories, to appear in scheduled tests and examinations and fulfil all other tasks assigned to him/her in every course. For Promotion, a Minimum of 50% of internal marks must be obtained. In every course, student has to maintain a minimum of 85% attendance to be eligible for appearing in Semester end examination of the course, for cases of medical issues and other unavoidable circumstances the students will be condoned if their attendance is between 75% to 85% in every course, subjected to submission of medical certificates, medical case file and other needful documental proof to the concerned departments.

### DETENTION POLICY

In any course, a student has to maintain a minimum of 85% attendance and must secure a minimum of 40% marks in In-Semester Examinations to be eligible for appearing to the Semester End Examination, failing to fulfil these conditions will deem such student to have been detained in that course.

### PLAGIARISM POLICY

Use of unfair means in any of the evaluation components will be dealt with strictly, and the case will be reported to the examination committee.

**COURSE TEAM MEMBERS, CHAMBER CONSULTATION HOURS AND CHAMBER VENUE DETAILS:**

Each instructor will specify his / her chamber consultation hours during which the student can contact him / her in his / her chamber for consultation.

S.No.	Name of Faculty	Chamber Consultation Day (s)	Chamber Consultation Timings for each day	Chamber Consultation Room No:	Signature of Course faculty
1					
2					
3					
4					
5					

**GENERAL INSTRUCTIONS**

Students should come prepared for classes and carry the text book(s) or material(s) as prescribed by the Course Faculty to the class.

**NOTICES**

Most of the notices are available on the LMS platform.

All notices will be communicated through the institution email.

All notices concerning the course will be displayed on the respective Notice Boards.

**Signature of COURSE COORDINATOR:**

**Signature of Department Prof. Incharge Academics & Vetting Team Member:**

**HEAD OF DEPARTMENT:**

**Approval from: DEAN-ACADEMICS  
(Sign with Office Seal)**