National Institute of Technology Karnataka, Surathkal

Department of Computer Science and Engineering

Course Plan

(Part-A)

Name of the course: Computing Lab	Course Code: CS702 and CS801	No. of Credits (L-T-P): (0-0-3) 2
Year: M-Tech I year CSE and CSE-IS Semester: I	Course Type: Program Core	Academic Session: Odd semester 2024-25

A. Prerequisites (if any): NIL

B. Name and Contact Details of the Course Instructor: Prof. P. SANTHI THILAGAM

Room # 410,

CSE Dept, NITK-Surathkal.

0824-2473404 (O), santhi@nitk.edu.in (Email- ID)

C. Assessment Pattern (Use Bloom's taxonomy to design rubrics for evaluating students performance):

Level No.	Knowledge Level	Evaluation Component			Assessment (%)
		Continuous Assessment (20%)	MidSem Assessment (30 %)	Endsem Assessment (50%)	
K1	Remember	10	-	-	2
K2	Understand	25	10	-	8
K3	Apply	15	25	15	18
K4	Analyse	25	25	15	20
K5	Evaluate	-	-	10	5
K6	Create	25	40	60	47
Total					100

D. Assessment Process:

Evaluation Component	Assessment Frequency	Assessed by	Reviewed by
Continuous Assessment	Twice	Course Instructor and Teaching Assistants	DPGC
Midsem Assessment	Once (In the middle of the semester)	Course Instructor and Teaching Assistants	DPGC
Endsem Assessment	Once (At the end of the semester)	Course Instructor and Teaching Assistants	DPGC

E. Course Objectives:

Sl. No.	Course Objectives
1	Develop problem-solving skills for real-world issues.
2	Foster effective communication, collaboration, and time management through team-based projects.
3	Provide hands-on experience in applying modern tools to implement innovative solutions.

F. Course (Learning) Outcomes (COs):

COs	Course Outcomes
1	Conduct thorough problem analysis and design effective solutions.
2	Develop strong teamwork and project management skills.
3	Gain practical experience in the implementation and assessment of technical solutions.

G. Course Articulation Matrix:

(**Note:** Enter correlation levels 1, 2, or 3 as defined below: 1 - Slight (Low), 2 - Moderate (Medium) 3 - Substantial (High), and If there is no correlation, put "-"_)

COs	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
1	3	3	3	3	3	-	-	2	2	2	3	3	3	2
2	3	3	3	3	3	-	-	3	3	3	3	3	3	3
3	3	3	3	3	3	-	-	3	3	2	3	3	3	3
Avg.	3	3	3	3	3	-	-	2.67	2.67	2.33	3	3	3	2.67

H. Program Articulation Matrix:

(**Note:** Enter correlation levels 1, 2, or 3 as defined below: 1 - Slight (Low), 2 - Moderate (Medium) 3 - Substantial (High), and If there is no correlation, put "-")

PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2
3	3	3	3	3	-	-	3	3	2	2	3	3	3

I. Project Instructions

Project description	Students must undertake a real-time project within the domain of computer science or its applications. Preferably, this project should tackle any real-time issue. Nonetheless, students are also permitted to pursue on any problem under the supervision of a faculty member from the CSE department at NITK. Details regarding faculty members and their specializations can be accessed at the link: http://cse.nitk.ac.in/people.
General instructions	Students are expected to work in teams, ideally comprising **two** members. They are free to form teams with their peers from either CSE or CSE-IS. (**Due on 28th August 2024**).

Phases and deadlines of different phases	
Problem Identification	After team formation, the initial step is problem identification. Students are expected to identify a novel problem that addresses any real-time issue. They should perform an in-depth analysis of the problem, its significance, the targeted audience, and the data requirements. Subsequently, the teams are expected to design a tentative solution for the problem and explore different tools used to solve it. Finally, teams are expected to prepare an extended abstract (not more than 3 pages) typed in LaTeX, including the following details . (**Due on September 04, 2024**): 1. Title of the project 2. Description 3. Motivation 4. Problem Statement and Objectives (include faculty details if it is a research project) 5. Solution Design (Tentative) 6. Different Phases of the Project 7. Implementation Level Details (such as tools and programming languages to be used) 8. Expected Outcomes 9. Tentative Timelines 10. References The course instructor will review the extended abstracts and provide comments on the proposed projects. **Teams can proceed with their projects after receiving approval from the course instructor.**
Continuous Evaluation- 1	This phase of the initial evaluation aims to assess the student's understanding of the project. Teams are expected to have a finalized design of the proposed solution, and each team member should have an in-depth understanding of the module they are responsible for implementing. Teams should come prepared with a ten-minute presentation (PPT), which will be followed by a question and answer session (**Due on September 25, 2024**). **The breakdown for the Continuous Evaluation- 1 is as follows:** ● 50% for the presentation ● 50% for the question-and-answer session

Midsem Evaluation	This phase of evaluation is conducted to ensure that the teams are making progress toward achieving their defined objectives. Teams should come prepared for a code demonstration along with a PowerPoint presentation. Each team is allotted a 20-minute time slot for their presentation and code demonstration, followed by a question and answer session. Additionally, teams are expected to submit a report (typed in LaTeX) indicating the tasks they have accomplished and the tasks that are yet to be completed. **(Due on October 16, 2024)** **The breakdown for the Midsem Evaluation is as follows:** 20% for the report 25% for the presentation 15% for the question-and-answer session 40% for the code demonstration
Continuous Evaluation- 2	This phase of the evaluation ensures that teams are on track to complete their projects successfully. Teams should come prepared with a presentation and for the code demonstration. Each team is allotted a 15-minute time slot for their presentation and code demonstration, followed by a question and answer session. Additionally, teams are expected to place a slide that outlines their progress, including the tasks accomplished and the tasks remaining. **(Due on November 6, 2024)** **The breakdown for the Continuous Evaluation- 2 is as follows:** 35% for the presentation 15% for the question-and-answer session 50% for the code demonstration
Endsem Evaluation	This phase of the Endsem Evaluation is conducted to assess the final outcomes of the projects. Teams should come prepared with a presentation and a complete code demonstration. Each team is allotted a 20-minute time slot for their presentation and code demonstration, followed by a question and answer session. Additionally, teams are expected to submit a comprehensive final report (typed in LaTeX) that documents all aspects of the project, including the tasks accomplished, challenges faced, and overall results. The performance is evaluated based on the complexity of the project, its outcomes, and its usefulness. **(Due on November 20 , 2024)**.

	The breakdown for the Endsem Evaluation is as follows:
	• 10% for the report
	• 15% for the presentation
	• 15% for the question-and-answer session
	• 60% for the code demonstration
Sample Projects (for reference)	• AI-Powered virtual heritage tours
	• AI-driven cultural artifact recognition app
	• Website change detection
	• Video metadata generation
	• Medicine reminder app for elderly persons
	• Blockchain powered procurement system
	• Leveraging blockchain technology for the creation of electronic health records
	• Alumni tracking system
	• Job recommender system using LinkedIn data

J. List of Textbooks & Reference books, Online Course Resources:

1. Web Design with HTML, CSS, JavaScript, and JQuery Set Book by Jon Duckett

2. Professional JavaScript for Web Developers Book by Nicholas C. Zaka.

3. Learning PHP, MySQL, JavaScript, CSS & HTML5: A Step-by-Step Guide to Creating Dynamic Websites by Robin Nixon.

4. Full Stack JavaScript: Learn Backbone.js, Node.js and MongoDB. Copyright © 2015 by Azat Mardan.

5. **Online resources**

 (a) https://archive.nptel.ac.in/courses/106/106/106106156/ (A NPTEL course on modern application development)

 (b) https://www.youtube.com/watch?v=Jp0lPj2DQA&list=PLHXZ9OQGMqxcWWkx2DMnQmj5os2X5ZR73 (A YouTube tutorial on creating a LaTeX document)

Name and signature of course instructor with date:

Name and signature of DUGC/DPGC Secretary with date:

Name and signature of DUGC/DPGC Chairman with date:

Name and signature of HOD with date:

**** **END** ****