MCA I Semester 2

Subject Name: Software Project-2 **Subject Code:** MTCA26212

Type of course: Project

Prerequisite (if any):

- Programming Language
- Basic Concepts of Software Engineering
- RDBMS
- Any Web Technology (PHP OR Java Servlets OR .NET) for Web OR C++ for DirectX

List of Courses where this course will be prerequisite: NA

Rationale: The frameworks listed make developing a web application a lot quicker with a strong design in place.

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks		Practical Marks		Total
L	T	P	C	TEE	CAT	TEP	CAP	
0	0	4	2	-	-	30	20	50

CAT: Continuous Assessment Theory comprised of CA1 and CA2 **CA1:** Continuous Assessment (assignments/projects/open book tests/closed book tests **CA2:** Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems **TEE:** Term End Examination **TEP:** Term End Practical Exam (Performance and viva on practical skills learned in course) **CAP:** Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

Suggested Frameworks:
- Java/J2EE, Spring, Spring Boot and Hibernate
- .NET MVC or .NET Core and Entity framework
- DirectX

Guidelines:

- It is recommended that the team should be of 2-3 students.
- The project should be free from plagiarism of any kind.
- Project must have proper documentation.
- This may not be a live project.
- Coding standards should be followed meticulously. At the minimum, the code should be self-documented, modular, and should use the meaningful naming convention.
- It is advisable that object-oriented methodology is used with reusability of classes and code, etc.
- Student may be asked to write the code related to the project during examination.

Guidelines for Documentation:

- The project has to be well-documented in the form of a Project Report comprising of the relevant description of the project including design, data dictionary, source code, screenshots, etc.
- **Format:** The student has to submit hard copy of the Project report in below specified format:
  - Print out should be taken on both the side of page with single line spacing.
  - Use Times New Roman of size 10 for normal text.
  - A typical Table of content will be as follows.

TABLE OF CONTENTS

1. Introduction
   - 1.1. Proposed system and its Objectives
   - 1.2. Core Components
   - 1.3. Minimum and Maximum Software/Hardware requirements
   - 1.4. Advantages and Limitations of the Proposed System
2. Requirement Determination & Analysis
   - 2.1. Requirement Determination
   - 2.2. Targeted Users
3. System Design
   - 3.1. Use Case Diagram
   - 3.2. Class Diagram
   - 3.3. Activity Diagram
   - 3.4. Data Dictionary
4. Agile Documentation
   - 4.1. Agile Project Charter

4.2. Agile Roadmap / Schedule
4.3. Agile Project Plan
4.4. Agile User Story (Minimum 3 Tasks)
4.5. Agile Release Plan
4.6. Agile Sprint Backlog
4.7. Agile Test Plan
4.8. Earned-value and burn charts
5. Proposed Enhancements
6. Conclusion
7. Bibliography

Reference Books:

Sr. No.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	Spring and Hibernate	Santosh Kumar	Tata McGraw Hill Publishing Co.Ltd. ISBN: 978-0-07-007765-2	2010	-
2	Professional C # 7 and .NET Core 2.0	Christian Nagel	Wiley Eastern Ltd.ISBN: 9788126576067	2018	-
3	Spring Boot Up and Running	Mark Heckler	O Reilly ISBN: 978-1-098-10339-2	2021	1st Edition

Course Outcomes:

Sr. No.	CO Statement After learning this subject, students will be able to	Marks % Weightage
CO-1	Demonstrate a sound technical knowledge of their selected project topic	20
CO-2	Undertake problem identification, formulation and solution.	20
CO-3	Conduct a survey of several availabie literature in the preferred open source technology.	20
CO-4	Compare and contrast the several existing solutions.	20
CO-5	Demonstrate an ability to work in teams.	10
CO-6	To report and present the findings of the study conducted in the preferred domain.	10

Mapping with POs:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO-1	1	3	3	3	3	0	1	2	1	2	3	3
CO-2	1	3	3	3	3	1	1	2	1	2	3	3
CO-3	0	3	3	3	3	1	1	2	2	2	3	3
CO-4	2	3	3	3	3	0	1	2	2	2	3	3
CO-5	0	1	3	3	3	1	1	2	3	2	3	3
CO-6	1	3	3	3	3	0	1	2	2	2	3	3
Rationale*												

Rationale*: Explaining why it is matching this particular program outcome

List of Open learning website:

- https://meanjs.org/
- https://mern.js.org/
- https://www.mongodb.com/
- https://expressjs.com/
- https://angularjs.org/
- https://reactjs.org/
- https://nodejs.org/en/
- https://spring.io/projects/spring-boot
- https://dotnet.microsoft.com/learn/aspnet/what-is-aspnet-core
- https://learn.microsoft.com/en-us/windows/win32/directx
- https://github.com/Microsoft/DirectXTK/wiki/Getting-Started

List of Open Source Software:

- Spring Boot
- .NET Core
- Windows 7 and later versions have included DirectX. Required separately for versions earlier than Windows 7

List of Experiments: NA

Major Equipment Needed: NA