CS6611	CREATIVE AND INNOVATIVE PROJECT	L	T	P	EL	C
		0	0	4	3	3

OBJECTIVES:

- To identify the problem based on societal needs
- To interview people on societal problems that require computerization
- To suggest creative solutions to societal problems
- To explore possible alternative solutions
- To estimate risk and develop a prototype

The aim of this course is to encourage the students to identify projects that help in exploring variables that promote creativity and innovation. Each student is expected to choose a real life or socially relevant problem. At the end of the project, students should be familiar with the state of art in their respective fields. They would be able to apply the concepts learnt to relevant research problems or practical applications. This course is to motivate them to learn concepts, models, frameworks, and tools that engineering graduates' need in a world where creativity and innovation is fast becoming a pre-condition for competitive advantage.

OUTCOMES:

Upon completion of this course, the students will be able to

- Convert user requirements to a software architecture diagram
- Identify and specify the pre-processing necessary to solve a problem
- Suggest optimum solutions by comparing the different solutions from an algorithmic perspective
- Discover the research implications in any societal problem
- Design and use performance metrics to evaluate a designed system
- Perform SWOT and PESTEL Analysis

1. Internals

a. First Review
   i. Block Diagram of the proposed solution for a societal / creative problem
   ii. New Contribution in terms of modifications to existing algorithm or suggestion of new ones
   iii. Detailed Design of each module
   iv. Evaluation Metrics
   v. Test Cases

b. Second Review
   i. Implementation - Justifying pros and Cons
   ii. Coding - highlighting what has been reused and what is being written

c. Third Review
   i. Test Runs
   ii. Performance Evaluation based on Metrics
   iii. Project Documentation

2. Externals

- Presentation, Viva-Voce, Report submission.

OUTCOMES:

Upon completion of the course, the students will be able to

- Assess the needs of the society
- Describe the background of the problem
- Formulate a problem
- Perform SWOT and PESTEL Analysis

- Frame a policy
- Predict business opportunity
- Design the prototype
- Gain knowledge on system implications.

MA6201 LINEAR ALGEBRA	L	T	P	EL	TOTAL	CREDITS
	3	1	0	3		5

OBJECTIVES:

- To learn to analyze a linear system of equations
- To study the properties of a linear transformation
- To understand the process of orthogonalization
- To learn to solve linear equations using different methods
- To understand the applications of linear algebra in engineering

MODULE I	L	T	P	EL
	5	1	-	3

Vector spaces – Subspaces – Linear combinations and linear system of equations

SUGGESTED ACTIVITIES :

- Problem solving sessions

SUGGESTED EVALUATION METHODS:

- Tutorial problems
- Assignment problems
- Quizzes

MODULE II	L	T	P	EL
	5	1	-	3

Linear independence and Linear dependence – Basis and Dimension

SUGGESTED ACTIVITIES :

- Problem solving sessions
- Applications in real life problems

SUGGESTED EVALUATION METHODS:

- Tutorial problems
- Assignment problems
- Quizzes

MODULE III	L	T	P	EL
	5	1	-	3

Linear Transformation – Null space, Range space - Dimension theorem - Matrix representations of Linear Transformations

SUGGESTED ACTIVITIES :

- Problem solving sessions

SUGGESTED EVALUATION METHODS:

- Tutorial problems
- Assignment problems
- Quizzes

MODULE IV	L	T	P	EL
	5	1	-	3

Eigenvalues and Eigenvectors of a linear transformation – Diagonalization of linear transformations – Application of diagonalization in a linear system of differential equations