

Mechanical Engineering Department

Academic Year – 2020-2021	Class: Third Year
Semester – II	Date : 29/05/2021 TO 12/06/2021
CO1,CO2,CO4,CO5,CO6	PO1,PO5,PO9,PO12

Innovative Teaching Methods

Title of Innovation method/activity: Project Based Learning

- 1. Name of Faculty: Mr.D.D.Kulkarni
- 2. Subject: Numerical Methods and optimization
- 3. Objective of Method:

1. Make the students familiar with basic concepts and techniques of Matlab programming.

2. Develop an ability to write programs in Scilab and GNU octave for problem solving

4. Topic Covered through Activity:

Roots of equation, Simultaneous equation, Ordinary Differential Equations, Curve Fitting and Regression Analysis, Numerical Integration

5. Description of method with Benefits (8 – 10 lines):

Students work on a project over an extended period of time that engages them in solving a problem. They demonstrate their knowledge and skills by creating a public product or presentation for a real audience.

As a result, students develop deep content knowledge as well as critical thinking, collaboration, creativity, and communication skills. Project Based Learning unleashes a contagious, creative energy among students and teachers.

The method:

1. An assigned task /activity is completed by a single students.

- 2. When student finish their project, the teacher checks each student's final work.
- 3. Teacher will check whether code is running completely /partially /some errors present.
- 4. Teacher take oral to check student has understood the concept of project.

Roles and Responsibilities

Teacher

- Provide the Introduction to the entire topic.
- Aware the student about the length, Breadth, Depth of Topic
- Provide the Study Material and appropriate guide lines at every stage
- Remain available all the time during all stages of process.
- Prepare assessment methodology.

• Student

- Go through all the material provided on particular topic
- Once topic assigned understand and gain expertise on topic through collaboration.
- Actively participate and contribute by means of discussion, hand-out

6. Assessment Tools & Rubrics:

1. Content Knowledge [3 Mark]

 \Box Demonstrate knowledge by answering all questions with explanation and elaboration.

2. Code Readability [3 Mark]

□ All Required comments are present.

□ The program is correctly indented and identifiers are selected

3. Individual Work [2 Mark]

 \Box Everyone is fully engaged with effective an idea.

4. Delivery [2 Mark]

□ The program was delivered on time

Criteria	Excellent -3	Good -2	Average-1
Content Knowledge	Demonstrate	Is at ease with	Student answers
_	knowledge by	expected answer to all	partially. Student is
	answering all	questions without	able to answer only
	questions with	elaboration.	rudimentary question
	explanation and		
	elaboration.		
Code Readability	All Required	Some required	Program is minimally
	comments are present,	comments are	commented; some
	the program is	missing, or identifiers	identifiers are
	correctly indented and	are inappropriate or	inappropriate or
	identifiers are selected	statements are not	inconsistent
		correctly indented	indentation.
Team Work	Everyone is fully	Some people were	No cooperation.
	engaged with	cooperating, but some	Team members did
	effective exchange of	people were not.	their own thing
	idea.	One person did all the	
		work.	
Delivery `	The program was	The program was	The code was within
	delivered on time	delivered within a	2 weeks of the due
		week of the due date	date

7. Evaluation Sheet

Roll No.	Name of Students	Marks	Software used
81	MOGAL MADHURA AJAY	8	GNU octave
82	MORE BHUSHAN NAMDEV	7.6	GNU octave
85	NAIR ABHISHEK AJITHKUMAR	8	GNU octave
86	NAKIL SANKET DATTATRAY	7.6	GNU octave
88	PACHPUTE ATHARVA RUPESH	8	GNU octave
89	PAGAR AJINKYA DILIP	7.6	GNU octave
94	PATIL KAMESH JITENDRA	8	GNU octave
95	PATIL MAYUR VASUDEO	7.6	GNU octave
96	PATIL RAJVARDHAN SUNIL	8	GNU octave
99	PATIL SAURABH CHHOTU	7.6	GNU octave
100	PATIL SHUBHAM KIRAN	8	GNU octave
101	PATIL SOHAM ARUN	5.2	Scilab
102	PATIL VAIBHAVI SURESH	8.4	GNU octave

103	PATIL VISHESH BHAUSAHEB	8	GNU octave
105	PAWAR VAIBHAV SANJAY	8.8	GNU octave
107	PUND KARAN KAILAS	8	GNU octave
110	RANADE ADITYA SHIVAJI	8.8	GNU octave
111	RAVTALE NILESH PRALHAD	8.4	GNU octave
112	ROTE PRATIK RAOSAHEB	8	GNU octave
113	SALUNKE DARSHAN PRAMOD	8	Scilab
114	SALUNKE YASHWANT DEVIDAS	4.8	GNU octave
115	SANAP GAURAV SHARAD	8	GNU octave
116	SANGALE VIVEK RAMDAS	8.4	GNU octave
117	SAVALE AVINASH RAGHUNATH	8	Scilab
118	SAWANT RISHIKESH PRAKASH	8.4	GNU octave
120	SHINDE HARSH SUNIL	8	Scilab
122	SHINDE KARAN SANDEEP	8	GNU octave
123	SHINDE ROHIT RAJU	8.4	GNU octave
125	SHINDE UJWALA MAHESH	8	GNU octave
128	SHIRSATH PRIYANKA DHONDIRAM	8	GNU octave
131	THAKARE ABHISHEK RAMESH	8	GNU octave
132	THAKARE ANJALI NANDAKUMAR	8	GNU octave
133	THAKUR ADARSH SANJAY	7.6	GNU octave
135	THETE VINAY RAJENDRA	7.6	GNU octave
136	THOK NIKITA KAILAS	5.2	Scilab
137	TONGARE OMKAR KAILAS	8	GNU octave
143	ZOPE AKSHAY SANJAY	8	GNU octave
144	MUNDANE HARSHAL SUKHDEV	8	GNU octave
146	PATIL SAMEER SANJAY	8	GNU octave
151	SHINDE YUGANDHAR RAVINDRA	7.2	GNU octave
152	TAKATE DHIRAJ MANIK	7.6	GNU octave

8. Impact Analysis

SN	3- High/Excellent	2- Good	1-Average
1. Do you find	7	29	27
Methodology			
Helpful?			
2. Does this helps for	9	31	23
building a good team			
3.Were you able to	8	31	24
apply the concept of			
Matlab while			
implementing			
project?			
4. Does the content	25	27	11
covered are relevant			
5. Would You Like	YES :40	No: 02	Maybe:21
To Participate in			
This Methodology			
again?			

9. Activity Picture

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10. For review and critique contact: e-mail address of faculty and HOD

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