
Open Education Resource: Flipping the classroom with MOODLE

Work done as part of AICTE approved FDP on Use of ICT in Education for Online and Blended Learning

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Mentees:

- | | |
|----------------------|---------------|
| 1. Prof P. L. Sarode | (Team Leader) |
| 2. Prof J. S. Khatik | (Team Member) |
| 3. Prof K. D. Koshti | (Team Member) |



FDP in Educational Technology, 2016.

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Introduction

FDP201x: Pedagogy for Online and Blended Teaching-Learning Process is 4 weeks workshop.

OER work is develop by Prof. P L sarode, Prof. J S Khatik and Prof. K D Koshti and as a part of assignment. Our topic is Structure of Materials, which comes under category of Mechanical and Mechanical allied. Our team ID is 006 and RC 1108.

OER is created on Wordpress and Moodle (Moodle Cloud). Initially plane is just to develop on Wordpress, but we to get grades and quiz conduction we decided to go for MOODLE Cloud.

Team ID: 1108_012

RCID – 1108

Team

Mentor Name: Shyam A Sonawane

Mentees:

Team Leader: Prof P L Sarode

Team Member 1: Prof J S Khatik

Team Member 2: Prof K D Koshti

Section 1

Open Education Resource: Flipping classroom with Wordpress and MOODLE

About OER

Classroom is flipped by creating this OER with WordPress and MOODLE CLOUD lesson activities. This OER contains four lessons. Domain selected is mechanical and allied. Power Point Presentation is created and uploaded on WordPress site and Quiz activity is plan to conduct on MOODLE page to check understanding of student level. Concept mapping is shown in pdf file of out of class activity.

- OER is downloadable from link bellow :
https://mechanicalclass.files.wordpress.com/2018/06/fdp201x_oer_creation_rc1108_0124.pdf
- Moodle Cloud link:
<https://krishnakoshti.moodlecloud.com/login/index.php>

We created user with credentials as below, use this account to login.

User (Id- student Password – student)

- Target Audience: Second Year Mechanical Engineering students (Sem-III)
- Tags: Crystal, lattice, unit cell, defects, plastic deformation, properties
- OER developed in MOODLE CLOUD 3.3.2
- This resource is licensed under CC-BY-SA ver 4.0. You are free to use, distribute and modify it, including for commercial purposes, provided you acknowledge the source and share-alike.



Learning Objectives

At the end of course student should be able to

At the end of this session students should be able to

1. Understand Space lattice, Unit cells, 7 crystal structure and 14 Bravais lattices.
2. Understand atomic arrangement and packing in different unit cells.
3. Find out miller indices of crystallographic planes and directions.
4. Correlate some properties to crystal structure.
5. Describe the crystal defects and their effects on mechanical properties.

Describe the mechanism of plastic deformation

Helpful Documentation for Tool Use

1. WordPress – Design and development of Lesson Activity
2. MOODLE CLOUD – Design and development of Lesson Activity
3. Microsoft Office PowerPoint – for slide and animation development

Section 2

Design Decisions

Nature of Decisions taken

We consider Content Decisions, Pedagogic Decisions and Technology Decisions to create this OER.

1. Content Decisions

Session covers – Crystal structures, indexing, crystal defects or imperfections, mechanism of plastic deformation. Motive is that students can any time view this course content and assed when required.

2. Pedagogic Decisions

Cognitive Levels –

Out of Class Activity with lower cognitive level

SN	Out of class Learning objective	C- Level
1	Define Space lattice, Unit cells,7 crystal structure and 14 Bravais lattices.	Remember
2	Understand atomic arrangement and packing in different unit cells.	Understand
3	Find out miller indices of crystallographic planes and directions.	Understand
4	Correlate some properties to crystal structure.	Understand
5	Describe the crystal defects and their effects on mechanical properties.	Understand
6	Describe the mechanism of plastic deformation.	Understand

SN	Inclass Learning objective	C- Level
1	Find out miller indices of crystallographic planes and directions.	Apply
2	Find out the APF	Apply
3	Select the structure for specific mechanical properties	Analyze

Assessment Strategies –

Out of Class Activity with Multiple choice questions

SN	Out of class Learning objective	Assessment
----	---------------------------------	------------

1	Understand Space lattice, Unit cells,7 crystal structure and 14 Bravais lattices.	MCQ 1, 2
2	Understand atomic arrangement and packing in different unit cells.	MCQ 3, 4
3	Find out miller indices of crystallographic planes and directions.	MCQ 5, 6
4	Correlate some properties to crystal structure.	MCQ 7, 8
5	Describe the crystal defects and their effects on mechanical properties.	MCQ 9
6	Describe the mechanism of plastic deformation.	MCQ 10
7	Calculate compositions content by using Phase Rule	Identify as submission

In of Class activities used are TPS and PI

SN	In of class Learning objective	Assessment
1	What is crystal defect? Which type of crystal defect is there in Cast Iron?	Peer Instruction
2	Select appropriate, Identify material by out amount of phases present from its microstructure	Think-Pair- Share

3. Technology Decision

Out of Class Activity tool decided are as follows

SN	Tool	Use
1	Microsoft Office Power point	Slide show is created with office as licensed copy of Microsoft office16 is available in College. .You can also use Apache open office tool as Freeware.
2	Wordpress and Moodle Cloud	Wordpress and Moddle 3.3.2 (moodlecloud.com) is use to develop self-learning lesson.

Section 3

OER Description

Active OER

You can access active OER of “**Structure of materials**” in the Wordpress with link provided as follows:

https://mechanicalclass.files.wordpress.com/2018/06/fdp201x_oer_creation_rc1108_0124.pdf

OR

- MOODLE Cloud Link:
<https://krishnakoshti.moodlecloud.com/login/index.php>

We created user with credentials as below, use this account to login.

User (Id- student, Password – student)

Lesson Setting

1. Wordpress

For Wordpress lesson Screenshots shown as follows:

Step 1 : Go to <https://wordpress.com/> > log in

Step 2 : Create webpage - Manage > Site Pages > Add (ref-snap 1)

Step 3 : Adding data to - Put name of page at place of Title and add content at bottom place (ref-snap 2)

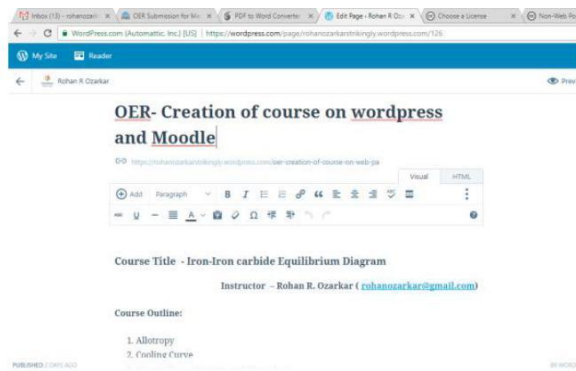
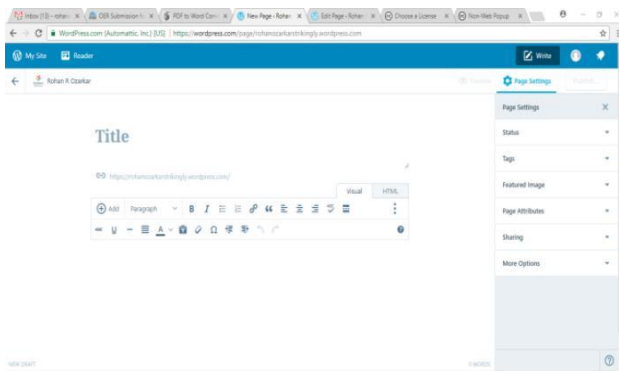
Step 4 : To add feature Image - **Go to Page** setting > Add featured image > update (ref-snap 4) > Add > Media (ref-snap 5) >Add > New > browse file to upload> select> Open > insert



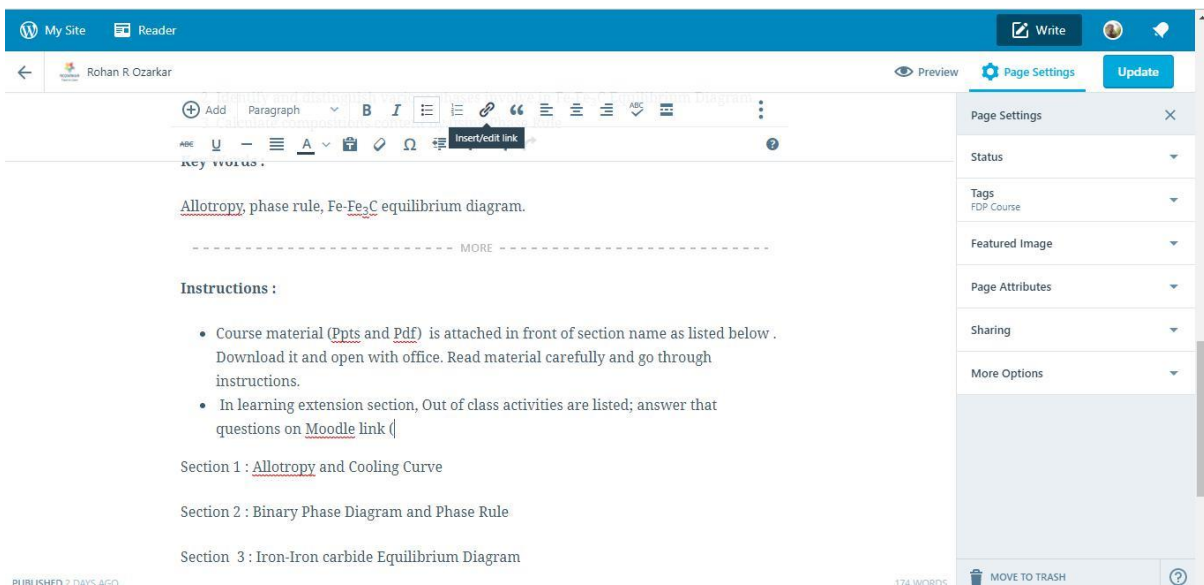
Snap 1

1. Before

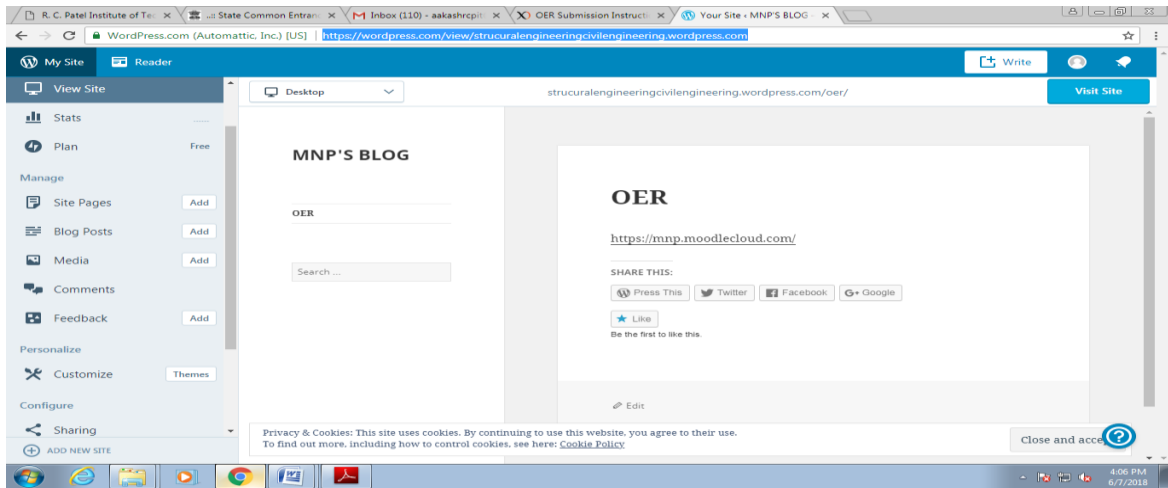
2. After



Snap 2



Snap 3



Snap 4

Step 5 : To Add Link- Click on >Insert link (ref-snap 5) > Put link in new window > add link



Snap 5

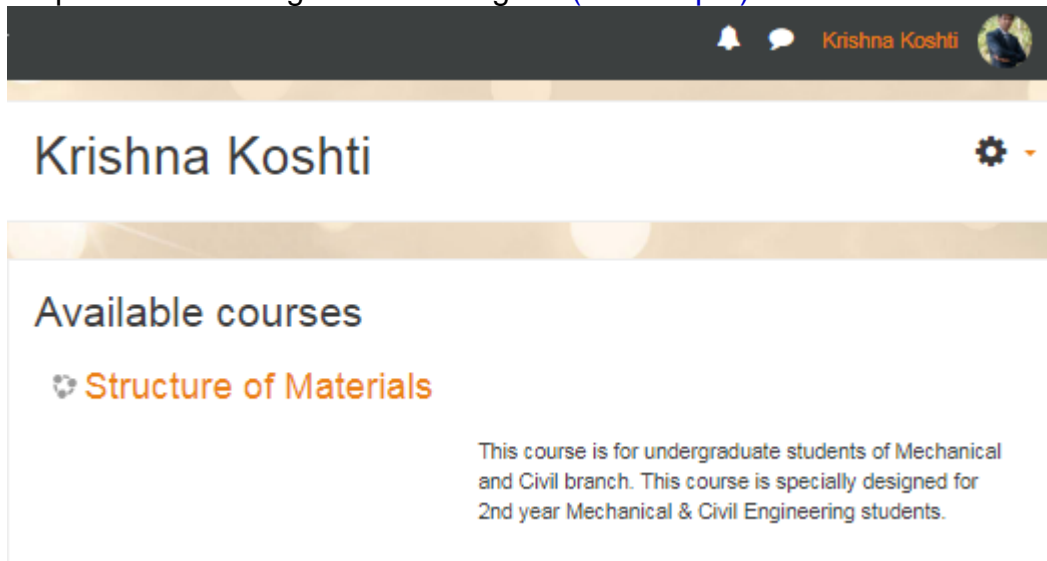
2. Moodle

For Moodle lesson Screenshots shown as follows:

Step 1: Go to > <https://www.moodlecloud.com/> > Create your own page then admin will sent you your id and password to account.

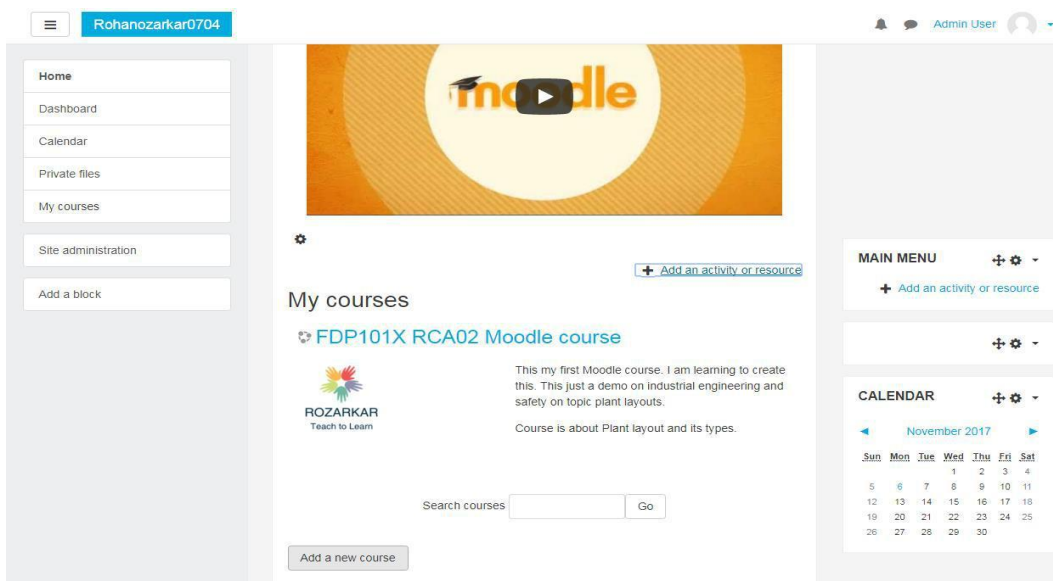
Click on link <https://krishnakoshti.moodlecloud.com/> and use ID (student) & password (student) to log in

Step 2: Go to Setting > Turn editing On (ref- Snap 6) >



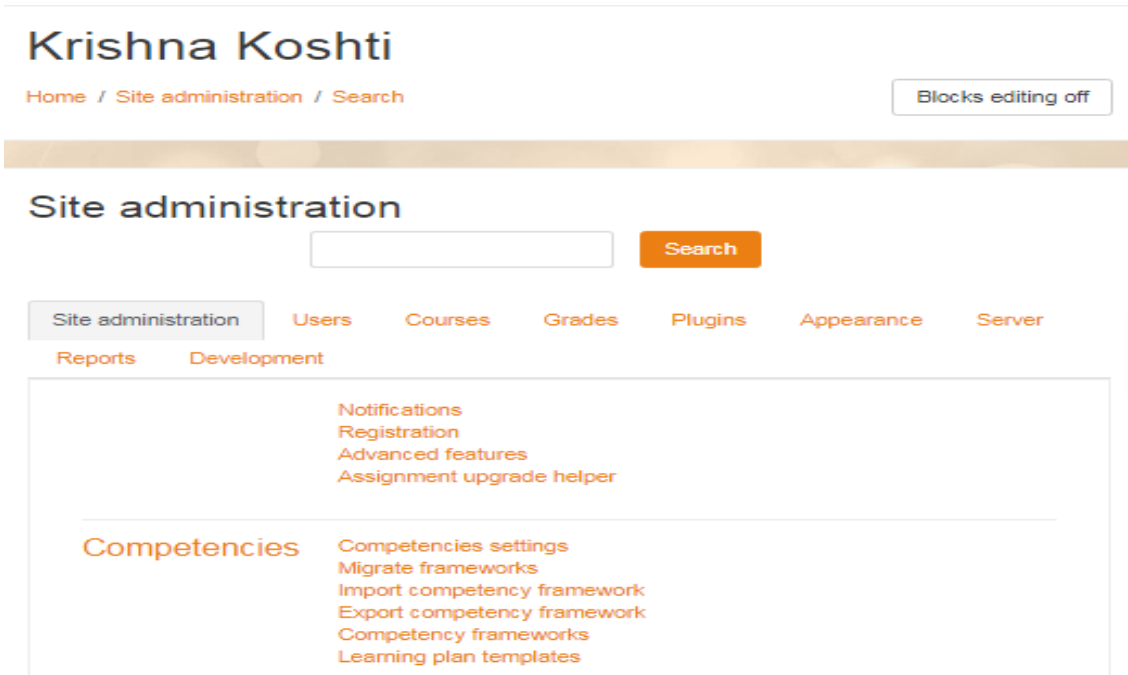
Snap 6

Step 3: Add new course (ref- Snap 7) course > Add General and course information

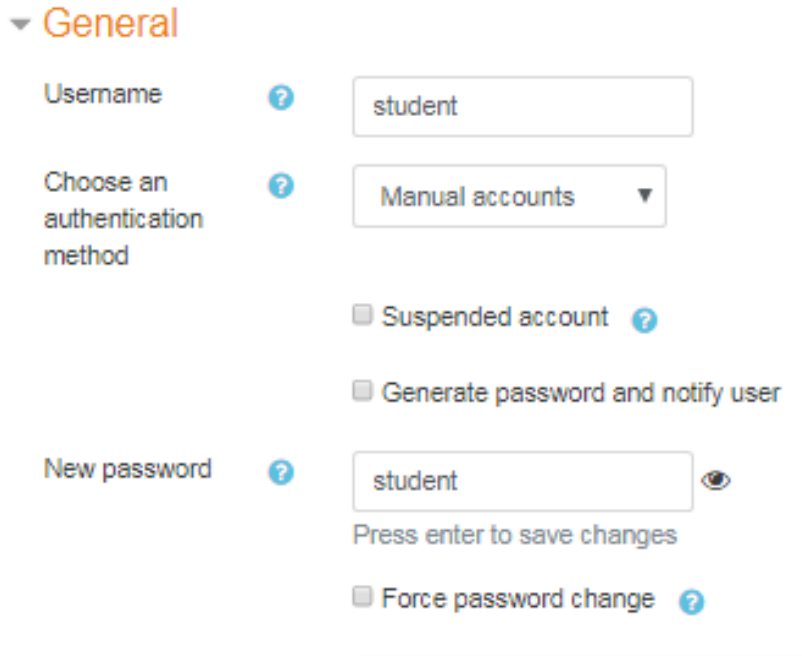


Snap 7

Step 4 : Select Site administration > Accounts > Add new user> Fill User details with ID password

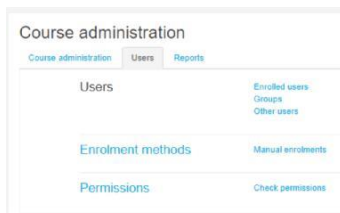


Snap 8

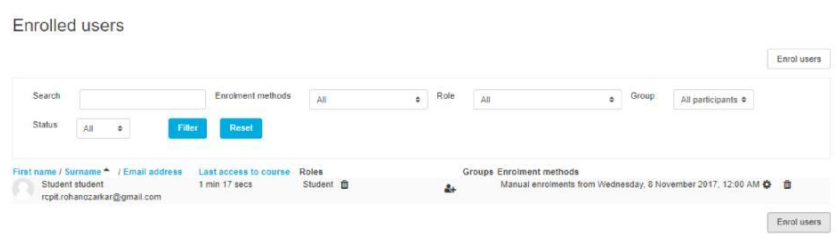


Snap 9

Step 5 : After user creation- Go course administration > user > Enrolled users Click on enrolled user> add created user> student

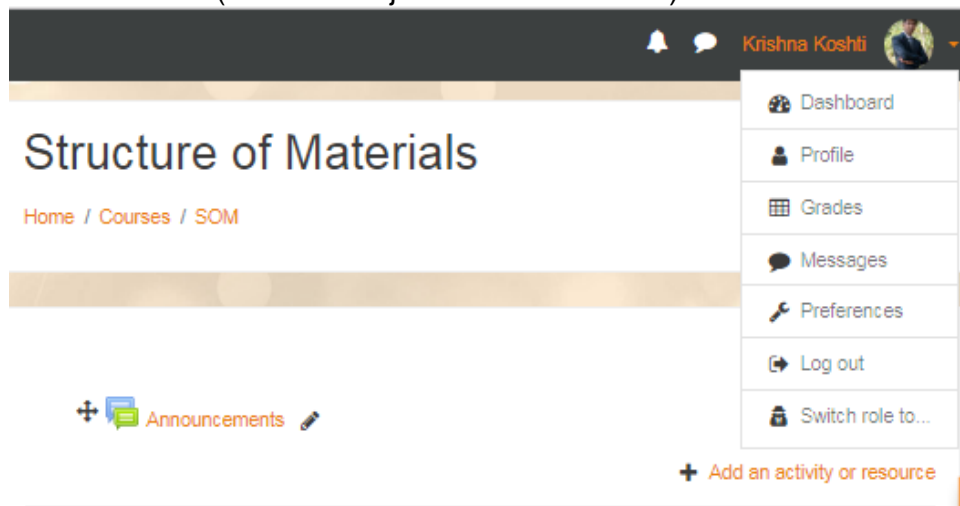


Snap 10



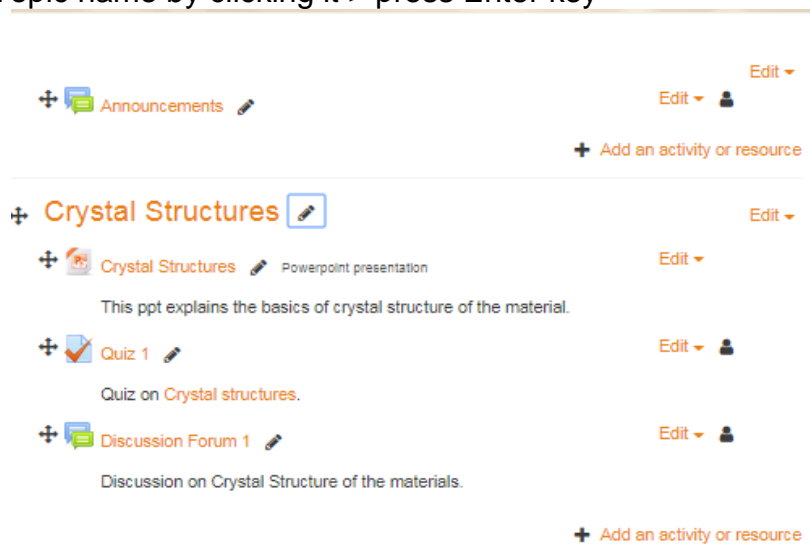
Snap 11

Step 6 : Click on Profile (man Pic- adjacent to Admin user) > Switch role to > Teacher



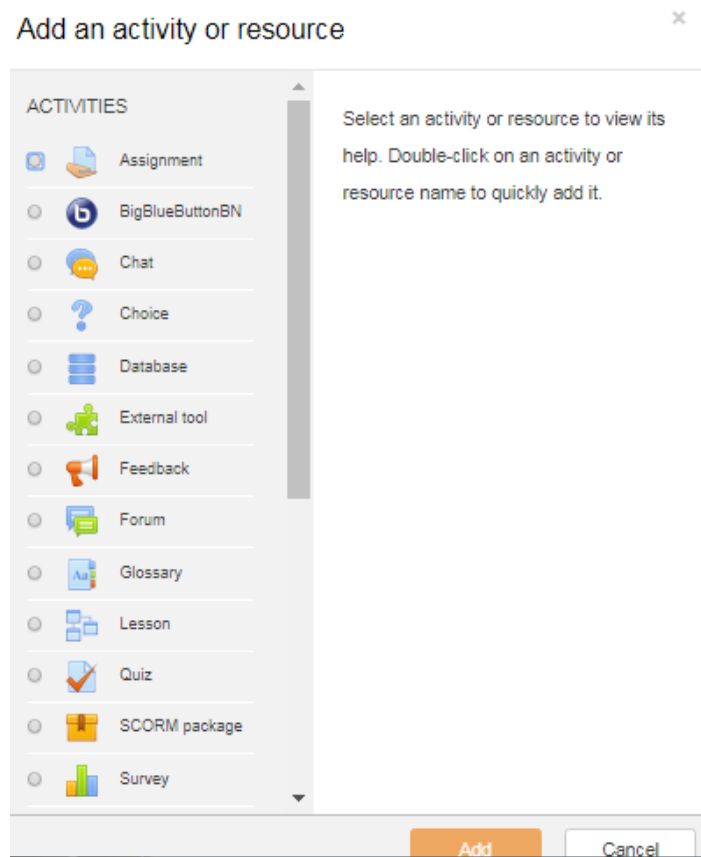
Snap 12

Step 6: Edit Topic name by clicking it > press Enter key



Snap 13

Step 8: Add Quiz > fill details> Add each details> save and display> edit quiz> Add new question > select from question bank



Snap 14

How to use this OER

For using this OER-Moodle Cloud, use admin id and password as follows and change to admin role or ask admin administrator to restore backup in your course.

Admin ID – student

Password – student

For using this OER-Moodle cloud, save page as html.

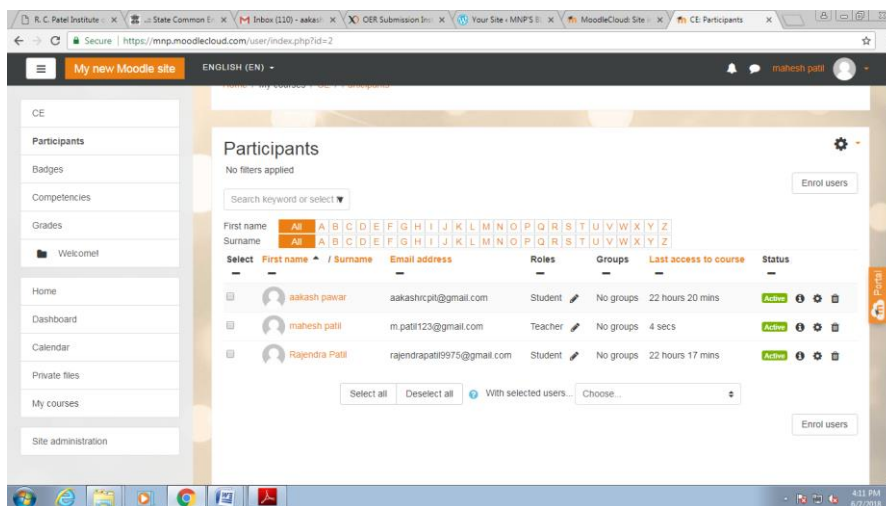
Section 4

Evaluating Effectiveness of OER

Effectiveness of OER is done by

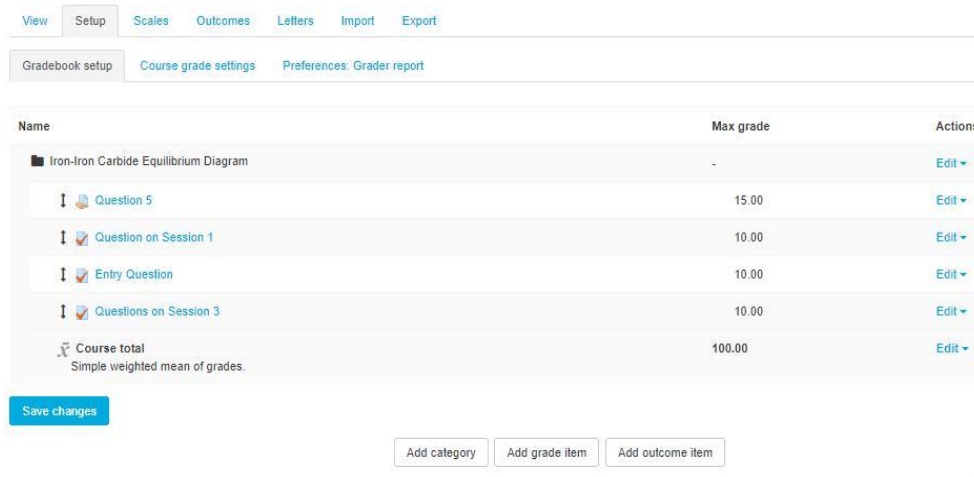
1. Student

Moodle Reports and grades (Refer – Snap 15) which we provide in Moodle Cloud



Snap 15

Gradebook setup



Snap 16

2. Consumer

Survey is provided before and after course. Provision to send feedback on course is also made for consumer on Moodle

Precourse survey

Fill course

All questions are required and must be answered.

Relevance

Responses

In this online unit...

	Not yet answered	Almost never	Seldom	Sometimes	Often	Almost always
1 my learning focuses on issues that interest me.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2 what I learn is important for my professional practice.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 I learn how to improve my professional practice.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 what I learn connects well with my professional practice.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Reflective thinking

Responses

In this online unit...

	Not yet answered	Almost never	Seldom	Sometimes	Often	Almost always
5 I think critically about how I learn.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 I think critically about my own ideas.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 I think critically about other students' ideas.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 I think critically about ideas in the readings.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Interactivity

Responses

In this online unit...

	Not yet answered	Almost never	Seldom	Sometimes	Often	Almost always
9 I explain my ideas to other students.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 I ask other students to explain their ideas.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 other students ask me to explain my ideas.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 other students respond to my ideas.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tutor support

Responses

In this online unit...

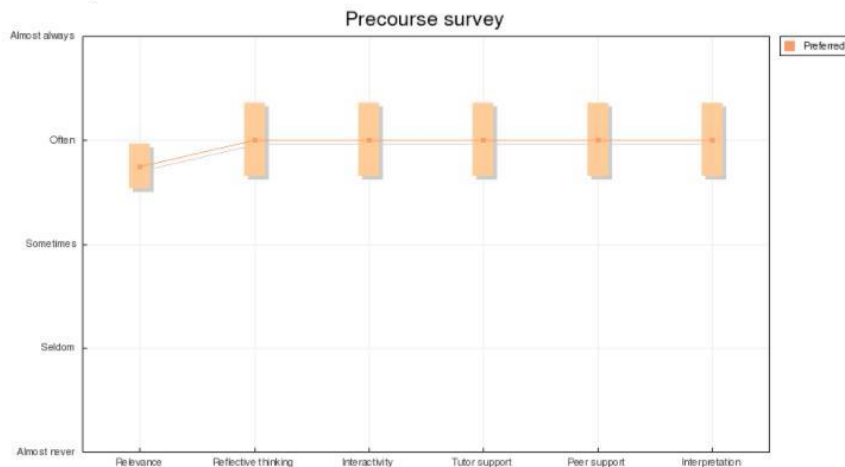
	Not yet answered	Almost never	Seldom	Sometimes	Often	Almost always
13 the tutor stimulates my thinking.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Snap 17: Pre course survey questions

Precourse survey

[Summary](#) [Scales](#) [Questions](#) [Participants](#) [Download](#)

Summary



Snap 18: Response - Pre course survey questions

More details visit site as follow and use above Id and Password to login (<https://moodlecloud.com/app/en/portal/view/krishnakoshti>)

Post course survey

Answer following

At what moment in class were you most engaged as a learner?

Section 2

At what moment in class were you most distanced as a learner?

Section 3

What action from anyone in the forums did you find most affirming or helpful?

Flip Classroom

What action from anyone in the forums did you find most puzzling or confusing?

Discussing

What event surprised you most?

Snap 19: Response on post course survey on course effectiveness

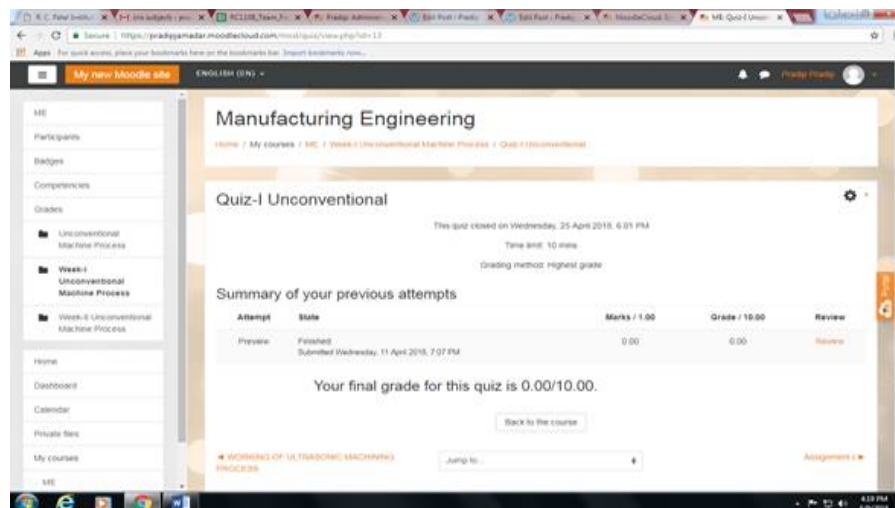
Wordpress

On Wordpress also we provide box to leave reply as feedback on course as consumer level

Leave a Reply

Enter your comment here...

Snap 20 : Worspress feedback box



Snap 21 : Quiz snap

Section 5

Consolidated Log of Team Work

The consolidated log of team work is as shown below:

Activity	Team Member	Amount of Time
Discussion	K D Koshti	Every Monday and Friday- 2 hours for three week
	P L Sarode J S Khatik	
Tool Exploration	K D Koshti	2 Hrs
	P L Sarode J S Khatik	4 Hrs
OER Creation	K D Koshti	10 Hrs
	P L Sarode J S Khatik	6 Hrs
OER Documentation	K D Koshti	6 Hrs
	P L Sarode J S Khatik	4 Hrs
Individual Reflection (Diary Logging)	K D Koshti	2 Hrs on Sunday of each week
	P L Sarode J S khatik	1 Hour on Saturday of each week
OER Evaluation	K D Koshti	6 Hr
	P L Sarode J S Khatik	9 Hrs

Section 6

Building a Community of MOODLE and Flipped Classroom Adopters

Now we provided link to fill google form as survey to join our Moodle society at RC1108 on Moodle Cloud page. In future (January 2019) our plan is to create wiki from generated contacts.

Google form survey link

https://docs.google.com/forms/d/e/1FAIpQLScey49pWMSCXT1-0Gg4XE67es8sZ4_xH2-v9yS2436lkEDF3A/viewform?c=0&w=1

RC1108: R C Patel Institute of Technology,
Shirpur- Place to discussion on Moodle
for Teachers

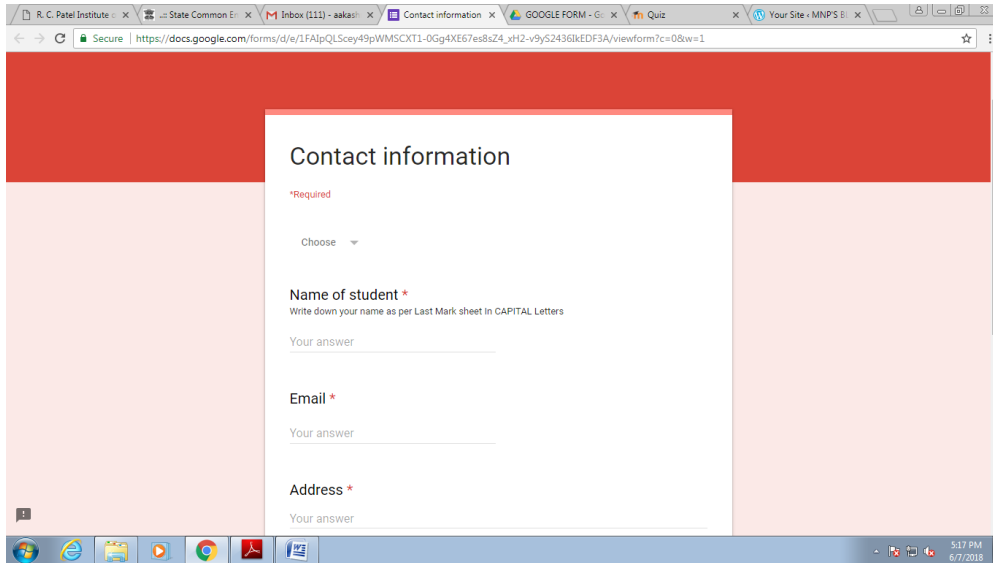


FDP 101x and 201x by IITBombayx inspire us to take this initiative to form society of teachers how use Moodle For teaching process. We welcome you to fill google form (link provided below). Plan is to build Society on wiki in future. You can also live to reply below in word press.

Google form link -

https://docs.google.com/forms/d/e/1FAIpQLSfIFyp1N2kWL0BSrRDPmTTZK_lKg4EPvPSNYQkqxHpaRZYb2Q/viewform?usp=sf_link

Snap 22: Webpage for Moodle Society



Sanp 23 :Google form

<https://WordPress.com/view/strucuralengineeringcivilengineering.WordPress.com>

Summarizing OER

I come to know lot of new tool like Webpage and Moodle among Fdp101x and 201X course. This OER is result of effort and motivation of IITB team. Leave your comment on our website listed below. Thank you for reading.

<https://krishnakoshti.moodlecloud.com>

Works Cited

1. William D. Callister , “Materials Science and Engineering”, John Wiley & Sons Inc – 2010.
2. V.D. Kodgire, “Material Science and Metallurgy”, Everest Publishing House – 25th Edition – 2009.
3. Youtube (online) ,Video link–
<https://www.youtube.com/watch?v=uh4obOPltpw>



IPD in Educational Technology, 2016.

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Apex -1: OER Moodle site Snap

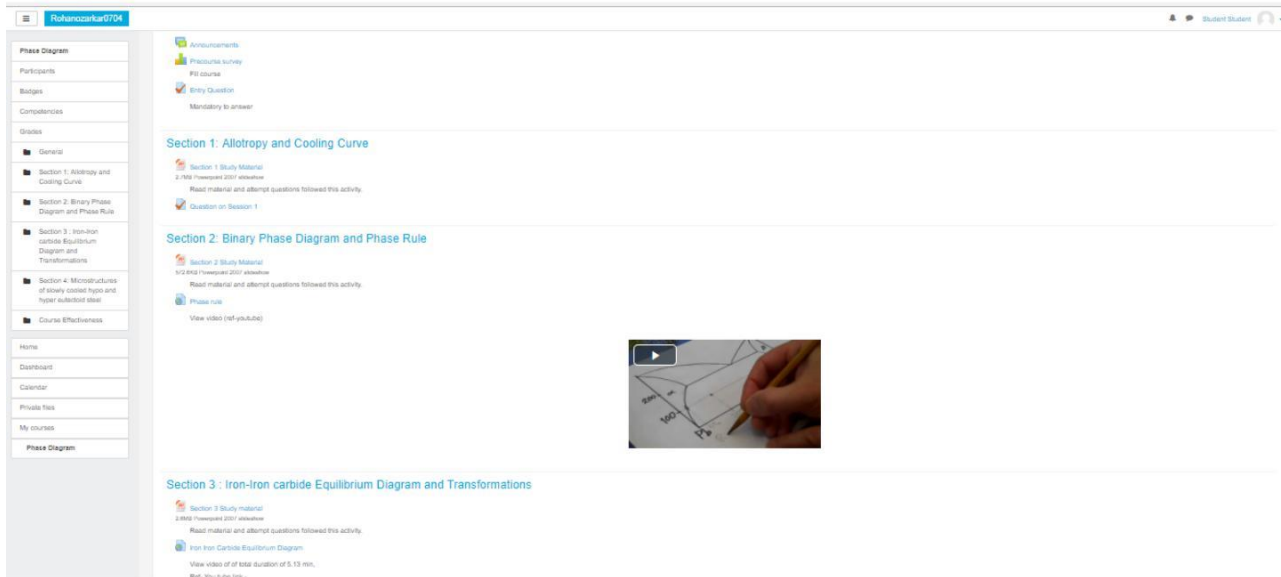


Image AP1

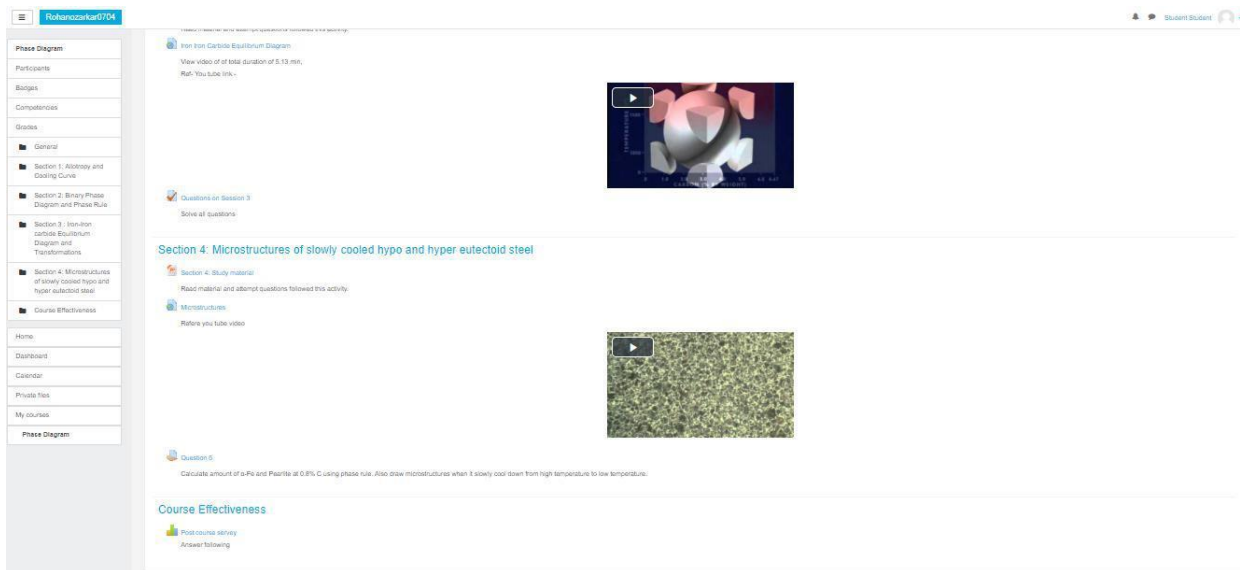
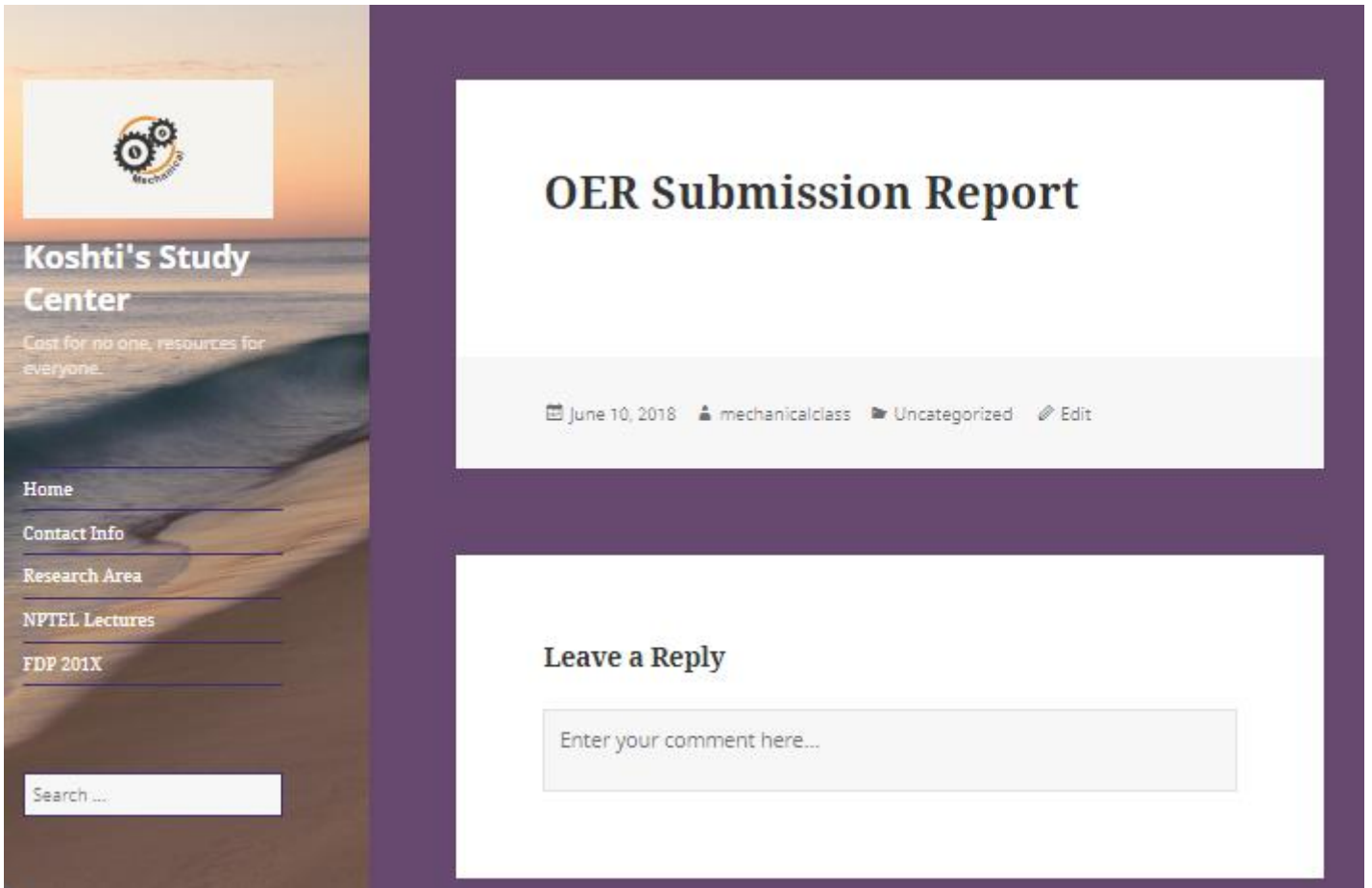


Image AP2

Apex-2: WordPress site Snap



The screenshot displays a WordPress website layout. On the left is a sidebar with a logo for 'Mechanics' (two interlocking gears) and the text 'Koshti's Study Center' with the tagline 'Cost for no one, resources for everyone.'. Below this are navigation links: Home, Contact Info, Research Area, NPTEL Lectures, and FDP 201X, along with a search bar. The main content area features a post titled 'OER Submission Report' dated June 10, 2018, by 'mechanicalclass', categorized as 'Uncategorized'. Below the post title is a 'Leave a Reply' section with a text input field containing the placeholder 'Enter your comment here...'.