



Open Education Resource: Sequence of Learning Dialogue Videos and LbD activities for a Module using MOODLE

Work done as part of AICTE approved FDP on **Pedagogy for Online and Blended Teaching-Learning Process**

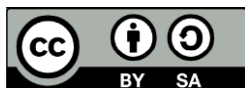
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Engineering Drawing, 2017.

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Open Education Resource: Sequence of Learning Dialogue Videos and LbD activities for a Module using MOODLE

About the OER

The open education resource (OER) is a collection of MOODLE Lesson activities that comprise learning dialogue (LeD) videos with reflection spots and learning by doing (LbD) activities. There are in all eight learning dialogue videos, and each deals with important topics from Engineering Drawing. Engineering Drawing is a fundamental subject for first year engineering students of all branches.

Our OER is to be viewed and downloaded from: <https://hari1058.wordpress.com/oer/>

Target Audience: First year Engineering Students (any discipline)

Tags: Learning Dialogues, Learning by Doing Activities, MOODLE, Engineering Drawing, Projection, First Angle Projection, Projection of Points, Projection of Lines, Projection of Planes, Projection of Solids, Sections of Solids, Introduction to Conic Sections.

OER developed in GNOMIO MOODLE v3.3.2

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Learning Objectives

After using this OER, learner will be able to:

- Develop visualization skills required for Engineering Drawing
- Interpret the basic projection views of objects
- Draw projections for various geometric entities like points, lines, planes and solids
- Familiarize themselves with conic sections viz. Ellipse, Parabola and Hyperbola

Helpful Documentation

[1] for design and development of Lesson Activity in MOODLE (an Open Source Tool)

[2] for use of screencast-O-matic

Section 2: Design Decisions

Nature of Decisions taken

The design decisions involved in the creation of this OER were of broadly three types:

1. Content Decisions
2. Pedagogic Decisions
3. Technology Decisions

Content Decisions

The content decisions related to:

- a. Earmarking specific topics from Engineering Drawing to be covered –Which, Why and How?
- b. Basic textbooks, websites and any other related study material to be provided.

Pedagogic Decisions

The two main pedagogic strategies that have been used for blended teaching-learning process are Learning Dialogues and Learning by Doing activities.

- a. The Learning dialogues are mainly short videos (less than 8 mins) that have specific deliverable technical content. The short videos are mainly cater to the short attention span and moreover include reflection spots for the students to make the learning more active and learner-centric. The learner is made to pause the video and reflect upon the content.
- b. The Learning by doing activities are attempted immediately after watching Learning Dialogues (LeDs) videos. By doing the activity the learner can gauge his comprehension and also reinforce the key concepts covered in the LeD. The feedback provided for LbDs of which are right answers and why other answers are wrong gives a superior comprehension of the content.

Technology Decisions

While developing the learning dialogues and learning by doing activities, the major technology decisions taken were:

- a. Tool to be used for creating screencast: Screencast-O-matic v2.0; the videos recorded can be saved in avi and mp4 formats. The mp4 format can later be uploaded to youtube.
- b. MOODLE Lesson Activity for setting up the learning dialogues (screencasts) and learning by doing activities (mainly quiz and assignment)

Section 3: OER Description

Active OER

For checking the active OER, you may access the course on Engineering Drawing here:
<https://hari.gnomio.com>

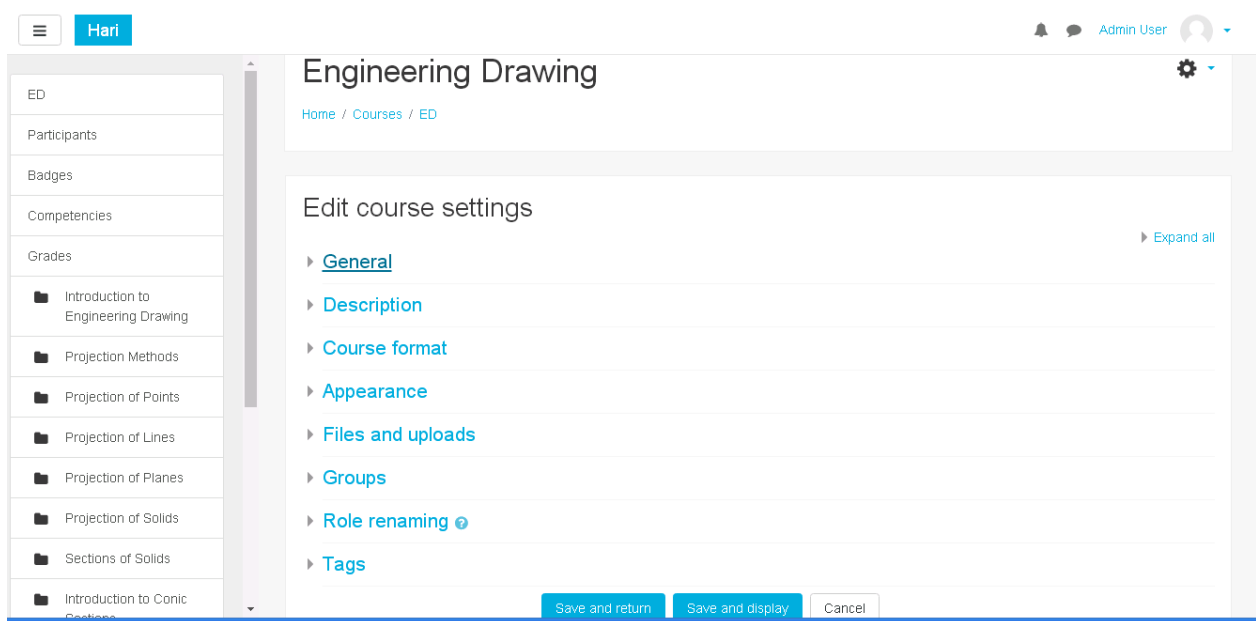
The login username and password are given below:

Username: student1

Password: Student@1

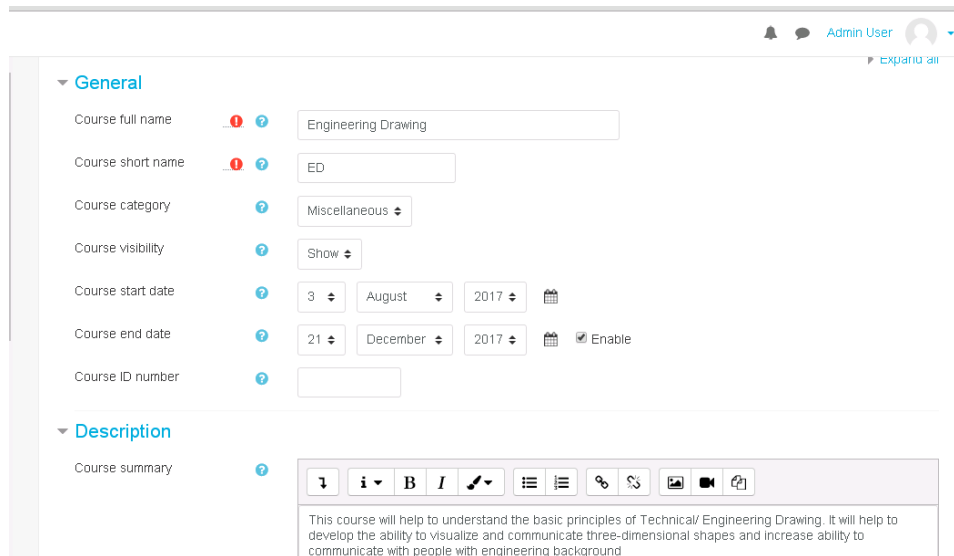
Lesson settings

Screenshot 1: Edit course settings in MOODLE



Screenshot 2: General and Description settings

You can allot the access duration for your course by specifying the course start and end date. A brief description about the course can also be mentioned.



The screenshot shows the Moodle course settings interface. At the top right, there is a notification bell, a chat icon, and the user 'Admin User' with a profile picture and a dropdown arrow. Below this is a 'Expand all' link. The main content is divided into two sections: 'General' and 'Description'.
The 'General' section includes:

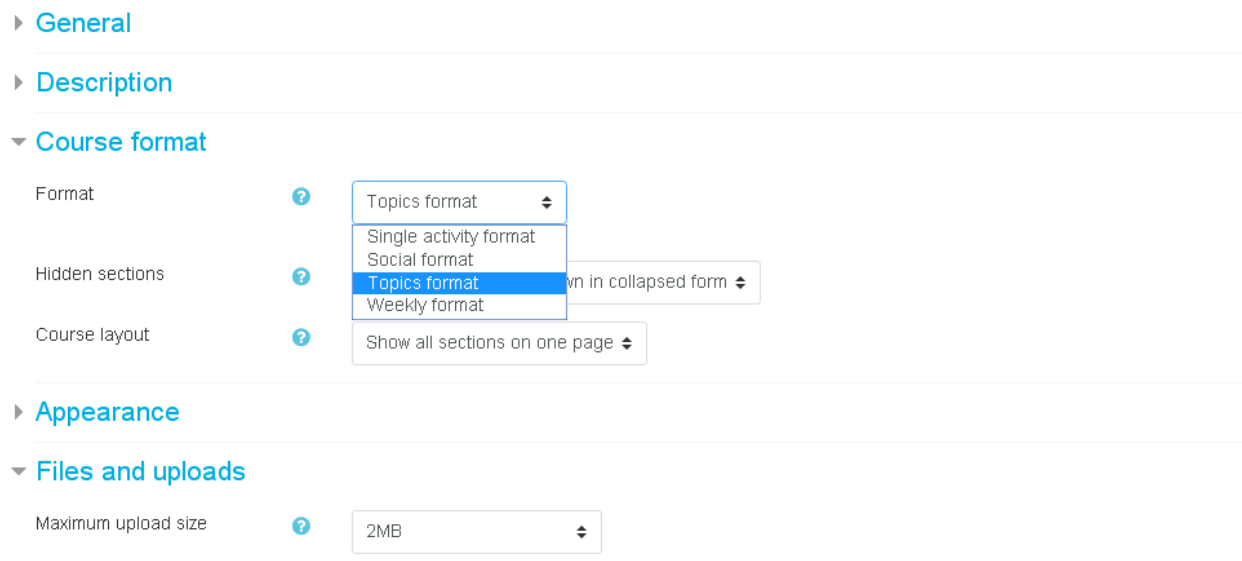
- Course full name: Engineering Drawing
- Course short name: ED
- Course category: Miscellaneous
- Course visibility: Show
- Course start date: 3 August 2017
- Course end date: 21 December 2017 (with an 'Enable' checkbox checked)
- Course ID number: (empty field)

The 'Description' section includes:

- Course summary: A rich text editor with a toolbar (bold, italic, underline, link, unlink, list, list, link, unlink, image, video, embed) and the text: 'This course will help to understand the basic principles of Technical/ Engineering Drawing. It will help to develop the ability to visualize and communicate three-dimensional shapes and increase ability to communicate with people with engineering background.'

Screenshot 3: Course format and File upload limit settings

The course format can be selected as either topic basis or weekly basis and the limit on the file size permitted to be uploaded by students for assignment can be set.



The screenshot shows the Moodle course settings interface. It is divided into four sections: 'General', 'Description', 'Course format', and 'Appearance'.
The 'Course format' section includes:

- Format: Topics format (dropdown menu is open showing: Single activity format, Social format, Topics format, Weekly format)
- Hidden sections: (empty field)
- Course layout: Show all sections on one page

The 'Files and uploads' section includes:

- Maximum upload size: 2MB

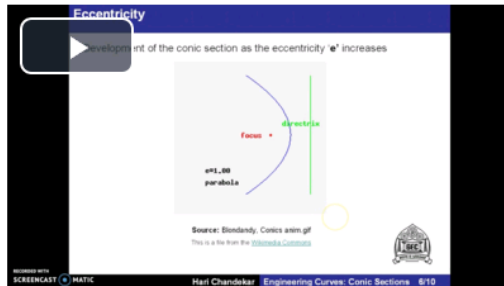
Screenshot 4: Contents of Lesson – “Introduction to Conic Sections”

+ Introduction to Conic Sections

Edit ▾

- + This screencast is on Introduction to Conic Sections (a topic from Engineering Drawing) and two Learning by Doing (LbD) activities based on the screencast.

Edit ▾



+ Learning By Doing Activity 8

Edit ▾ 

+ Learning by Doing Activity 9

Edit ▾ 

+ pdf of presentation slides

Edit ▾

Screenshot 5: Setting up Content in the Lesson

Updating Label in Introduction to Conic Sections

▶ Expand all

▾ General

Label text

This screencast is on Introduction to Conic Sections (a topic from Engineering Drawing) and two Learning by Doing (LbD) activities based on the screencast.

<https://youtu.be/WifOcWtnVWk>

▶ Common module settings

▶ Tags

▶ Competencies

Save and return to course

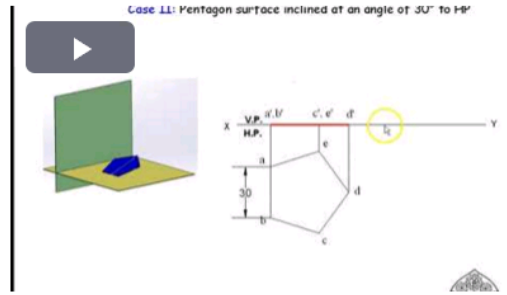
Cancel

Screenshot 6: Preview of the created content

+ Projection of Planes

Edit 

This screencast discusses how to draw projection of regular pentagon whose surface is inclined to H.P. and the edge on which it rests is inclined to V.P.



+ Learning By Doing Activity 5

Edit  

+ Add an activity or resource

+ Projection of Solids

Edit 

This screencast discusses about projection of right regular pentagonal prism whose axis is inclined to H.P. and the base edge on which it rests is inclined to V.P. using Change of Position method.

Screenshot 7: Editing MCQ inside the lesson

Editing quiz: Learning By Doing Activity 8

You cannot add or remove questions because this quiz has been attempted. (Attempts: 1)


Questions: 5 | Quiz open (closes 9/12/17, 23:50)

Maximum grade

Total of marks: 5.00

Shuffle 





Page 1

1   **Sectioning** When the section/cutting plane makes same angle with the ...  1.00 




Page 2

2   **Sectioning 1** When the section/cutting plane is parallel to the base of t...  1.00 





Page 3

3   **Eccentricity** The eccentricity of the conic section is 2/3. The conic secti...  1.00 

Page 4

4   **eccentricity 1** The eccentricity of the conic section is 0. The conic secti...  1.00 

Page 5

5   **eccen 2** The eccentricity of the conic section is 3/2. The conic section m...  1.00 

Screenshot 8: Student view of MCQ

Engineering Drawing

Home / Courses / ED / Introduction to Conic Sections / Learning By Doing Activity 8 / Preview

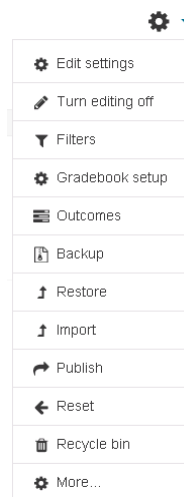
The screenshot shows a Moodle quiz question interface. On the left, a sidebar for 'Question 1' indicates it is 'Not yet answered', 'Marked out of 1.00', and provides options to 'Flag question' and 'Edit question'. The main area contains the question text: 'When the section/cutting plane is parallel to the base of the cone, the curve is called a _____'. Below the text, it says 'Select one:' followed by four radio button options: 'a. Ellipse', 'b. Hyperbola', 'c. Circle', and 'd. Parabola'. On the right, a 'QUIZ NAVIGATION' panel shows five question boxes, with the first one containing the number '1'. Below the navigation are links for 'Finish attempt ...', 'Time left 0:04:55', and a 'Start a new preview' button. At the bottom right of the question area is a 'Next page' button.

How to use this OER

For using this OER, please ensure that you have admin permission in your MOODLE course (needed for importing activities). Else ask your administrator to restore this backup in your course.

Step 1: Download the set of 8 learning dialogues along with learning by doing activities (OER) from <https://hari.gnomio.com/>


Step 2: Go to the MOODLE course where you want to import this lesson. In the Administration section click “Restore”



Step 3: Drag and drop the backup files into the “Files” area and click restore

Import a backup file

Files



You can drag and drop files here to add them.

Course backup area ⓘ

Filename	Time	Size	Download	Restore
<input type="button" value="Manage backup files"/>				

User private backup area ⓘ

Filename	Time	Size	Download	Restore
<input type="button" value="Manage backup files"/>				

Automated backups ⓘ

Filename	Time	Size	Download	Restore
<input type="button" value="Manage backup files"/>				

Step 4: Verify the contents of the restore by going back to the lesson

Step 5: After verifying, post the instructions to your students to complete the lesson activity before the next class using MOODLE forums.

Step 6: Before start of the next class please go and check the reports (see fig below) to see how students performed.

Additionally, if there are some common errors made by students, you may start the face-to-face session with a Peer Instruction question to elicit the misconception and resolve it.

Best Practices with Lesson Activity

Here are some of the best practices from our experience on using this Lesson Activity in classroom:

1. Provide this activity at least 1 week in advance.
2. Provide minor incentive (marks) for completion of the activity.
3. Ensure that there is a tangible output at the end of out-of-class activity to ensure learners are interested
4. It would be good if the screencasts and resources were separately available in a
5. “Resources” folder in the MOODLE course itself. This will take care of common cribs related to “website not available”, “resources not accessible” etc.

Section 4: Evaluating Effectiveness of OER

The OER effectiveness can be assessed at two levels:

1. At the student level
2. At the consumer level

Effectiveness at the student level

Effectiveness at the student level involves metrics related to student access of the resources viz. the learning dialogues and the learning by doing activities.

The Moodle lesson report can be used to evaluate this effectiveness, with the report showing the total number of students who accessed the quizzes (along with time) and their marks (based on their answers to MCQs).

Effectiveness at consumer level

OER consumers are typically teachers who want their students to develop visualization skills in Engineering Drawing. Linking a survey on three main points: Ease of use, Concept coverage and concept complexity can help in identifying the effectiveness of this OER at consumer level. This has to be done as a follow-up activity.

Implementing Survey

Thus every user who downloads this resource will be asked their email address and as a follow up the survey will be sent to their email address.

Survey Questions

Construct	Question	Scale
Ease of Use	I found it easy to download the Lesson Activity	Strongly Disagree to Strongly Agree (5-point Likert Scale)
	I found the instructions to setup the Lesson Activity useful in setting the activity in my Course	
	I was able to successfully create Lesson in my own course	
Concept Coverage	The Lesson covers the required concepts related to Engineering Drawing that I need for my course	
Concept Complexity	The content inside the Lesson is too complex for my students to understand	

Section 5: Consolidated Log of Team Work

The consolidated log of team work is as shown below:

Activity	Team Member	Amount of time	Additional logs if any
Discussion	Team Leader	1 hr	Discussion about topic selection and OER layout
	Team Member 1	1 hr	
Tool Exploration	Team Leader	2 hrs	Set up and installation, tried both Camstudio and screencast-O-matic tool.
	Team Member 1	2 hrs	
OER Creation	Team Leader	8 hrs	Choosing content, creating powerpoint slides, creating scripts, narration and recording
	Team Member 1	8 hrs	
OER Documentation	Team Leader	3 hrs	Planning the content to be included, screenshots of MOODLE course creation
	Team Member 1	3 hrs	
Individual Reflection (Diary Logging)	Team Leader	2 hrs	Discussions, ideas, content selection, tool selection
	Team Member 1	2 hrs	
OER Evaluation	Team Leader	2 hrs	Defining rubrics, specifying marks
	Team Member 1	2 hrs	

Section 6: Building a Community of MOODLE users

Possible Sources for Community Building

Some of the viable sources for building a community are:

- Teachers who are using MOODLE
- Teachers who plan to use learning dialogues and learning by doing activities.

Plans for Community Building

The resource is already available in the webpage and its access requires the users to provide their email id. Thus there will be a list of interested users whom we can follow up using email. All the interested users can then be connected using a local Wordpress or MOODLE website.

Works Cited

[1] MOODLE. (2017, September) Moodle Docs. [Online].

https://docs.moodle.org/33/en/Main_page

[2] Screencast-O-matic. <https://help.screencast-o-matic.com/>