Curriculum Development of Master's Degree Program in Industrial Engineering for Thailand Sustainable Smart Industry -MSIE4.0

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WP 3 – Curriculum Development II

Outcome 3.1 -Structure of the online learning platform

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REVISION SHEET

Version	Date	Author (Partner/Person)	The revision reason
1	25/02/2019	AIT / Huynh Trung Luong	First and final version of WP1_Task3.3 - Outcome 3.1. Developed by Huynh T. Luong, Pisut Koomsap, Mongkol Ekpanyapong, Clifford M. Gasillos and IT staffs at AIT.

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1   Executive Summary

In this task, a web portal for adaptive e-learning purpose is developed. It serves as a single access point for all online course materials, self-studying resources (e-books, scientific articles, reports of case studies), quizzes, assignments, and as an interface for discussion/interaction among students as well as between students and lecturers. This web portal will satisfy the following requirements:

- Give students access to learning materials and other useful information as well as student's services
- Allow students to interact with each other and with course's instructor
- Allow students and instructors to share information
- Provide an innovative teaching tool for instructors and an alternative learning tool for students.

The VClass LMS (Learning Management System) developed by AIT intERLab is utilized with appropriate modifications for course management, forum discussion, announcement, grading, etc. The BigBlueButton, an open source conference system, and it expanded version MCONF will be utilized for organizing web conferences. This report will present the structure of Virtual Class and guides on how to use the system for online teaching/learning purpose.

2   Introduction

An online learning platform is a teaching and learning environment located within a computer-mediated communication system. In an online learning platform, all activities and interactions take place through the computer instead of face-to-face. A virtual classroom conducted on an online learning platform may involve three overlapping scopes of interaction technologies; i.e., virtual courses, online meetings and online presentations.

In an online learning platform, education refers to instruction in a learning environment where teachers and students are separated by time or place, or both. It is the place where students and instructors interact, and courses of entire degree programs can be electronically delivered in a whole or in sperate modules via a combination of different teaching and learning methods. Usually, in this type of learning environment, students and teachers interact using internet.

A typical virtual classroom conducted on an online learning platform may contain:

1. Class activities
2. Group and individual learning activities
3. Discussion and chats with a students
4. Quizzes and surveys
5. Homework activities and assesstment documents
6. Full online courses with modules of work
7. Forum and synchronous chat session

Conducting courses on an online learning platform can help to fulfil the learners' need in terms of

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- Flexible time – students may participate at any time using their own agendas
- Location – students are not limited to courses offered in their geographic locations

For both teachers and students, courses conducted on an online learning platform provide many advantages:

1. Remove the need to travel to a location in which to participate/deliver the course lecture
2. The courses can be accessed from any computer/device with internet connection
3. The courses are accessible to students with physical disabilities, which is an advantage over the real classroom, as they can access it from home
4. Independent time schedule of attendance

The VClass online learning platform developed under MSIE 4.0 project will served the above requirements. This platform was developed at AIT and have been tested with 2 courses, i.e., AT72.03 Statistical Models & Design of Experiments (August Semester, 2018 – completed) and AT72.08 Stochastic Decision Models (January Semester, 2019 – ongoing). The general structure of VClass contains the following modules:

- Home page
- Lectures
- Peer Grading
- Forum
- Access logs
- Grade system
- Grade category
- Grades
- Submission
- Groupings
- About

In the following section, introduction about the above modules together with guidance on how to use the platform will be presented.

3   Structure of VClass online learning platform

3.1 Requirements

In order to use VClass, the users must

- Be a lecturer at partner universities or a student currently enrolled in the corresponding courses offered at partner universities
- Have login credential provided by website administrator (AIT)
- Have laptop/device with internet connection

The users can login to VClass from the address: **http://msie.vclass.net/**

The login interface is illustrated in Figure 1 below:

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Figure 1. Login Interface of VClass

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3.2 Home Page

After login, the teacher will see the list of courses he/she offered (see Figure 2)

Then by clicking on "Open Course" button on the right, the home page of the course will be opened as seen in Figure 3

On the home page of a course, the following information can be seen:

- Recent announcements
- Learning documents/Lectures recently uploaded

New announcement can be posted by use of "Post Announcement"
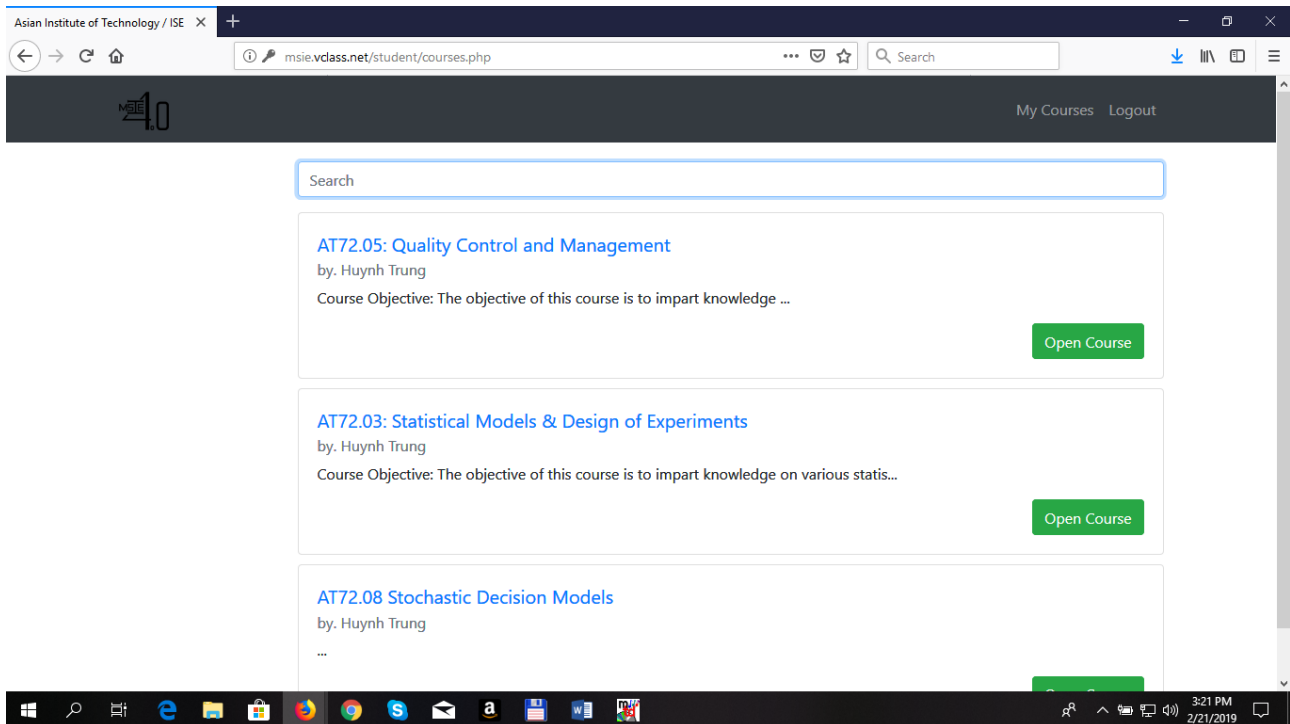
Figure 2. List of opened courses in VClass

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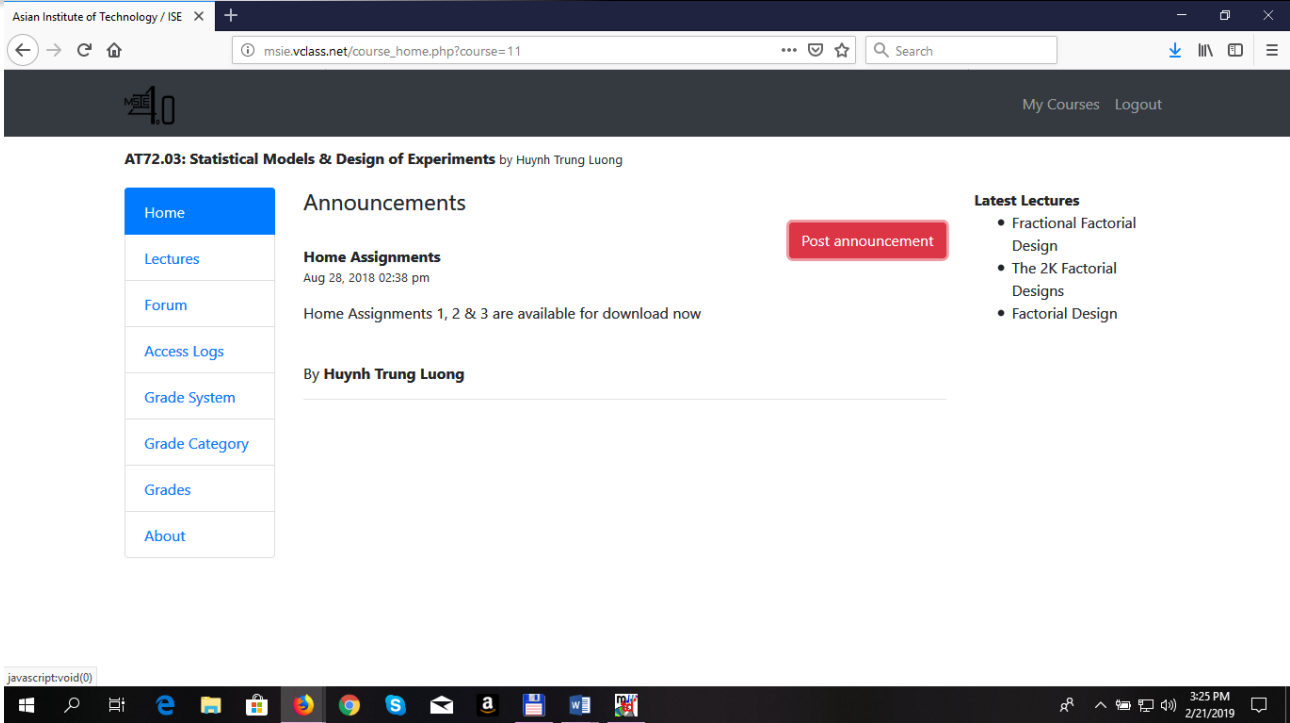
Figure 3. Home page of a course

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3.3 Lectures Module

In lectures module, the lecturers can upload lectures (e.g., ppt presentation files), live videos & recordings, documents such as pdf and word files. The interface of "lectures" module is showed in Figure 4
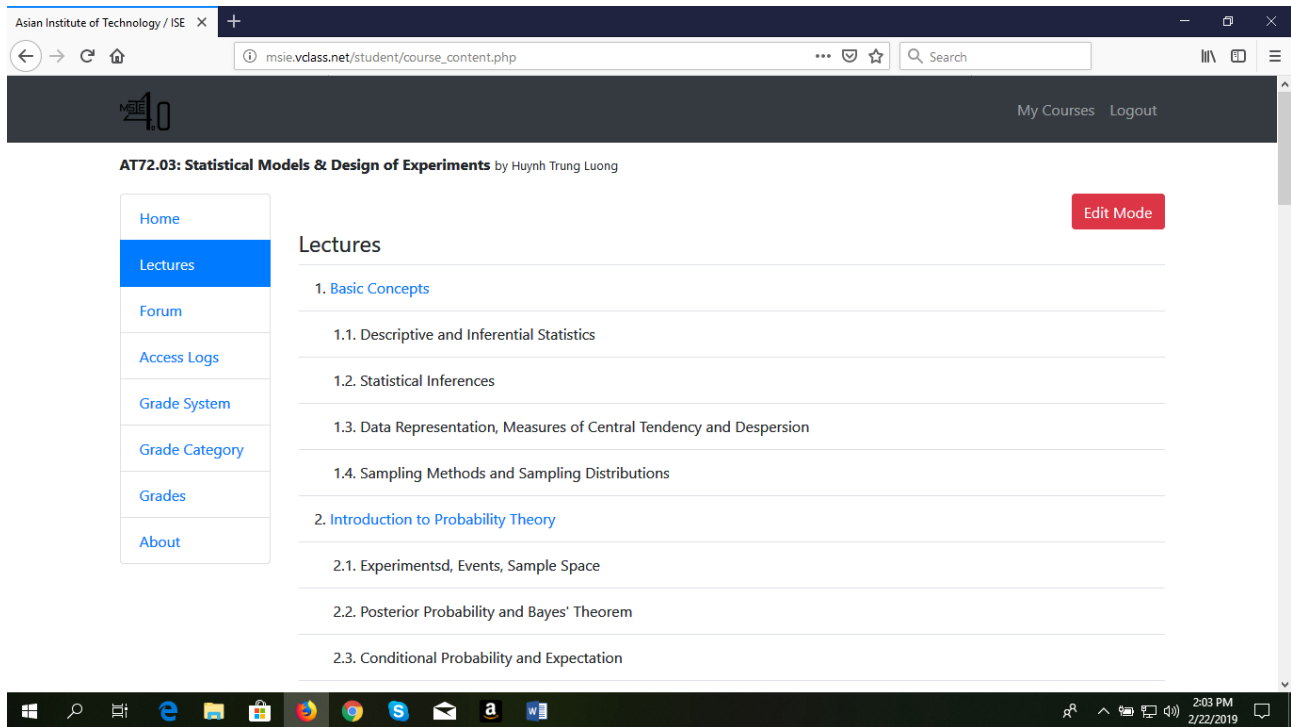
Figure 4.   Interface of "Lectures" module in live mode

In order to upload lectures/documents on to the learning platform, click the "edit mode" on the interface of lectures module in "live mode" to enter "edit mode" (see Figure 5), and then click "File Manager". On the pop-up window, click "upload" and then upload files from computer to the learning platform (see Figure 6).

On the interface of "Lectures" module in edit mode, the outline of the course offered can be defined. The procedure is as follows:

1. Type the lectures title and click add button
2. Use "arrow up" and "arrow down" buttons to arrange the sequence of lectures.
3. Use "arrow left" and "arrow right" button to define folder/sub-folder
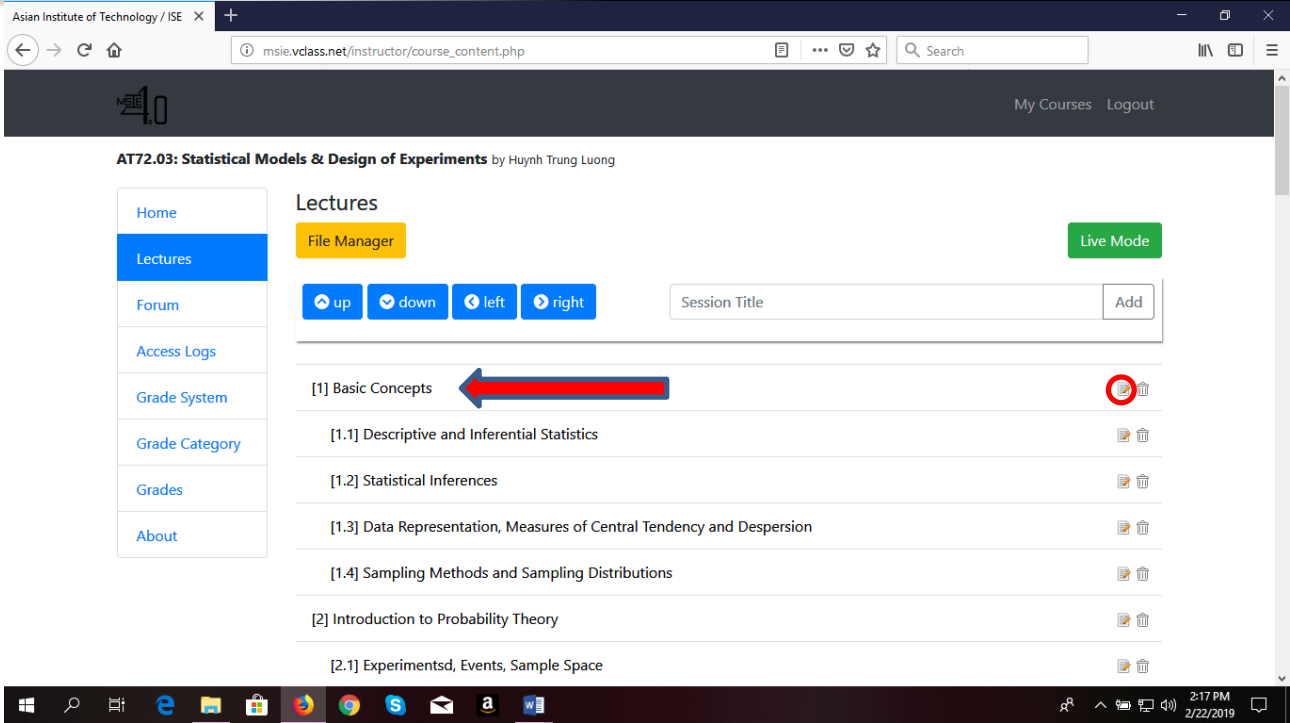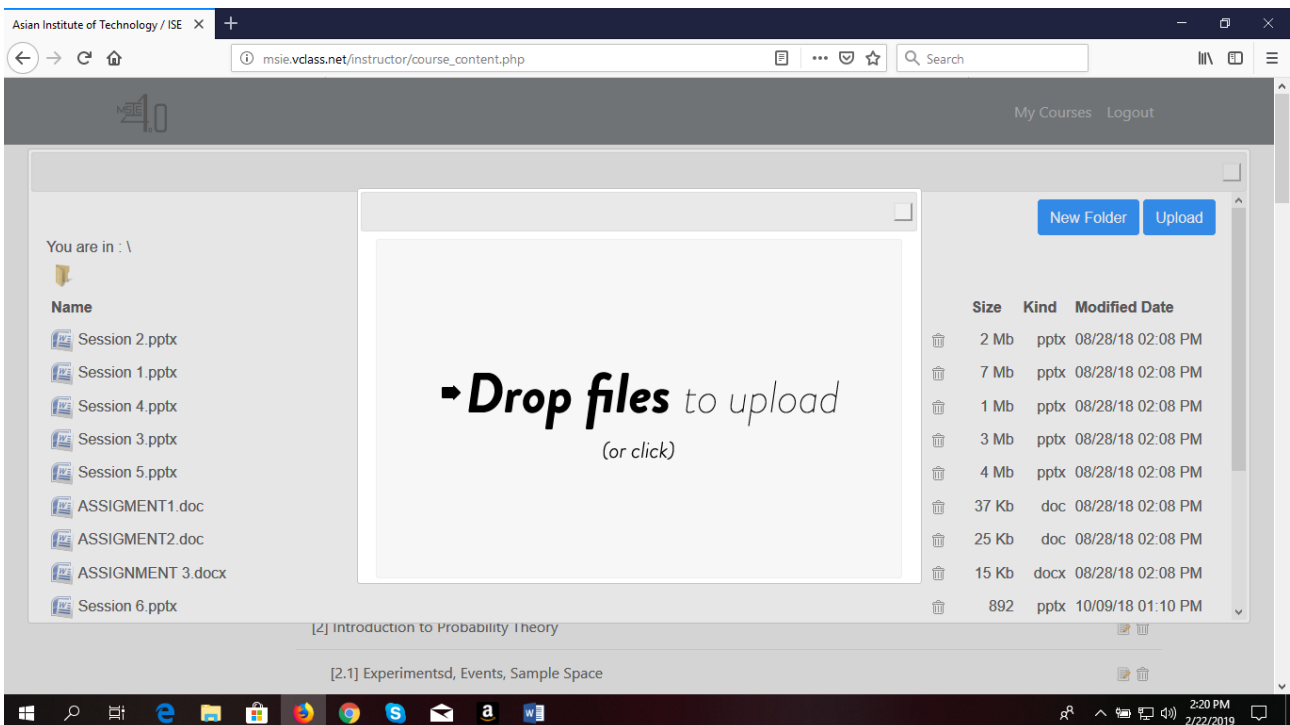
Figure 5.   Interface of "Lectures" module in edit mode

Figure 6.   Interface of for uploading lectures/documents on to the learning platform

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To link the content that has been uploaded using File Manager to a session title in the course outline or to revise the session title/linked content, the procedure is as follows:

1. In edit mode, click the edit icon that encircle red in Figure 5.

2. On the pop-up window (see Figure 7) edit the session title or lecture title.

3. On type field there are 2 types

   - Content file – for documents, ppt, pdf, etc.. and video recording lectures
   - Live Lecture – for live class using video conferencing system (MCONF)

4. Click browse if selecting the "content file" from step 3 and select the appropriate document from file manager.

5. Available Date – Set the time duration for which the lecture is available.

6. Content type - by default the content type is set to Normal, another option is to select SCORM (Sharable Content Object Reference Model) compliant type so that the document can be easily transfer to other learning management systems (LMSs)

7. Score category can also be specified here if the session/lecture title is declared under "Grade Category" module for determining final grade of the students enrolled in the course.
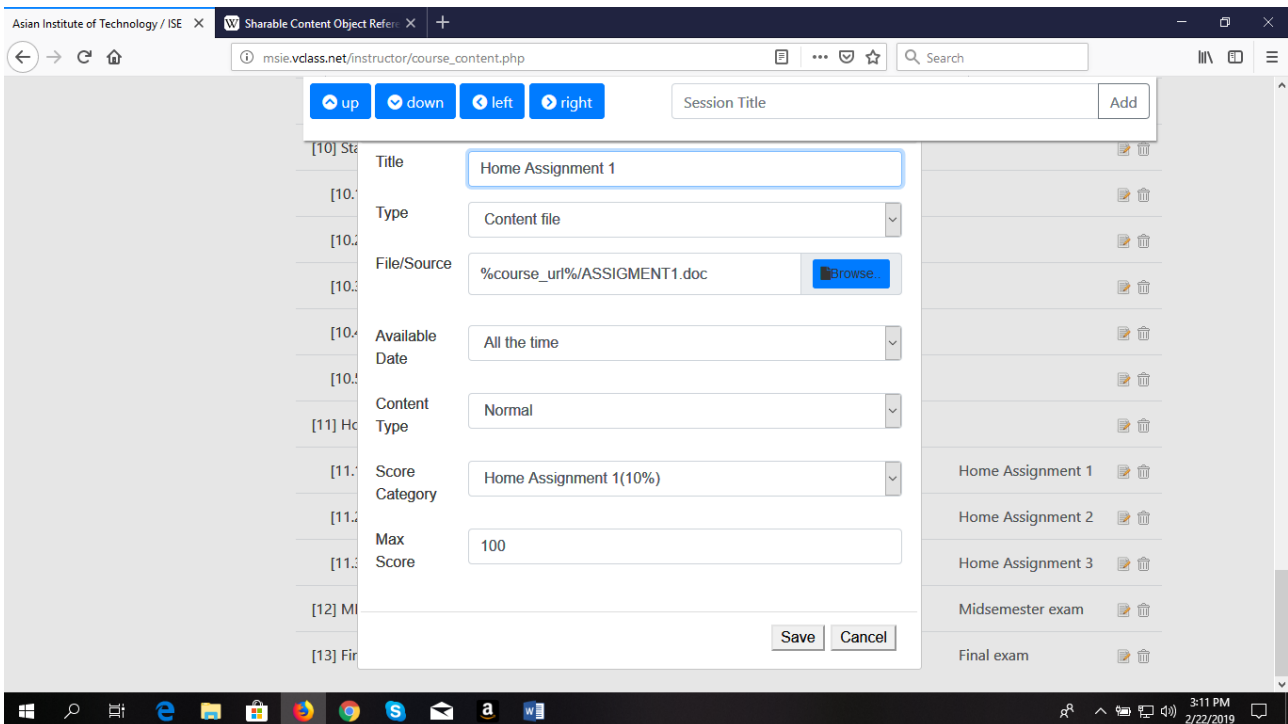

Figure 7.   Interface to define a session/lecture title in the course outline

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3.4 Peer Grading Menu

The Peer Grading Menu will be available only to student Interface. The instructor can see the Peer Grading Result by accessing the Grading Result Category. Please refer to 3.6 under Grades Module.

3.4.1 Create/Add Peer Grading in Grade Category (Instructor Interface)

In these module (see figure 14), In order to use the group assessment function. The instructor must create/add Peer Grading in Grade Category section and assign the desired percentage.

Figure 8 Create/Add Peer Grading in Grade Category

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3.4.2 Adding Peer Grading in Lectures (Instructor Interface)

The instructor must create/add peer grading activities under lectures menu. Once created click edit and change the value of score category into the Peer Grading created from the task 3.10. And follow the corresponding configuration in below figure.
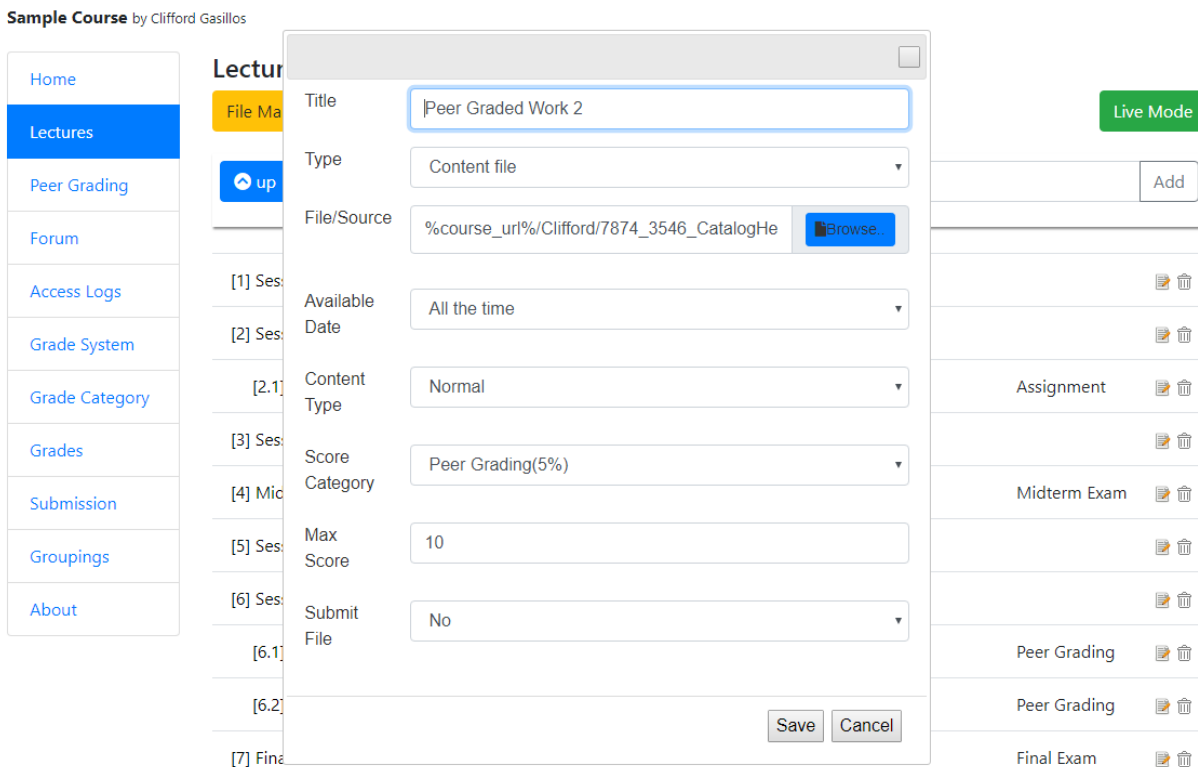
Figure 9 Assigning score category

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3.4.3 Accessing Peer Grading Module (Student Interface)

The student may evaluate their co-member-co-group member in the Peer Grading Menu. They can see in the drop-down menu the available lecture that has scored by peer grading in grading category.
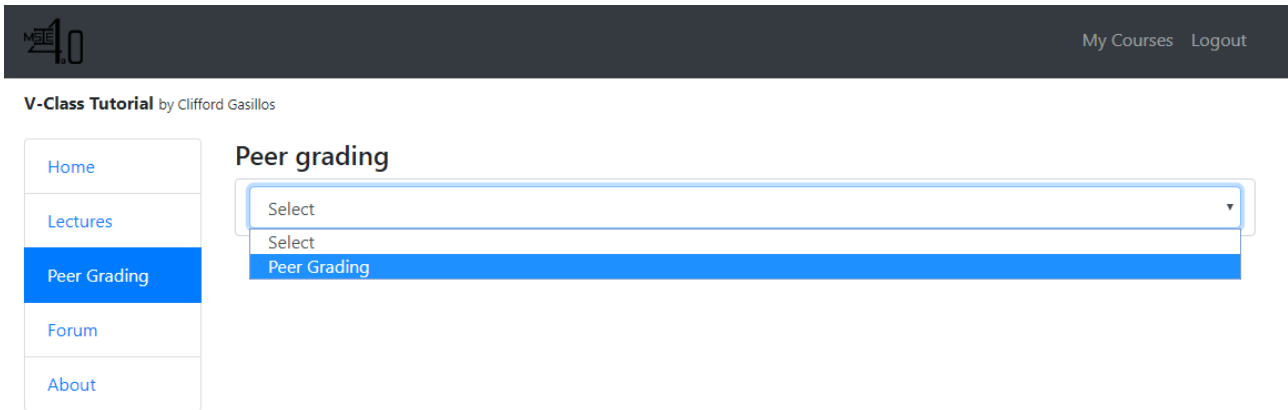
Figure 10 Accessing Peer Grading Module

3.4.4 Assess your co-member/co-group (Student Interface)

The student may evaluate themselves and co-member. In this case, In the grading score category I set was maximum of 10 points. The student must click twice the submit button and wait the notification "You have already submitted."
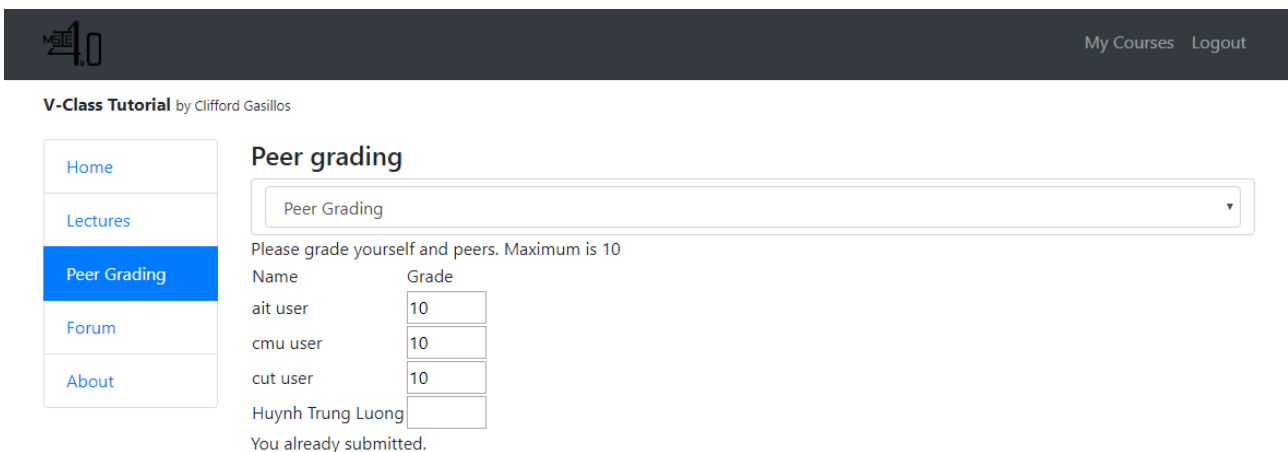
Figure 11 Student Assessment in Peer Grading

3.5   Forum Module

On the interface of the forum module (see Figure 8), the teacher can create different rooms for communication with students and among students (e.g., Discussion, Asking for Help,etc.). Activities happened in this forum module can be observed and monitored in real time.
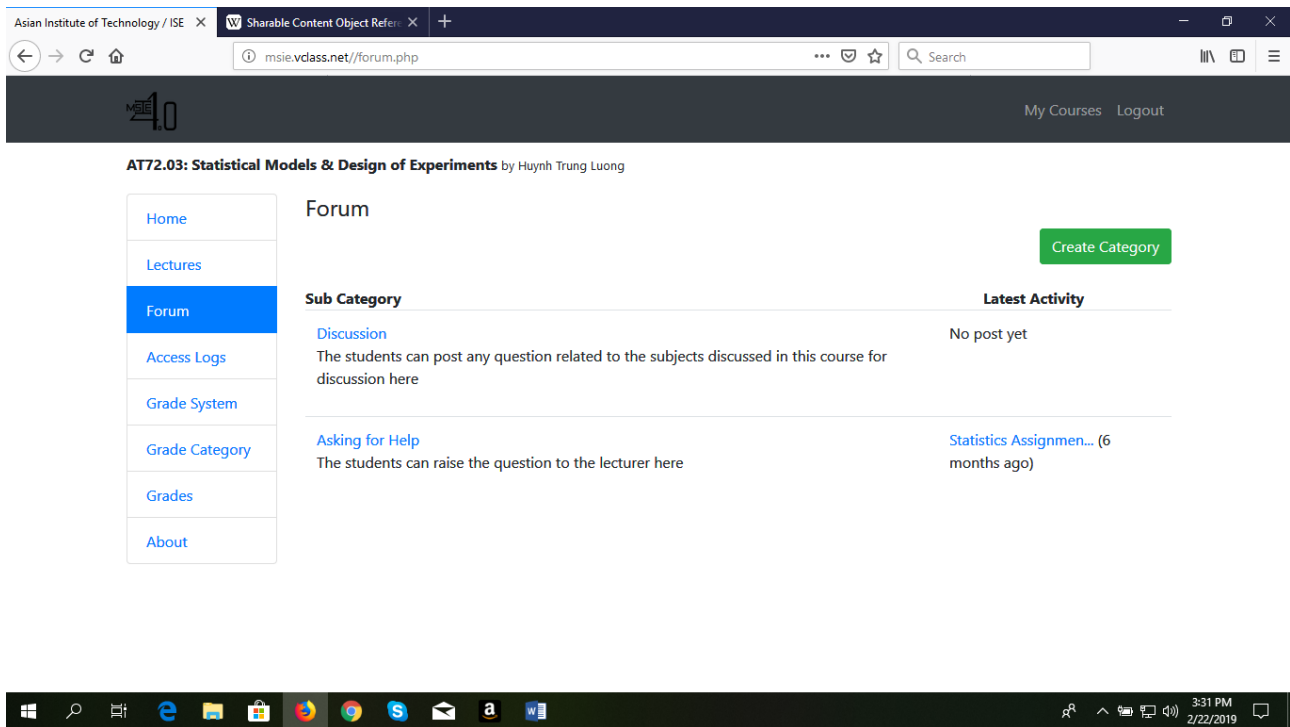
Figure 12.   Interface of the Forum module

3.6   Access Logs Module

In this module (see Figure 13), the number of times a student accessed a specific session of the course is recorded. By clicking on the name of a student, the duration of time he/she spent in each access is also presented.

3.7   Grade System Module

In this module (see Figure 14), the grading system (i.e., A, B+, B,…) used for the course will be defined based on the cumulative percentage a student received at the end of the course. The tentative grade of a student will be automatically determined following the grading system defined in this module based on their performance in different grading criteria of the course (e.g., home assignment, individual/group projects, presentation, exams, …).
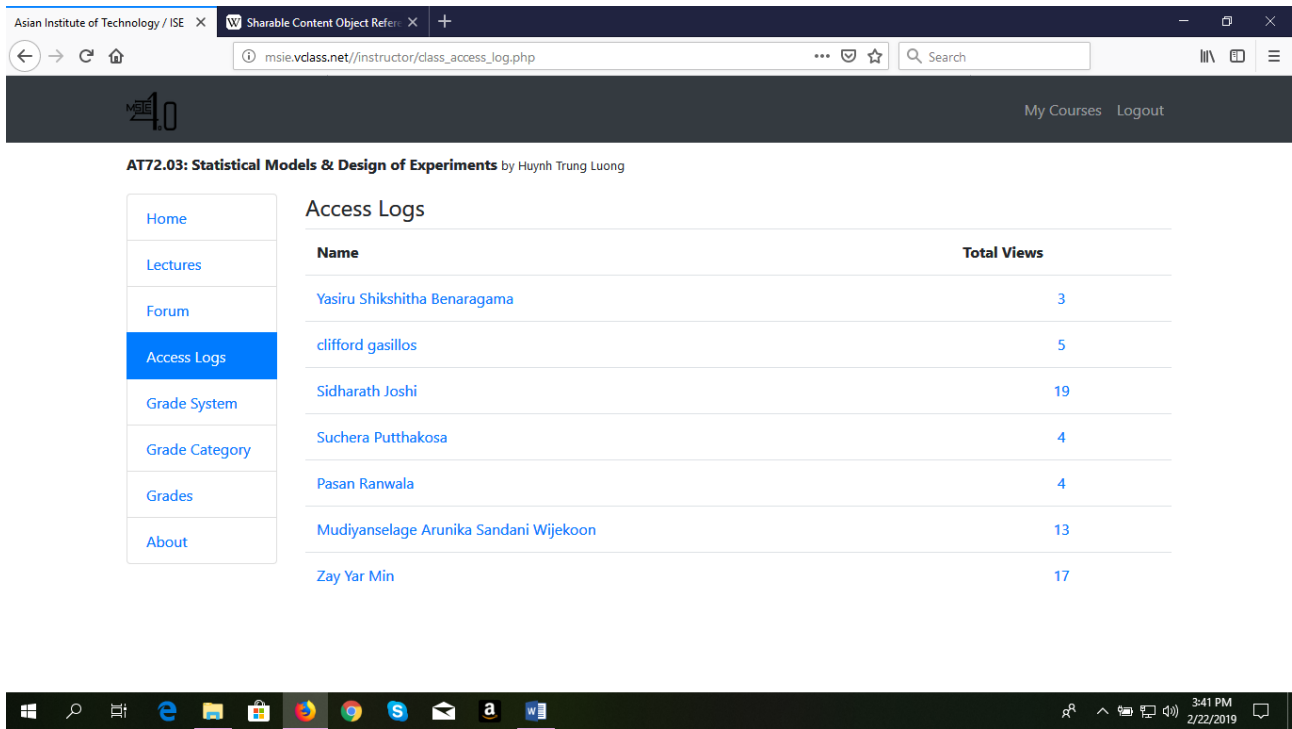
Figure 13.   Interface of the Access Logs Module
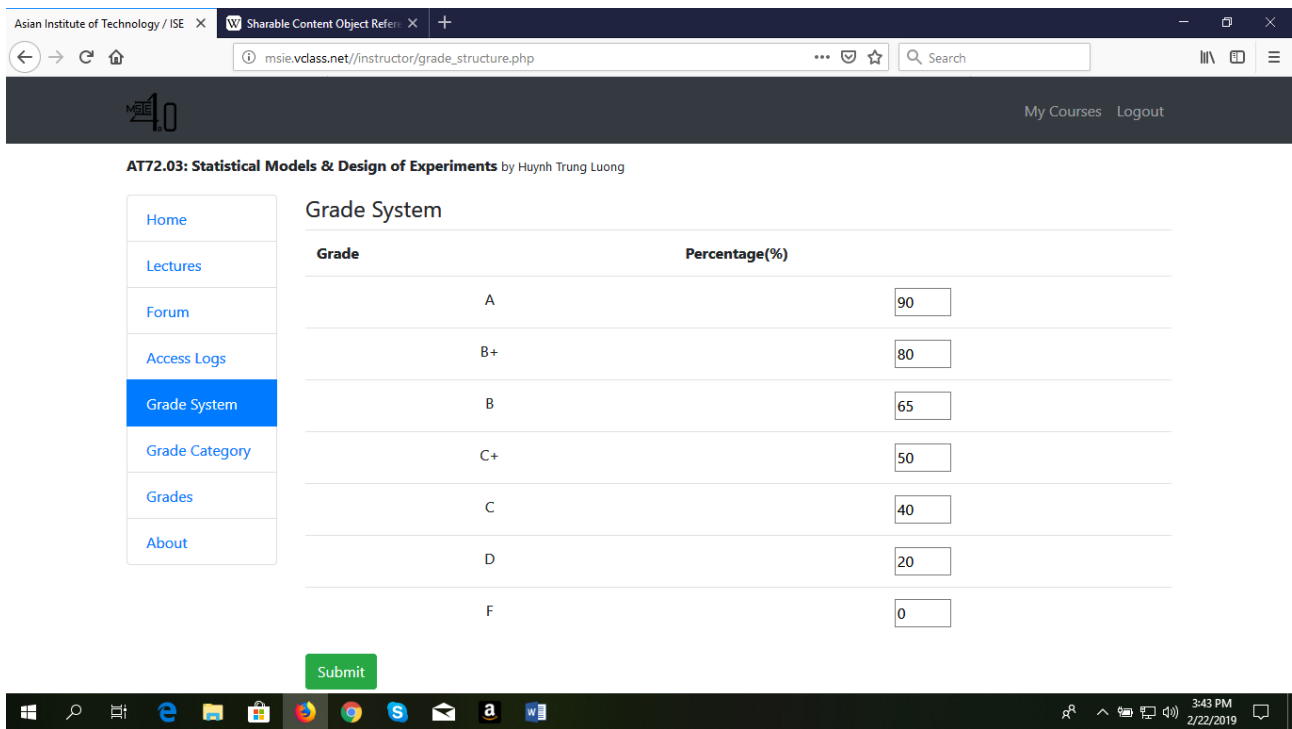
Figure 14.   Interface of the Grade System Module

3.8 Grade Category Module

In this module (see Figure 15), the performance criteria used for calculating the tentative grades of students are defined.
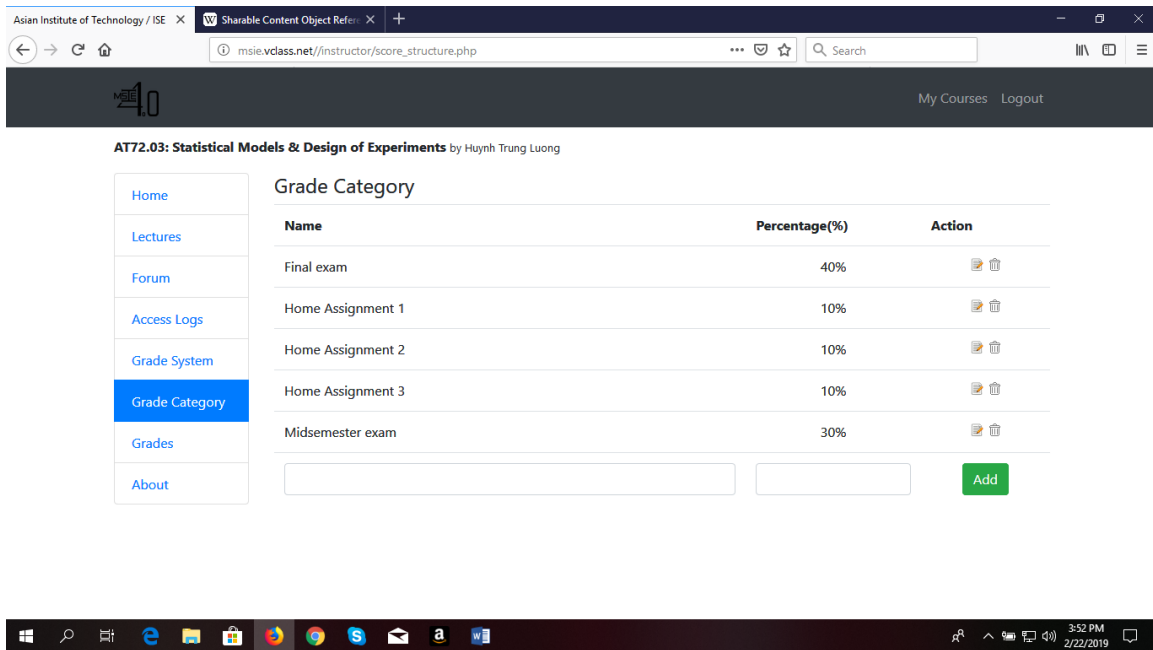

Figure 15. Interface of the Grade Category Module

3.9 Grades Module

In this module (see Figure 16), the tentative grade of the student will be defined based on the weighted cumulative percentage of all performance criteria. But, the final grade can be adjusted.
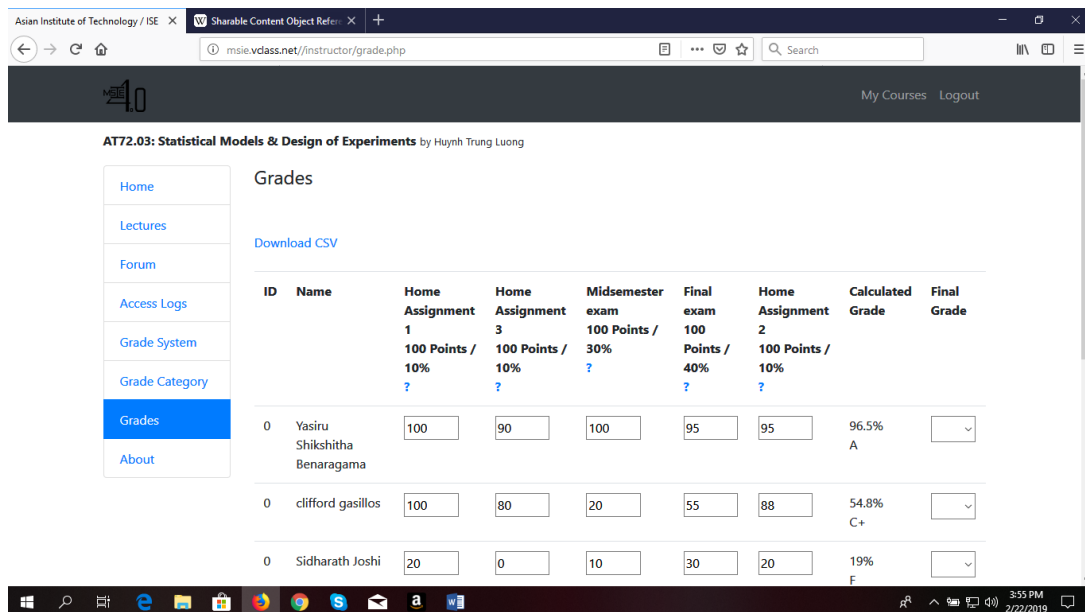
Figure 16. Interface of the Grades Module

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3.9.1   Viewing Peer Grading Result

To view the assessment result of each student you can accessed it under grades menu. Then below of the page you will see "Peer Grading and a drop-down menu" and select the peer graded category as per figure 16

Figure 17

Once the appropriate category has been selected the grades for each group will appear. See below figure

Peer Grading

Peer Grading (Peer Grading - 10%)

Group: Group 1

Name	ait user	cmu user	cut user	Huynh Trung Luong	Score
ait user	10	10	10		7.5
cmu user	9	10	9		7
cut user					0
Huynh Trung Luong					0

Figure 18

3.9.2 Manual Grading Input for Peer Grading (Instructor Interface)

The instructor must manually put the final score result of Peer Grading (Figure 18) for "ait user" which is 7.5 points to the grading system (figure 18) then click save button to save the changes.

Grades

Download CSV

Name	Final 50 Points / 50% ?	Assignment 10 Points / 10% ?	Peer Grading 10 Points / 10% ?	Calculated Grade	Final Grade
Huynh Trung Luong	0	0	0	0% F	
tomasz nitkiewicz	0	0	0	0% F	
ait user	30	8	7.5	45.5% C	
cmu user	0	0	0	0% F	
cut user	0	0	0	0% F	

Figure 19

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3.10 Submission Module

In these Module, The instructor can create/assigned a submission function like home assignment under his lecture session. The instructor can view the submitted files by the student's in the submission menu tab.

Figure 20

3.10.1 Create Submission in Lectures Module (Instructor Interface)

To create a submission session in your lecture. Go to Lecture Menu > Edit Mode. In this case I have Assignment in lecture's session and wanted to be my submission link. From that session click edit icon as shown in figure 21 with a red arrow.
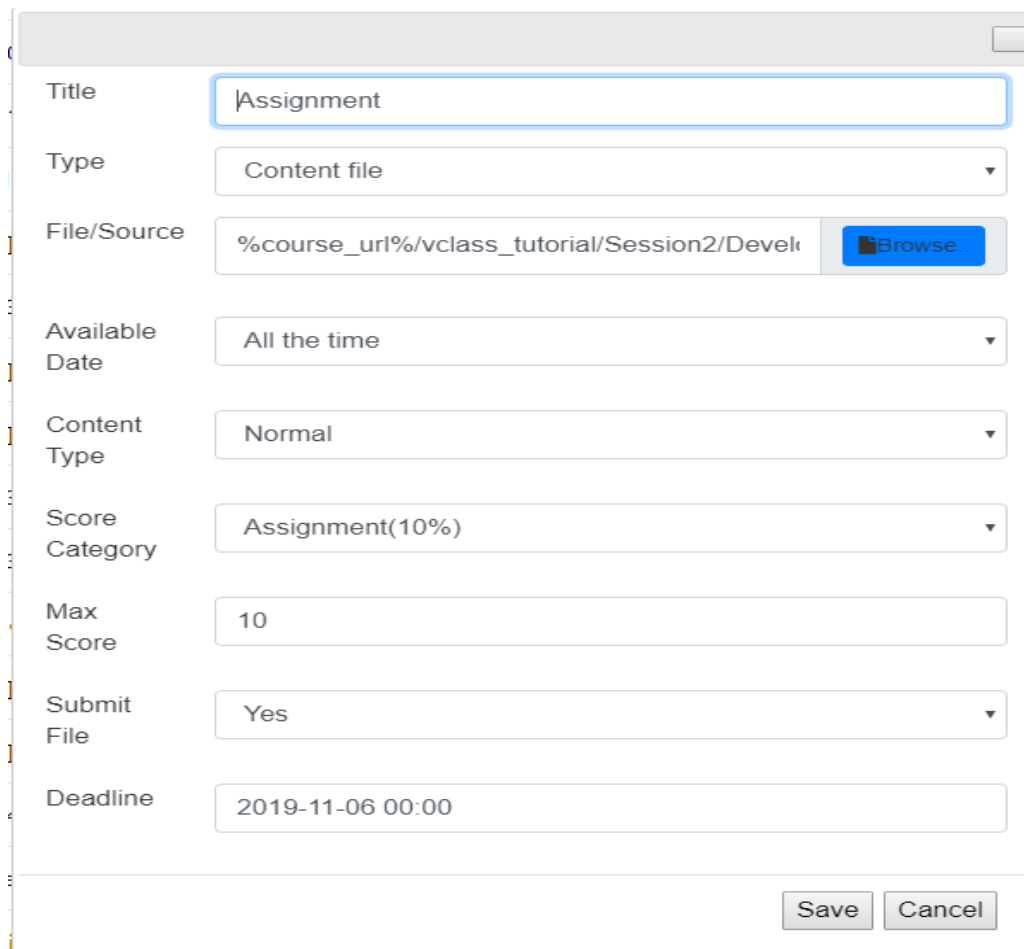

Figure 21

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3.10.2 Parameters for Submission Session (Instructor Interface)

Setting the parameters will vary depending on the instructor settings (e.g Score Category, Max Score, Available Date and Deadline submission.)

1. Type – Content file
2. File Source- Choose any file source in your file manager
3. Available Date – means the availability of submission session.
4. Content Type – Normal
5. Score Category – Assignment
6. Max Score – Depend on the Score Category
7. Submit File – Yes
8. Deadline – You can set a deadline before your next class session.

Figure 22

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3.10.2   Viewing the Submitted files (Instructor Interface)

To view the submitted file by the student the instructor can accessed in Submission Menu. Then from the drop-down menu select the appropriate session title that has a submission link. In this case, ait user only has submitted the assignment. The instructor can download the submitted file to verify if the submitted file is correct.
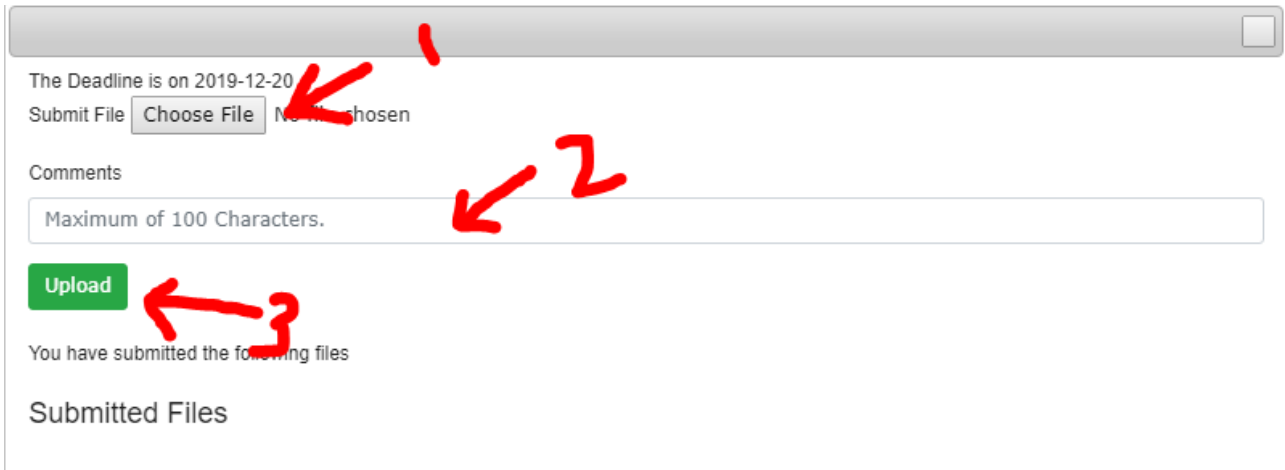
Figure 23

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3.10.3   File submission   (Student Interface)

To submit a file go to lectures module > Select the session that has submission link. Once the student clicked the following session. The upload box will appear

1. Upload your file in File Manager by accessing lectures module > File Manager
2. Go to lectures > Select the session that has submission link (e.g Home Assignment)
3. Choose the file that was uploaded from step 1
4. In the Comment box type the student id, message or etc.
5. Clicked Upload button 2 times or until you see the message you file has been submitted.

Figure 24

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Once the submission link has ended in the student interface. They will see the following notification or message. See in figure 25 below

Submission has already ended on 2019-11-06.
You have submitted the following files

Submitted Files

Figure 25

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3.10   Groupings Module

In these module (see figure 26), The instructor can create group and assign each student as per desired group. The grouping menu will appear only into instructor account.

Figure 26

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3.10.1 Create Peer Grading Session (Instructor Interface)

1. Lecture Module > Edit Mode > In Session Title type Peer Grading then click add button

2. Locate for the Peer Grading Session then click edit icon
3. Then Follow The parameters in figure 27 and save.

Please note that if you could not find in the Score Category the Peer Grading. Kindly check your Grade Category module if you created the Peer Grading. Otherwise you need to create and adjust accordingly the percentage.

Figure 27

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3.10.2 Create Group in Peer Grading Session (Instructor Interface)

1. Groupings Module > In Drop-down menu select "Peer Grading) > Create Group

Groupings for Peer Grading

Peer Grading (Peer Grading - 10%)

Create Group

2. Enter the Group Name

Enter Group Name

Group Name

SUBMIT   CANCEL

3. You can assign the student by navigating the drop-down menu then click Assign button.

No Group

ait user [▼] Assign

Group: Group 1
*   cmu user 🗑
*   cut user 🗑
*   Huynh Trung Luong 🗑

4. The instructor can re-assign the following student to the different group by clicking delete button 🗑

    The Instructor account can only do the following in this module;

    1. Create Group
    2. Delete Student from the Group
    3. Re-assign Student in another group

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3.11 About Module

In this module (see Figure 13), basic information about the course (e.g., course objective, course learning outcomes, etc.) are presented.
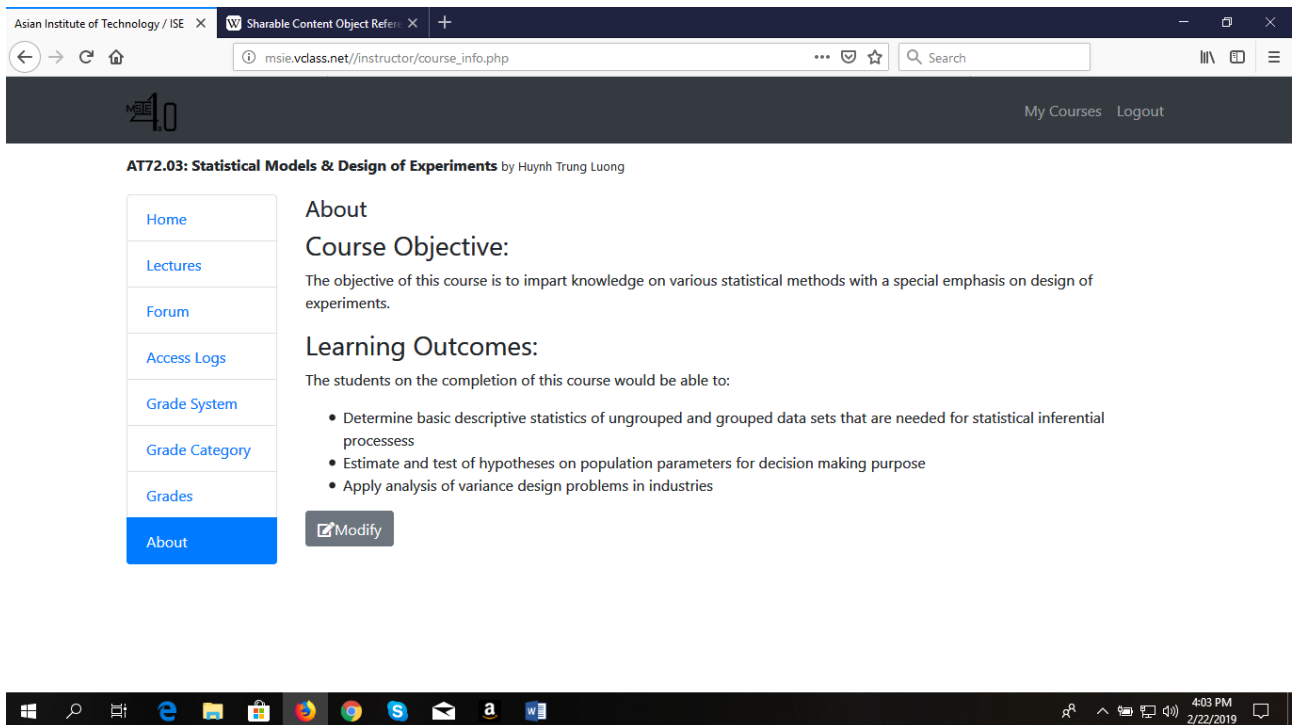

Figure 28

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