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Participatory workshop

Cairo, 29-30 November 2016

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Problem-Based Learning and e-Learning Approach for Teaching Soil Science Course

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Outline

- Introduction
- Objectives
- Problem – based learning
- e-Learning
- Course Delivery
- Course Design
- Use of Technology
- Restructuring Lectures
- The Course on Blackboard
- The Course on Moodle

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Old Chinese Proverb

Tell me and I will forget,
show me and I may remember,
involve me and I will understand!

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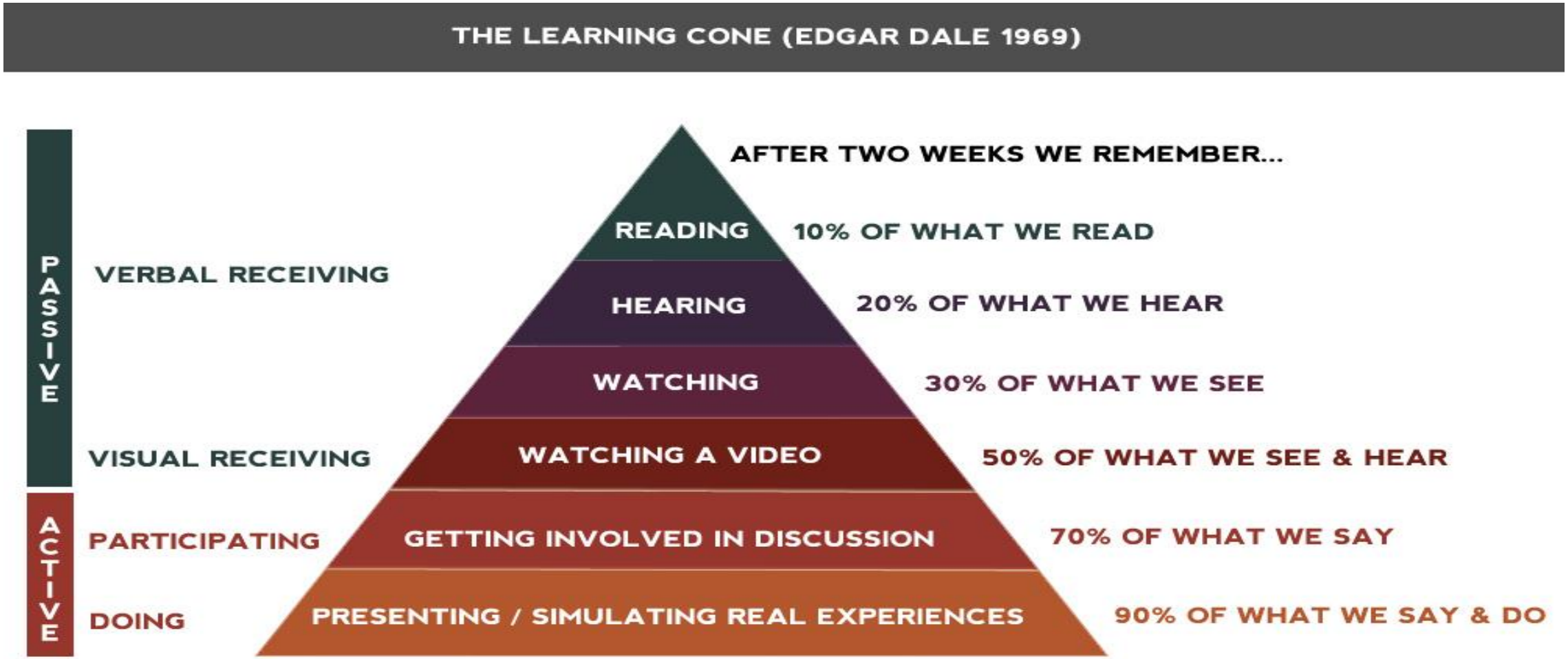
Different types of Learning Experiences – Dale's cone



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Objectives

1. Increase student motivation and interest in subject areas
2. Increase student recall of knowledge and retention
3. Prepare students to think critically and analytically
4. Development of life-long learning skills

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Problem-based learning (PBL)

+

E-learning

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Problem-based learning (PBL)

Problem-based learning (PBL) is an teaching method that challenges students to "learn how to learn," working cooperatively in groups to seek solutions to a problem.

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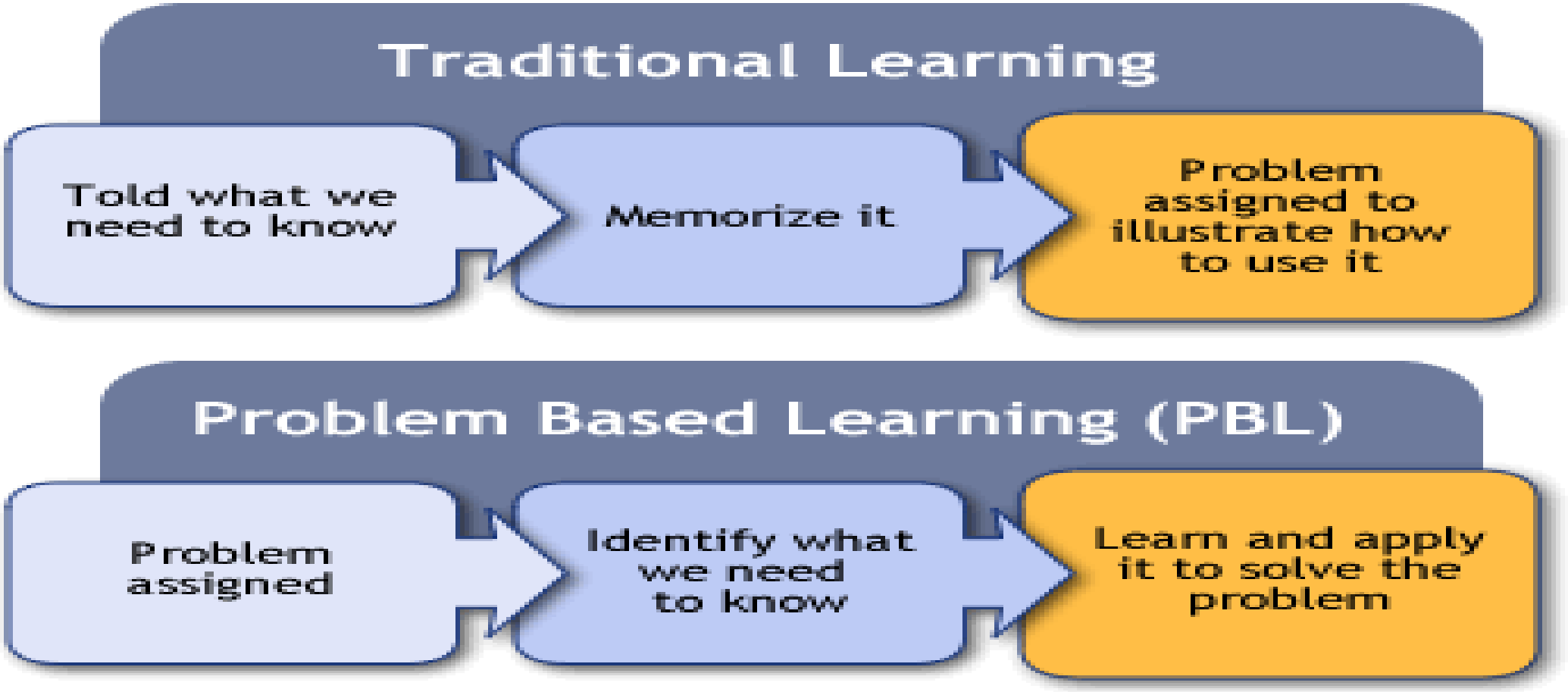
Problem-based learning (PBL)



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PBL Process

1. students divided into groups.
2. problem is presented and discussed
3. students identify what is known, what information is needed, and what strategies or next steps to take
4. individuals research different issues, gather resources

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PBL Process

5. resources evaluated in group
6. cycle repeats until students feel the problem has been framed adequately and all issues have been addressed
7. possible actions, recommendations, solutions, or hypotheses are generated
8. tutor groups conduct peer/self assessments

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Advantages of PBL

1. greater recall of knowledge and retention
2. interdisciplinary, can require accessing and using information from a variety of subject domains; better integration of knowledge
3. development of life-long learning skills: how to research, how to communicate in groups, how to handle problems

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Advantages of PBL

4. increased motivation, interest in subject areas
5. increased student-student interaction, and student-instructor interaction
6. PBL prepares students to think critically and analytically, and to find and use appropriate learning resources.

E-Learning

- **Electronic learning** or **E-Learning** is a term used to describe education that takes place using computers, the Internet and other technologies, such as CDs and DVDs.
- Students can experience E-Learning in courses they take on campus or in courses taken through correspondence or another form of distance delivery offering.
- E-Learning can either be synchronous (where students are online all at the same time) or asynchronous (where students are online at different times at their own convenience).

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E-Learning

- The E-Learning based courses can illustrate problems effectively and support the communication and collaboration necessary for effective problem solving.

PBL + E-Learning

When we bring PBL and E-Learning together we have an excellent way to get our students using online global knowledge as well as developing the necessary flexible acquiring knowledge skills.

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Course Delivery

- Principles of Soil and Water course was developed and delivered on-line employing the Problem-Based Learning as active learning methodology, supported by Blackboard and laptop computer technologies.

- Delivering the course using PBL shifts the focus to student-centred learning by assigning student teams to work and report on a number of current soil science themes.

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Course Design

- The course was developed around four learning modules:
  Module 1: Soil Genesis
  Module 2: Soil physics
  Module 3: Soil Mineralogy, Chemistry and Fertility
  Module 4: Soil Survey and Classification
- Each learning module was four weeks' duration, except module 4 was two weeks.
- Each module was structured as a short project in which students work to understand, explore, and recommend contributions to soil science goals.

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The Structure of Module 1 - Soil Genesis

Week-1	Week-2	Week-3	Week-4
Meeting 1 **Course Introduction** 1. Introductions 2. Distribute outlines 3. Demonstrate Blackboard Resources 4. Mini-lecture: Introducing Problem-Based Learning 5. Assign PBL readings	**Meeting 3** **Problem Exploration 1** 1. Team work and consultations * Lab -2	**Meeting 5** **Problem Solving 1** 1. Team work and consultations * Lab -3	**Meeting 7** **Outcomes & Solutions** 1. Team Meetings 2. Student Presentations & Report submission * Lab -4
Meeting 2 **Team formation and Problem Assignment** 1. Group formation 2. Problem Assignment 3. Team work session 4. Mini-Lecture: **Introduction, Ecological Functions, Rocks and Minerals,** Chapter 1, 2 and hand out * Lab -1	**Meeting 4** **Problem Exploration 2** 1. Mini-Lecture: **Soil Formation,** Chapter 4 2. Team work and consultations	**Meeting 6** **Problem Solving 2** 1. Mini-Lecture: **Soil Development,** Chapter 4 2. Team work and consultations	**Meeting 8** **Module Test:** Chapters 1, 2, 4

Problem of Soil Genesis Module

Problem one: Soil Genesis Module

What are the soil development consequences when some area in arid region will be changed from desert land to agricultural land within the next century?

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Problem of Soil Genesis Module

Introduction

Soil is a product of the environment. The study of soils in their present stage is of considerable importance to reveal processes and history of soil development. To understand soil development as processes of the past is a necessity in order to predict soil development in the future. Only when the processes are known can the consequences of the intensive use of agricultural land be understood. Detailed knowledge of soil processes is necessary if the consequences of extensive land use changes are to be predicted.

Objectives

Discover the factors and processes of soil formation. Find out why rock and mineral types are important in creating our productive soils. Why are there soil layers and how many are there in soil.

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Problem of Soil Genesis Module

Recourses

1. **Textbook: Pedospher and Its Dynamics**
   Chapters 1, 2 and 4
2. **Soil Formation-1**
   http://library.thinkquest.org/J003195F/soil.htm
3. **Soil Formation-2**
   http://www.harcourtschool.com/activity/dirt/
4. **Soil**
   https://blackboard.uaeu.ac.ae/webapps/portal/frameset.jsp?tab=courses&url=/bin/common/course.pl?course_id=_19825_
5. **Factors Affecting Soil Development**
   http://www.uwsp.edu/geo/faculty/ritter/geog101/modules/soils/soil__development_soil_forming_factors.html

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Problem Group Discussion

Use of Technology

- Blackboard and laptop computer technology have been employed in all class session.
- Many additional technology, activities and resources links have been added to provide depth for student exploration and use following graduation.

Use of Technology

- Additional technology, activities and links include:
  1. educational videos,
  2. internet sites & links and browse documents,
  3. communication/interaction between faculty/students & student/student (using e-mail, new groups, white board and broadcast),
  4. online laboratory skills virtual resources and hands-on experience during the laboratory time,
  5. Net.OP (class management software) for monitoring student activity in class,
  6. PowerPoint for basis of course and student presentations, and
  7. Chime Plug-In for 3-D silicates minerals visualization.

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Restructuring Lectures

- The lecture time is 50 min twice a week.
- Based on the activities in each class, the distribution of class time is as follow:
  1. 20 min. mini-lecture or team work,
  2. 15 -20 min. consultation or watching educational videos or/and accessing web sites searching for specific information,
  3. 5-10 min. taking online quizzes,
  4. 5 min. homework/assignment,

Restructuring Lectures

- interacting with instructors or classmate, e-mail, new groups and browse documents, anytime, and
- doing Lab exercises (hands-on experience) during the laboratory time.

(Problem Solution Presentation)

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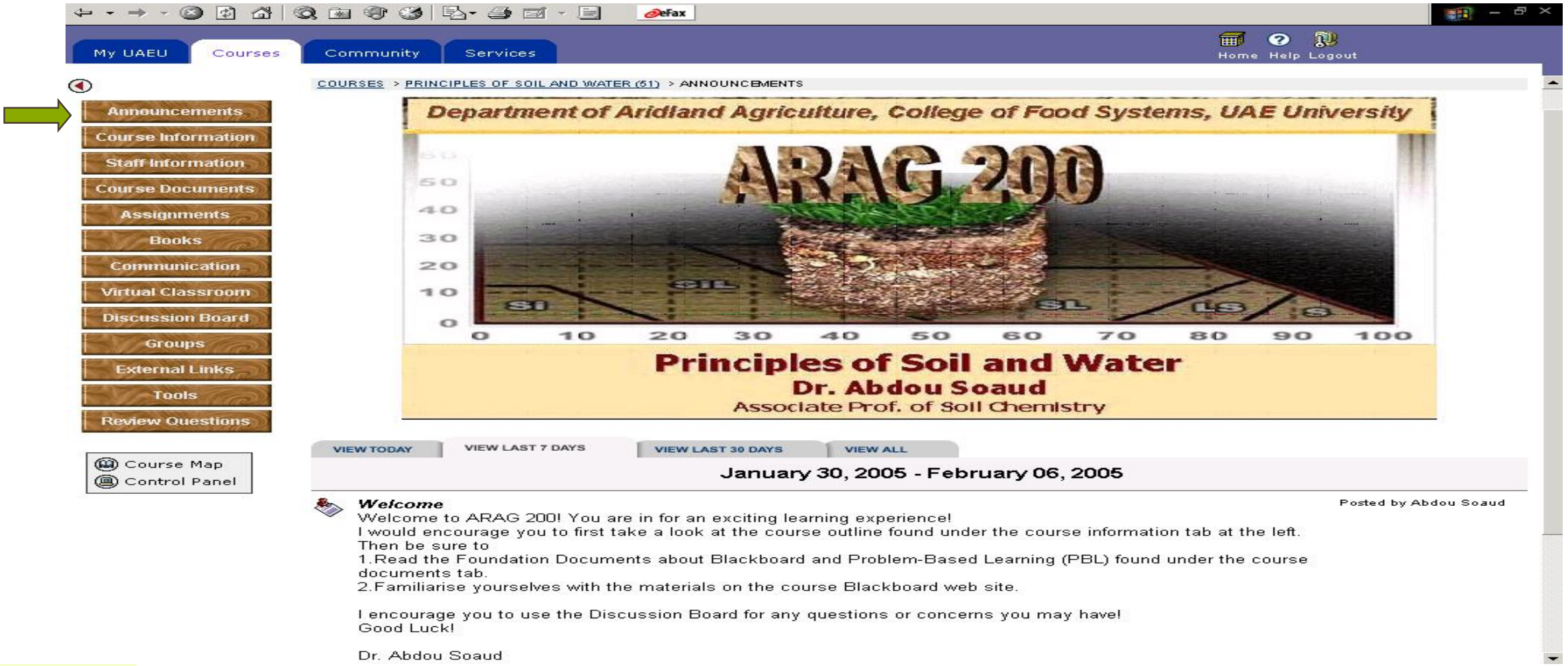

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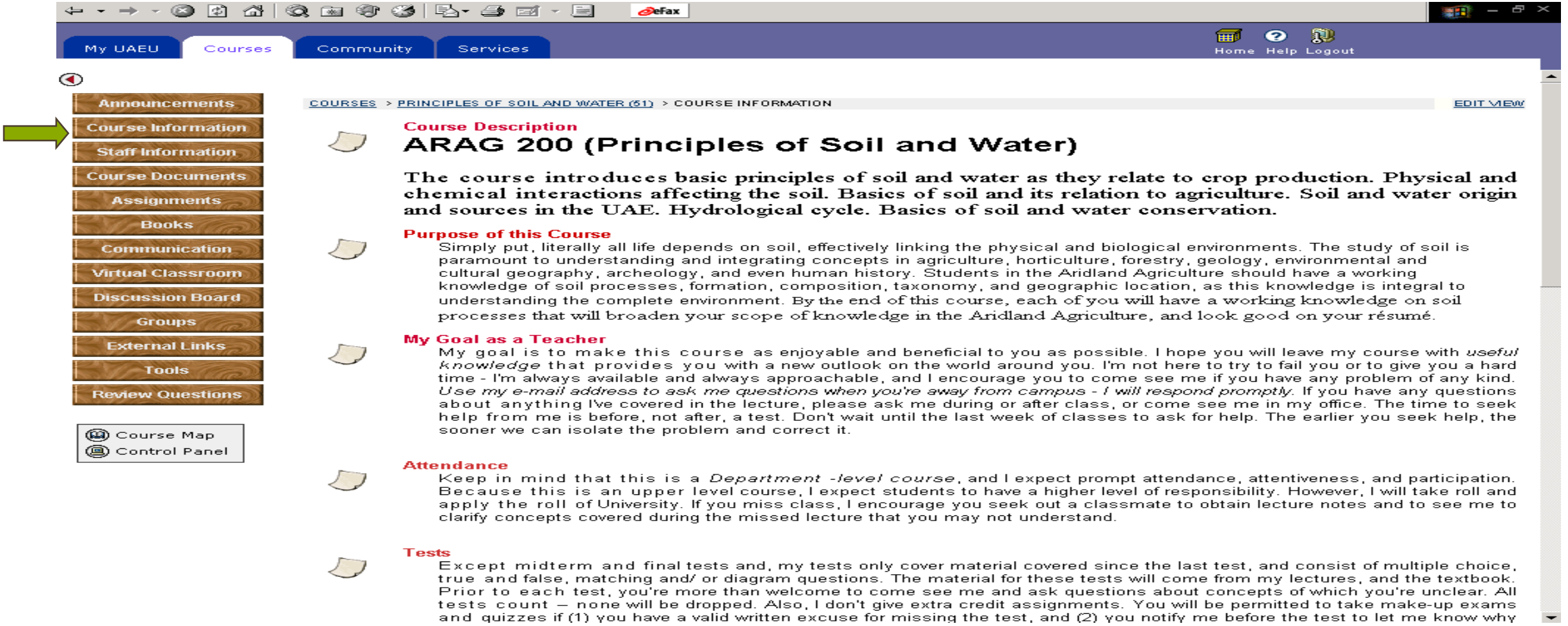

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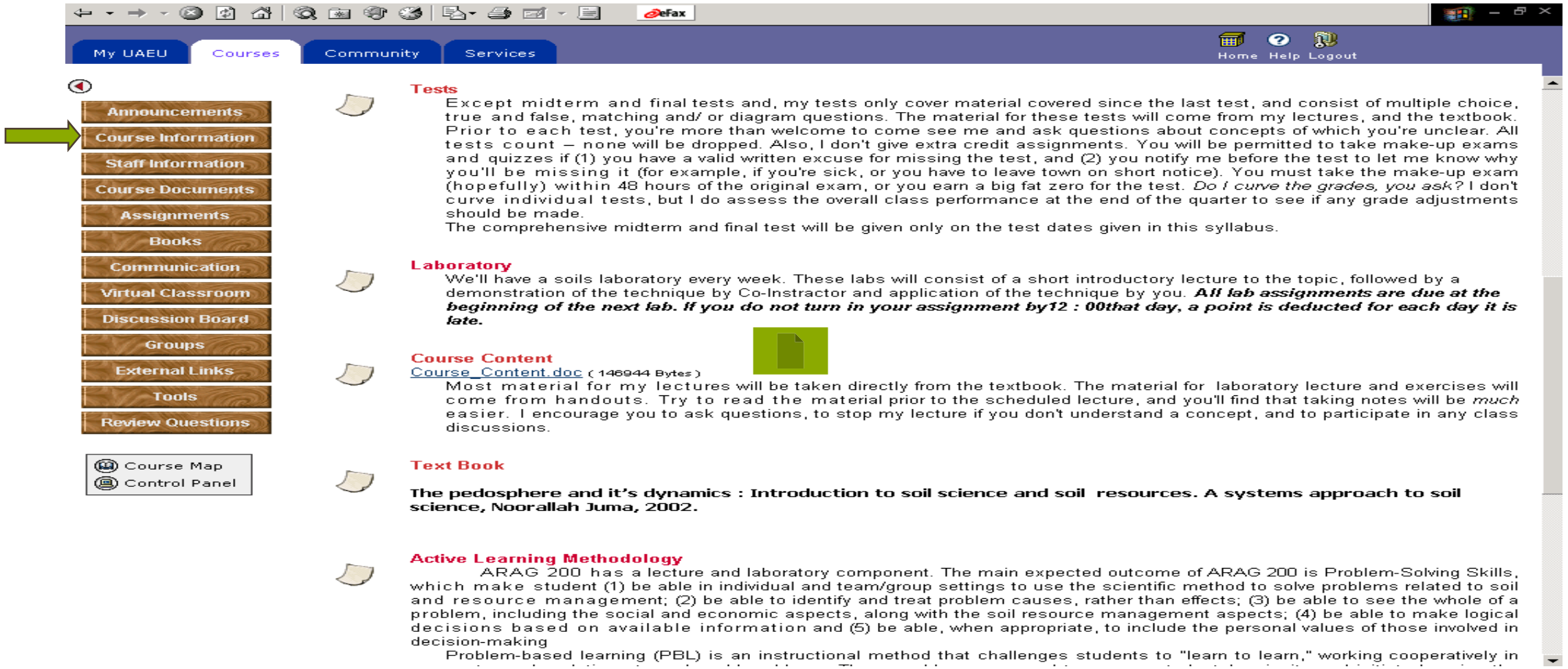

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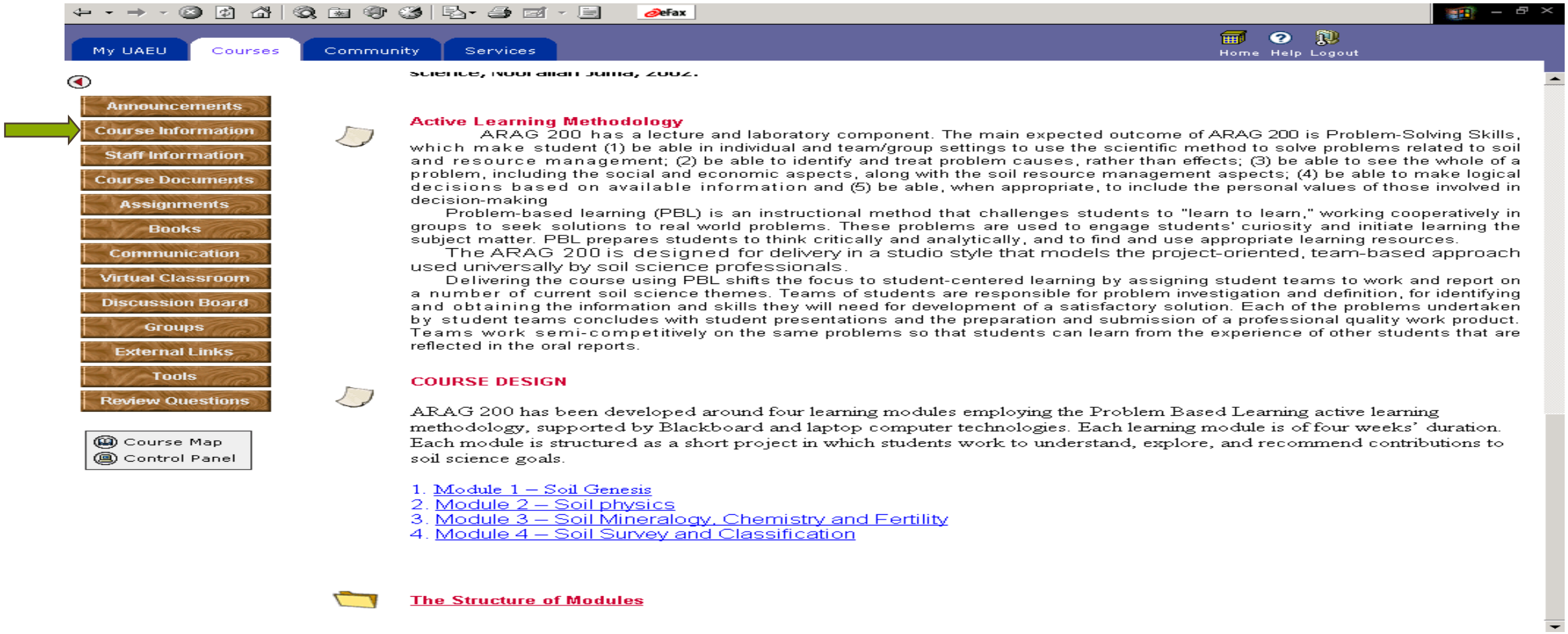

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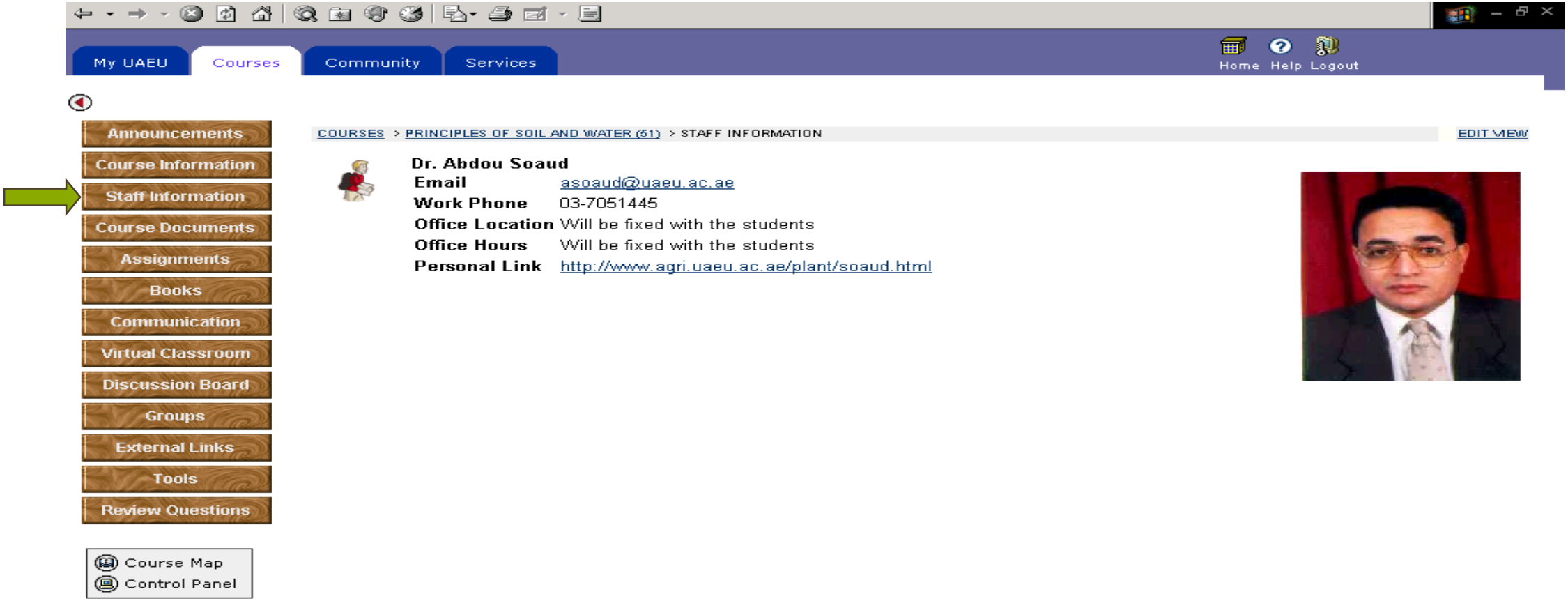

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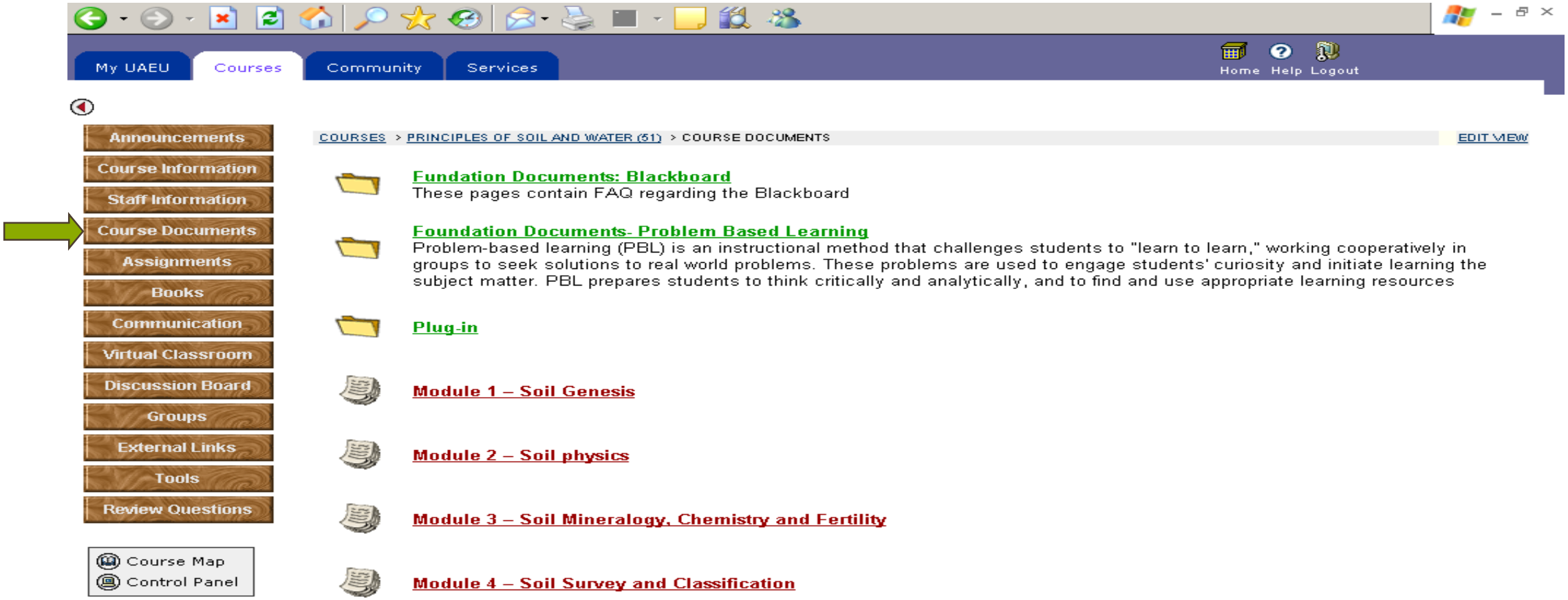

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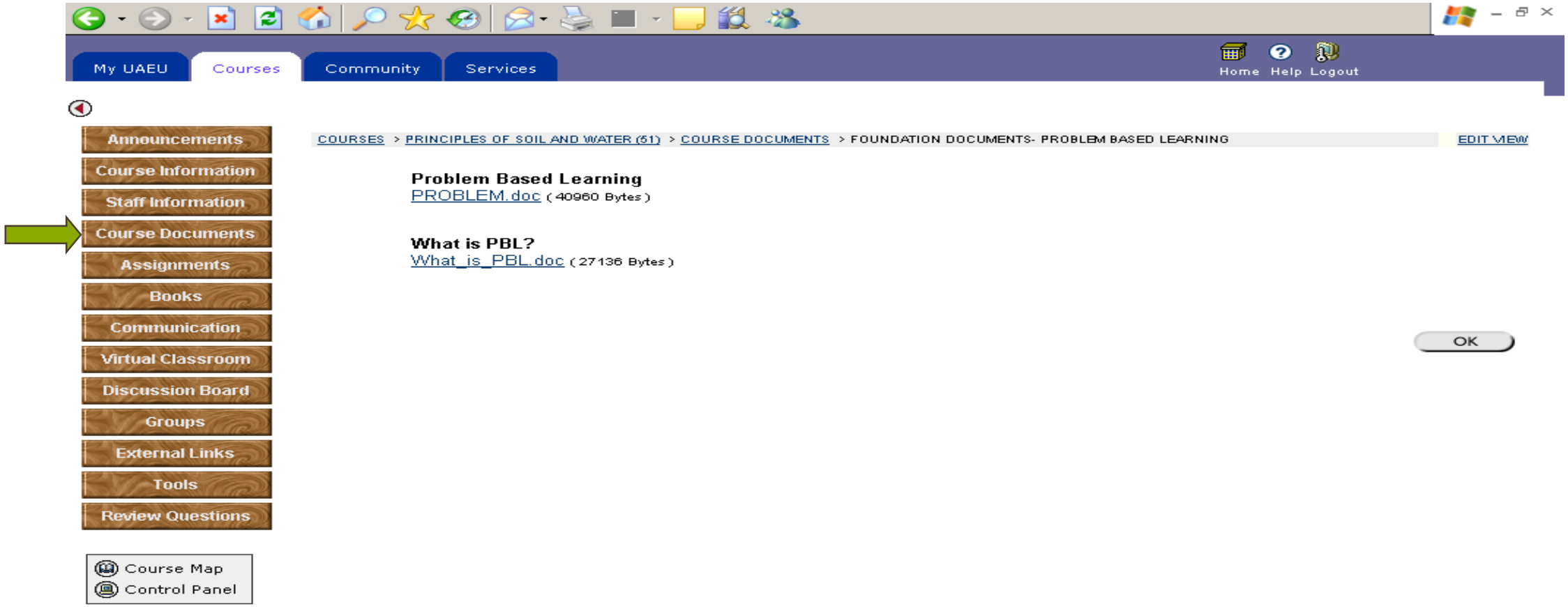

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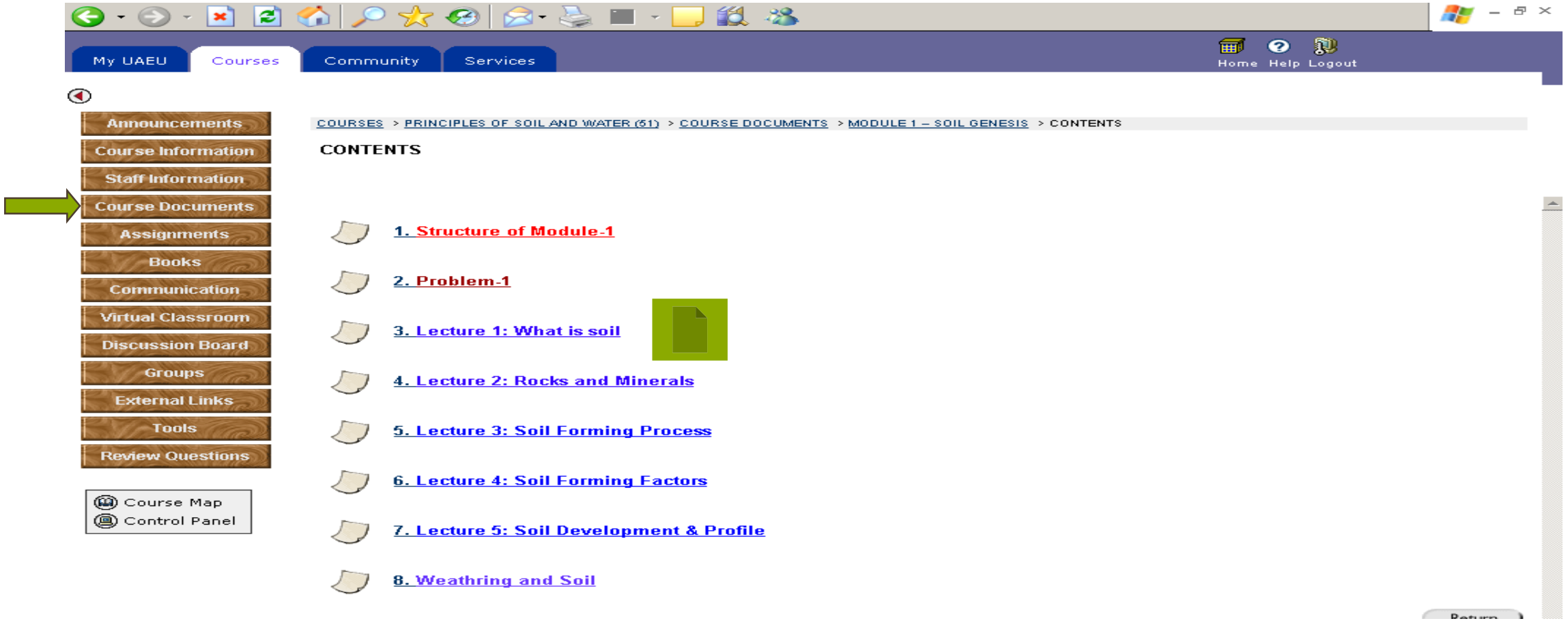

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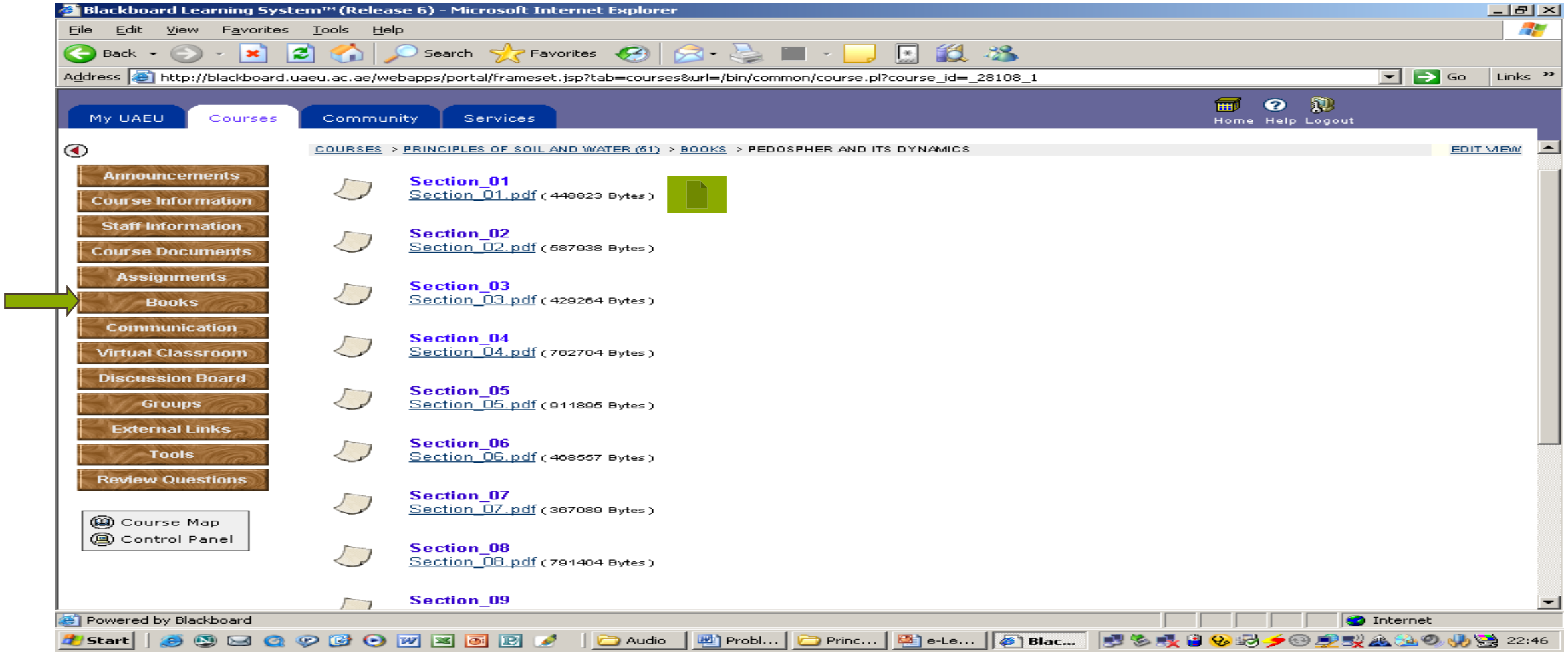

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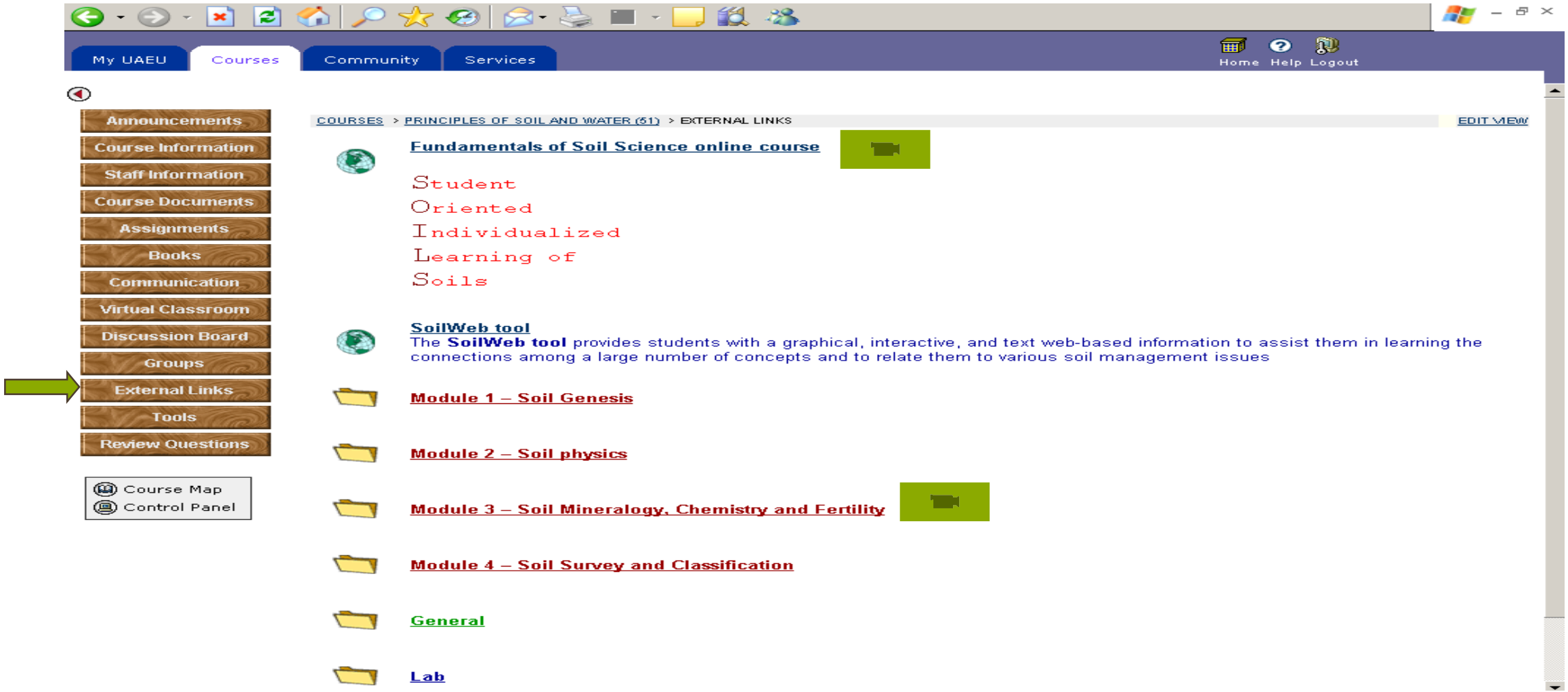

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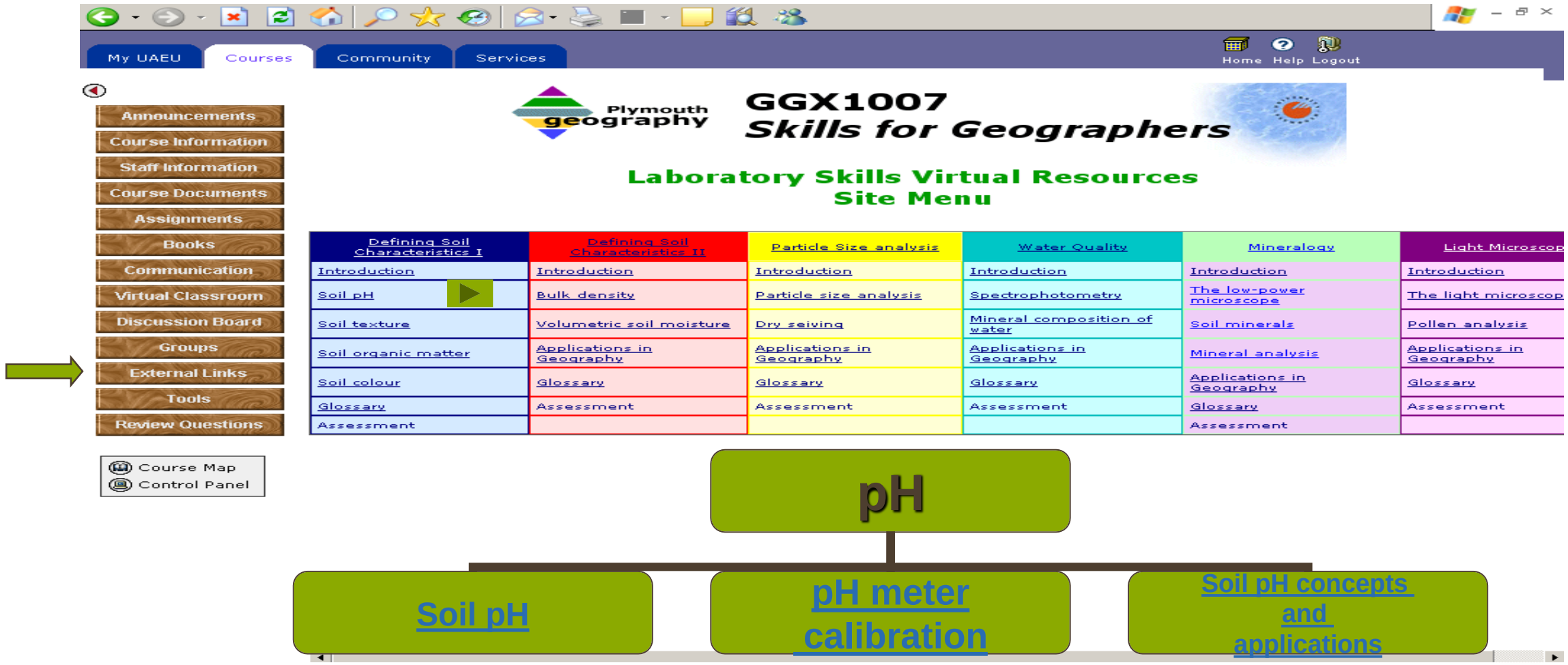

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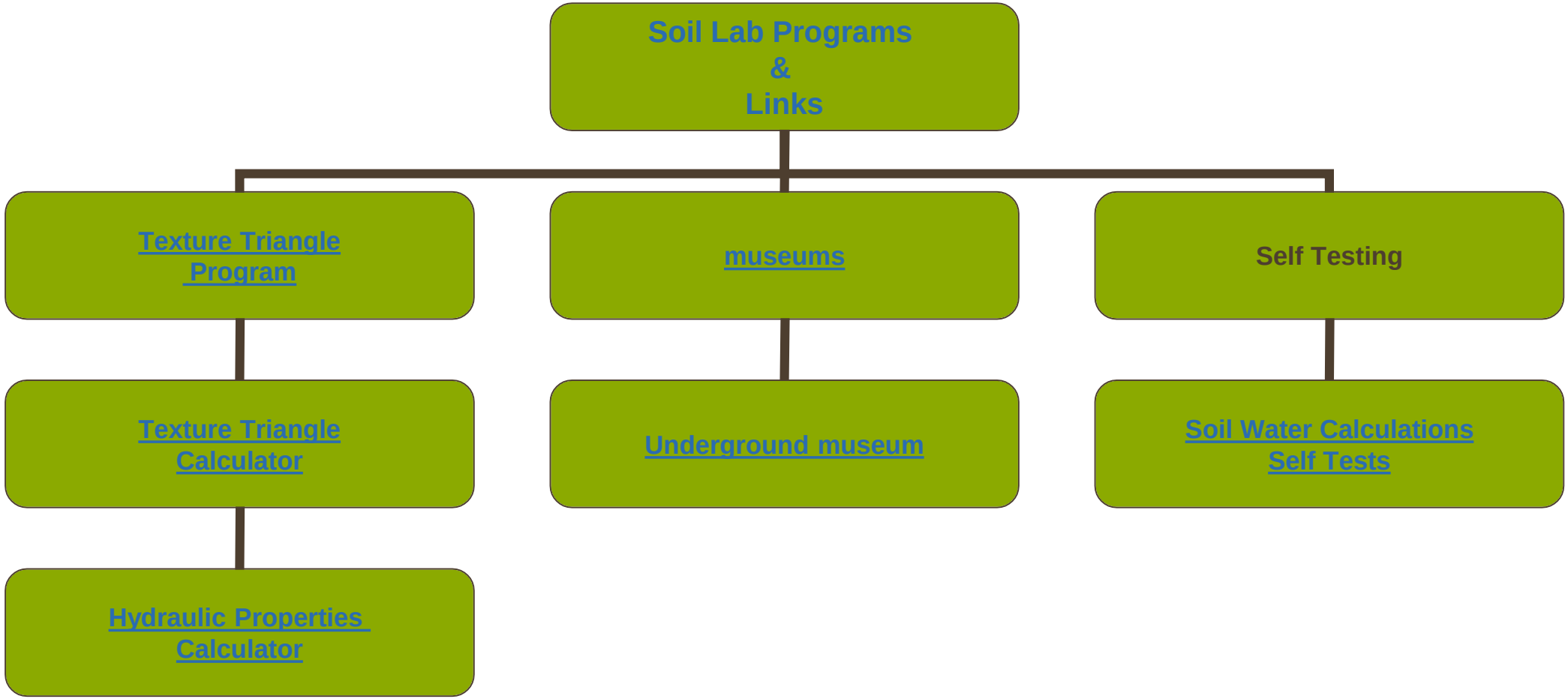

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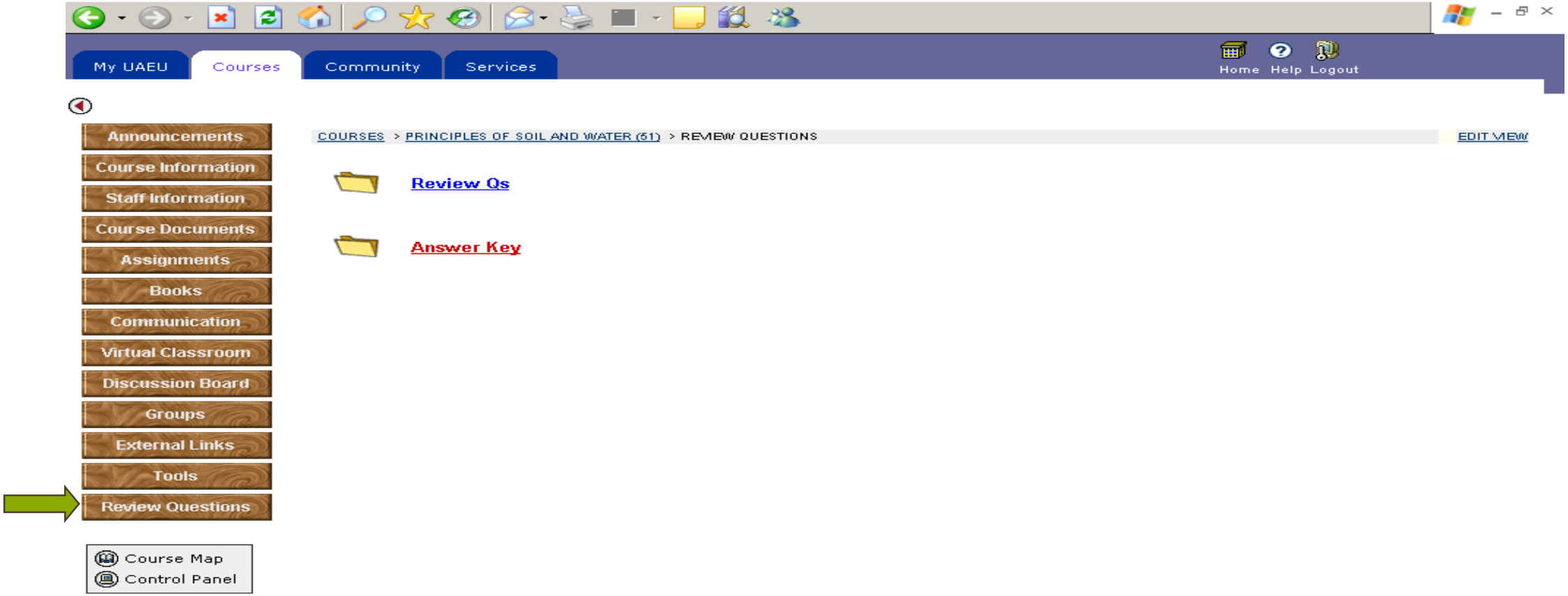

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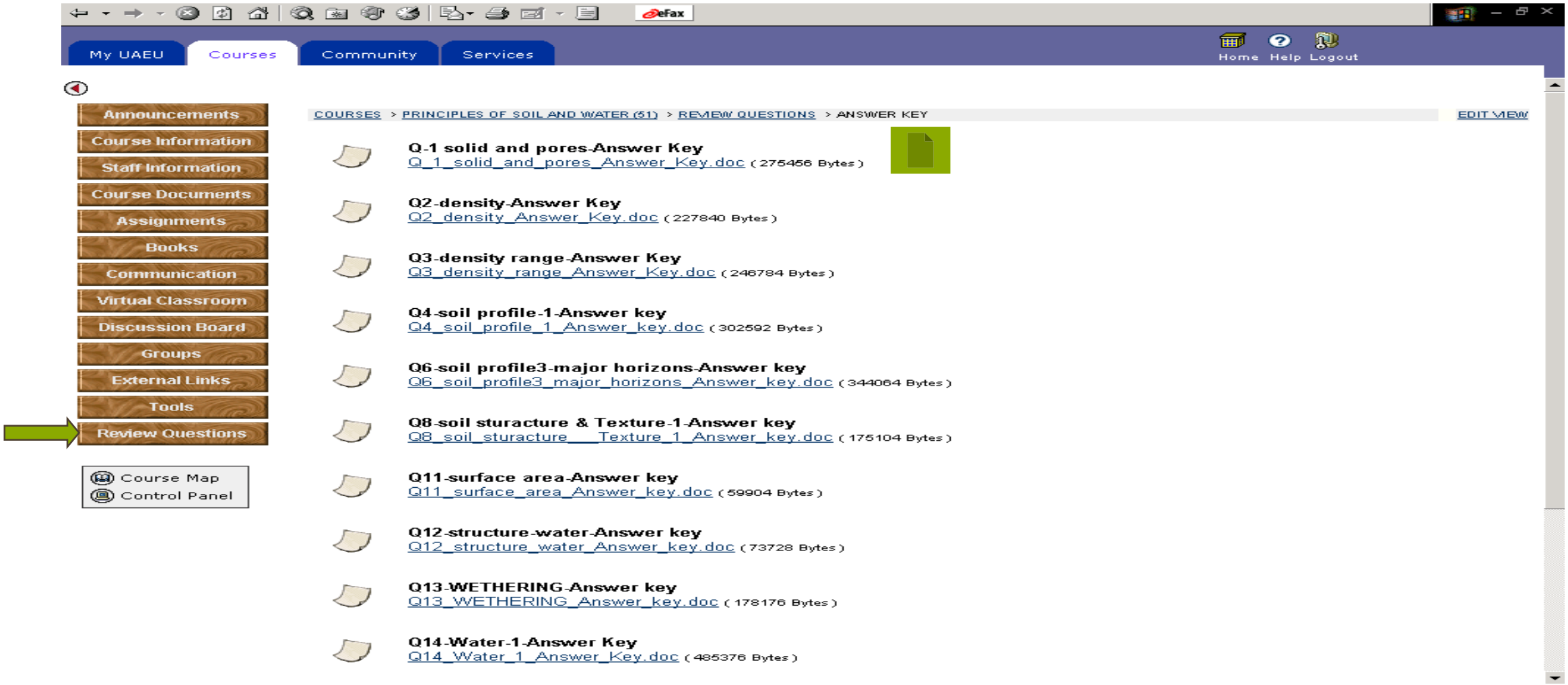

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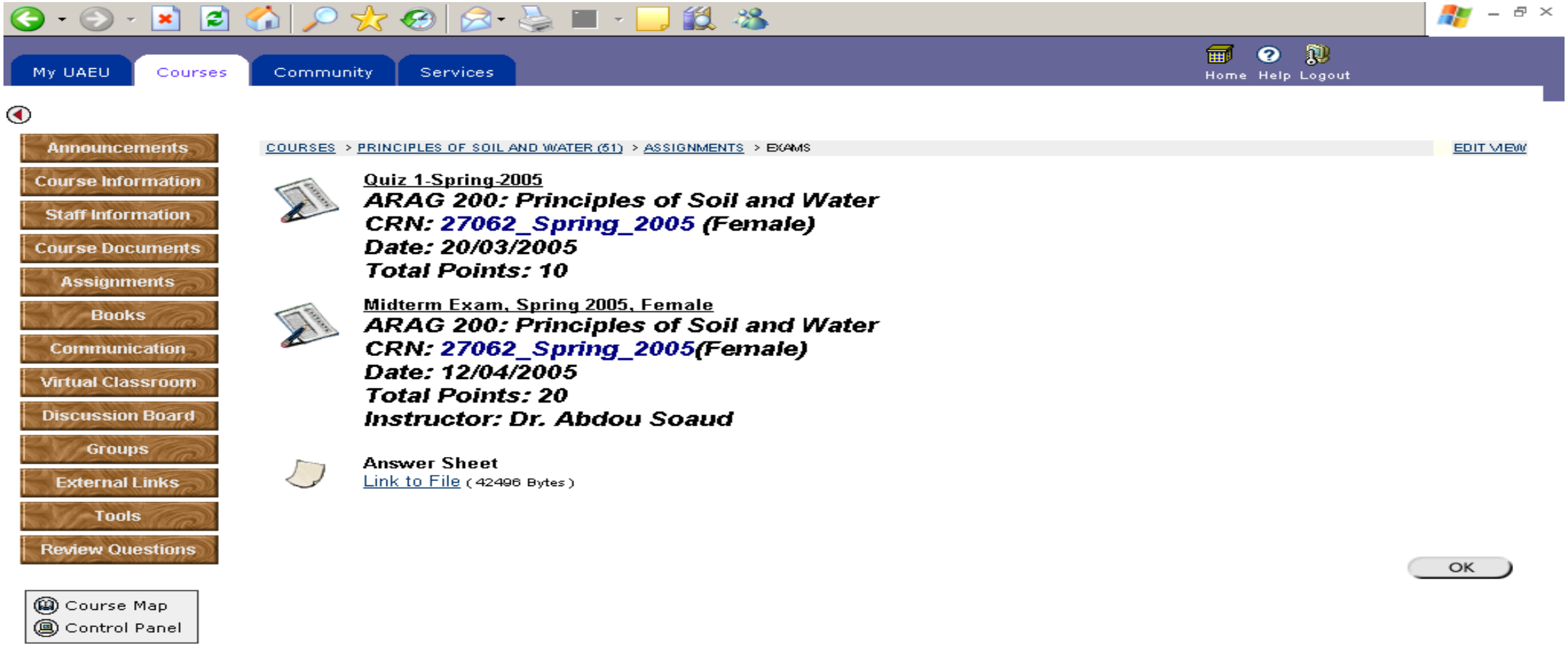

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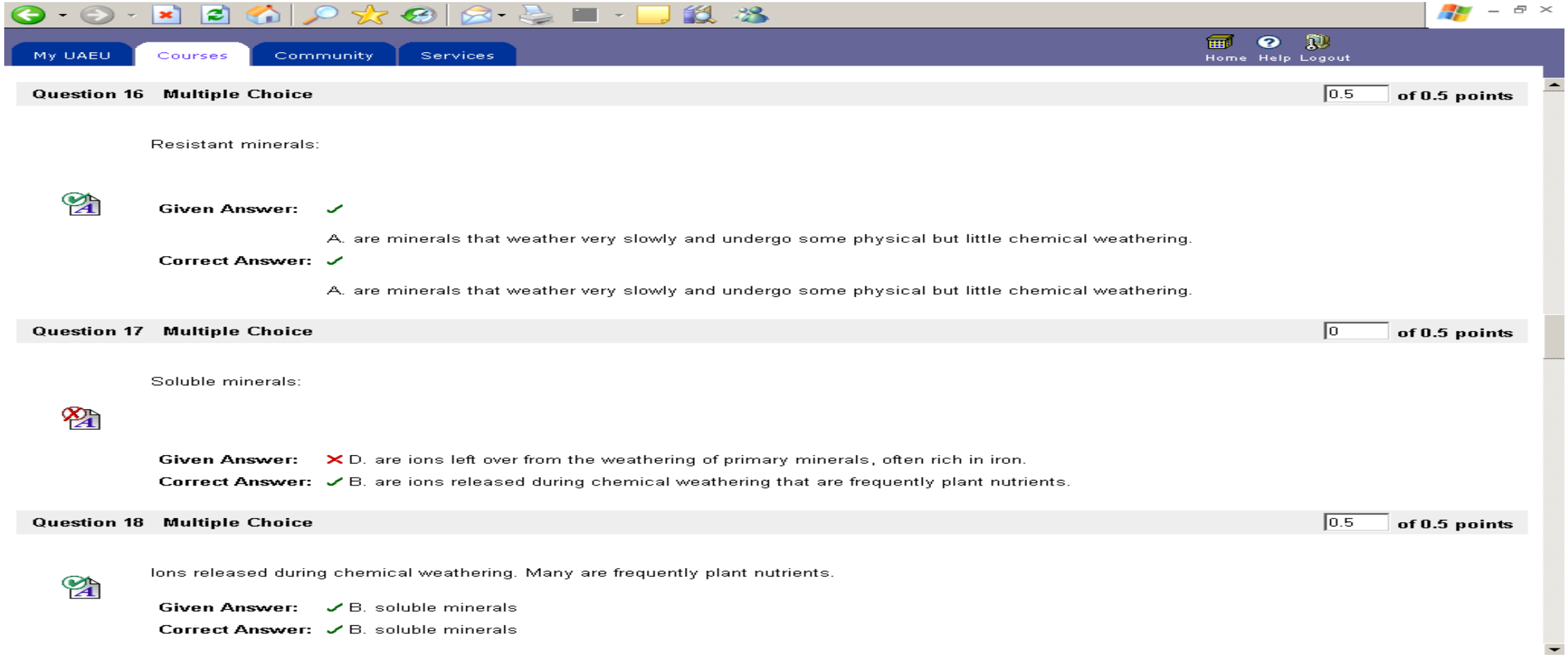

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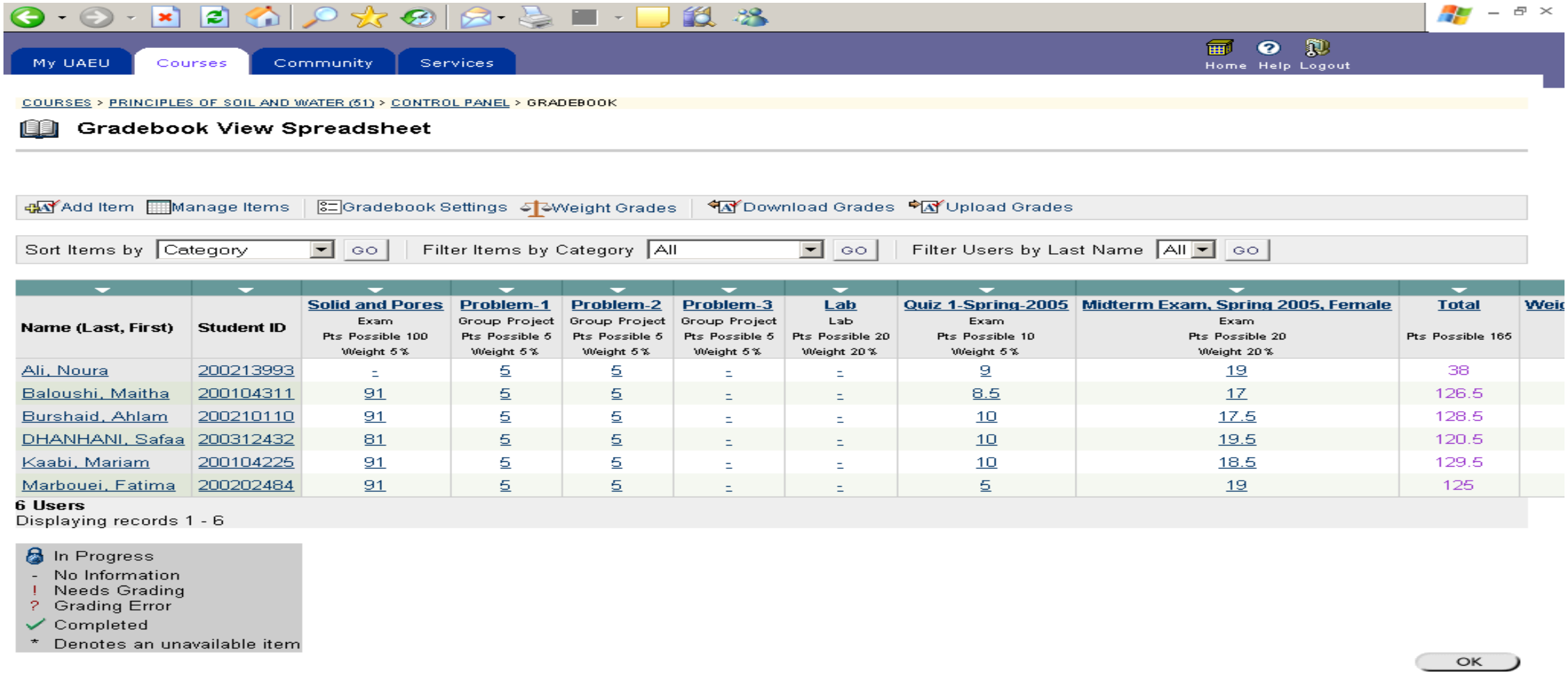

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Home Help Logout

COURSES > PRINCIPLES OF SOIL AND WATER (51) > CONTROL PANEL > GRADEBOOK

Gradebook View Spreadsheet

Add Item | Manage Items | Gradebook Settings | Weight Grades | Download Grades | Upload Grades

Sort Items by: Category GO | Filter Items by Category: All GO | Filter Users by Last Name: All GO

Name (Last, First)	Student ID	Solid and Pores Exam Pts Possible 100 Weight 5 %	Problem-1 Group Project Pts Possible 5 Weight 5 %	Problem-2 Group Project Pts Possible 5 Weight 5 %	Problem-3 Group Project Pts Possible 5 Weight 5 %	Lab Lab Pts Possible 20 Weight 20 %	Quiz 1-Spring-2005 Exam Pts Possible 10 Weight 5 %	Midterm Exam, Spring 2005, Female Exam Pts Possible 20 Weight 20 %	Total Pts Possible 165	Weig
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Baloushi, Maitha	200104311	91	5	5	-	-	8.5	17	126.5	
Burshaid, Ahlam	200210110	91	5	5	-	-	10	17.5	128.5	
DHANHANI, Safaa	200312432	81	5	5	-	-	10	19.5	120.5	
Kaabi, Mariam	200104225	91	5	5	-	-	10	18.5	129.5	
Marbouei, Fatima	200202484	91	5	5	-	-	5	19	125	

6 Users
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The Course on Blackboard

Class Management out of Class

Class Management out of Class

Announcements

Student Duties on Sunday 24 April, 2005

Posted by Abdou Soaud

Dear Students,
The following activities are required from you during class time on **Sunday, April 24th, 2005:**

1. Read Lecture-13 Soil Water (see link below).

2. Each group should search the internet about soil water presentation or video and then send me your search result on the digital drop box.

Through the Blackboard, I will check your work activities during class time and I will take the absences based on that.

Good Luck

Course Link: Course Documents / Module 3 – Soil Mineralogy, Chemistry and Fertility / Lecture 13: Soil Water

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Class Management from Japan

ILHAM-EC– Participatory workshop – Cairo 28-29 November 2016, Abdou Soaud, Cairo University

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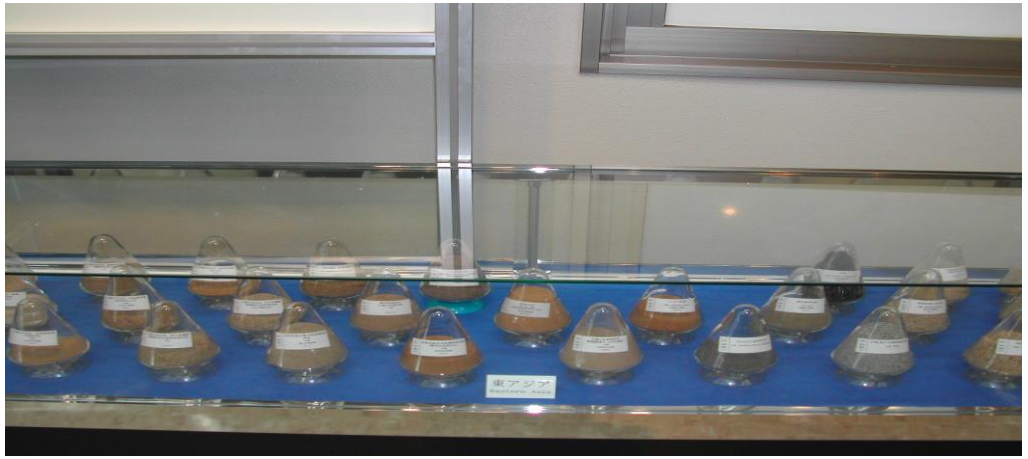
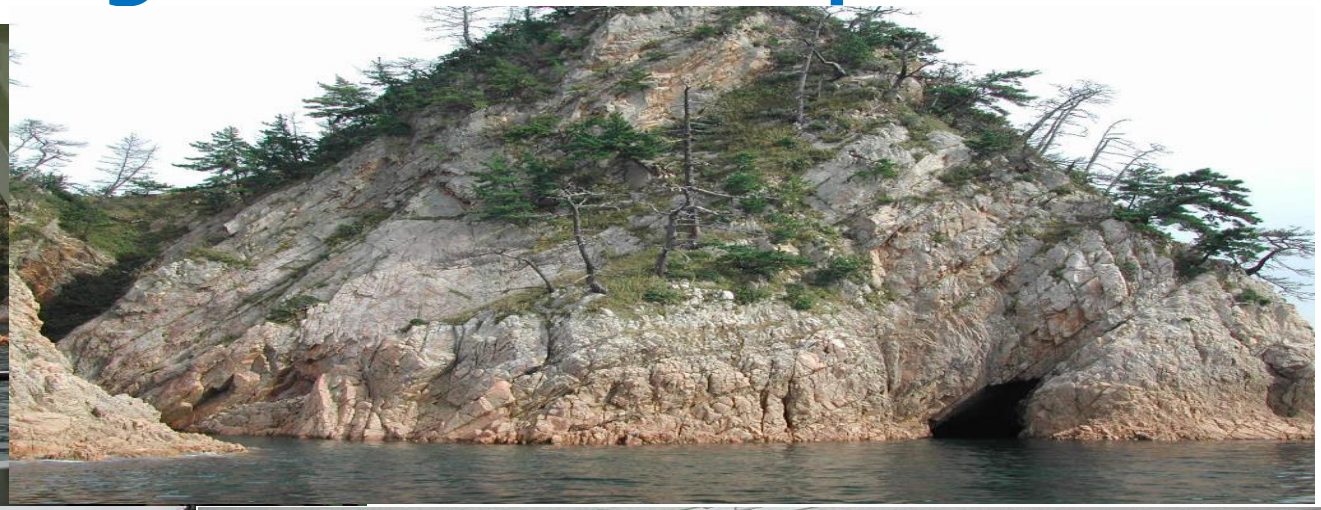
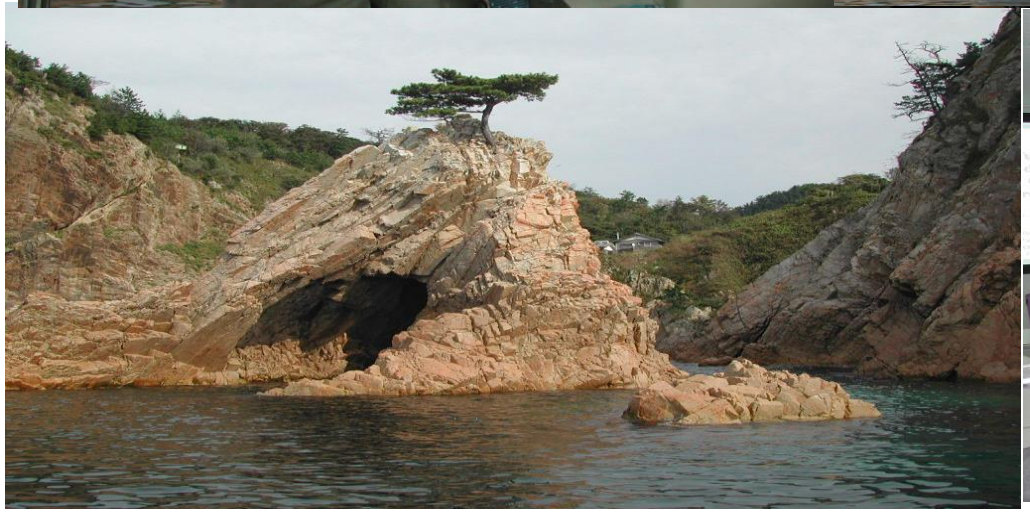
Class Management from Japan

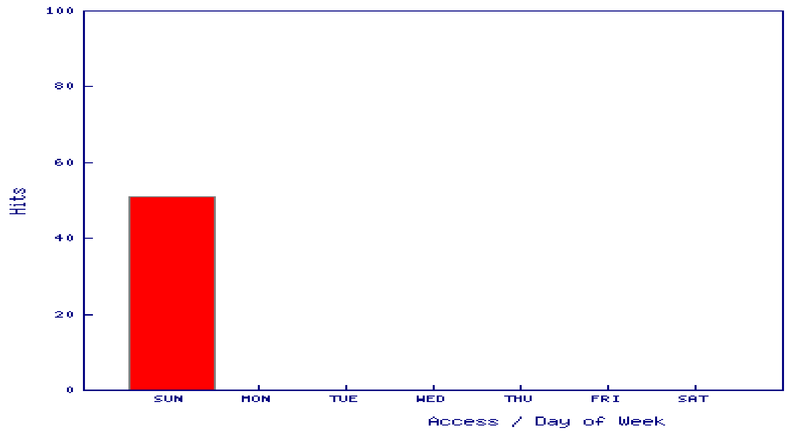


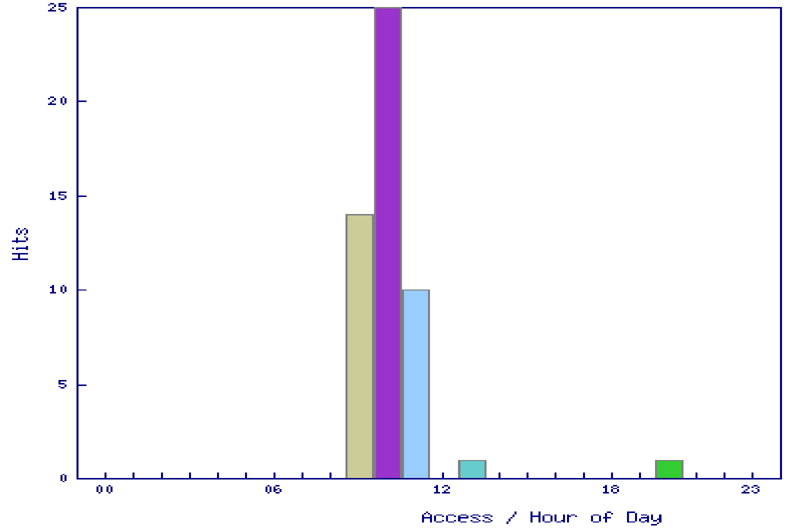
Class Management from Japan

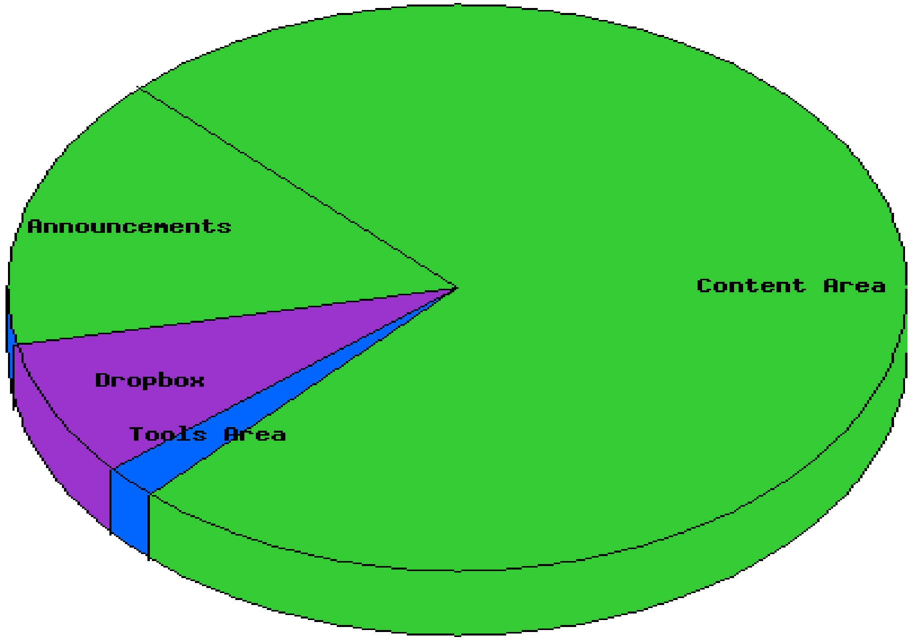




Class Management from Japan







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Baloushi, Maitha (200104311)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**2**
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Kaabi, Mariam (200104225)	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**14**
Marbouei, Fatima (200202484)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
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The Course on Moodle, Cairo University

Introduction to Soil Science (ASS 101)

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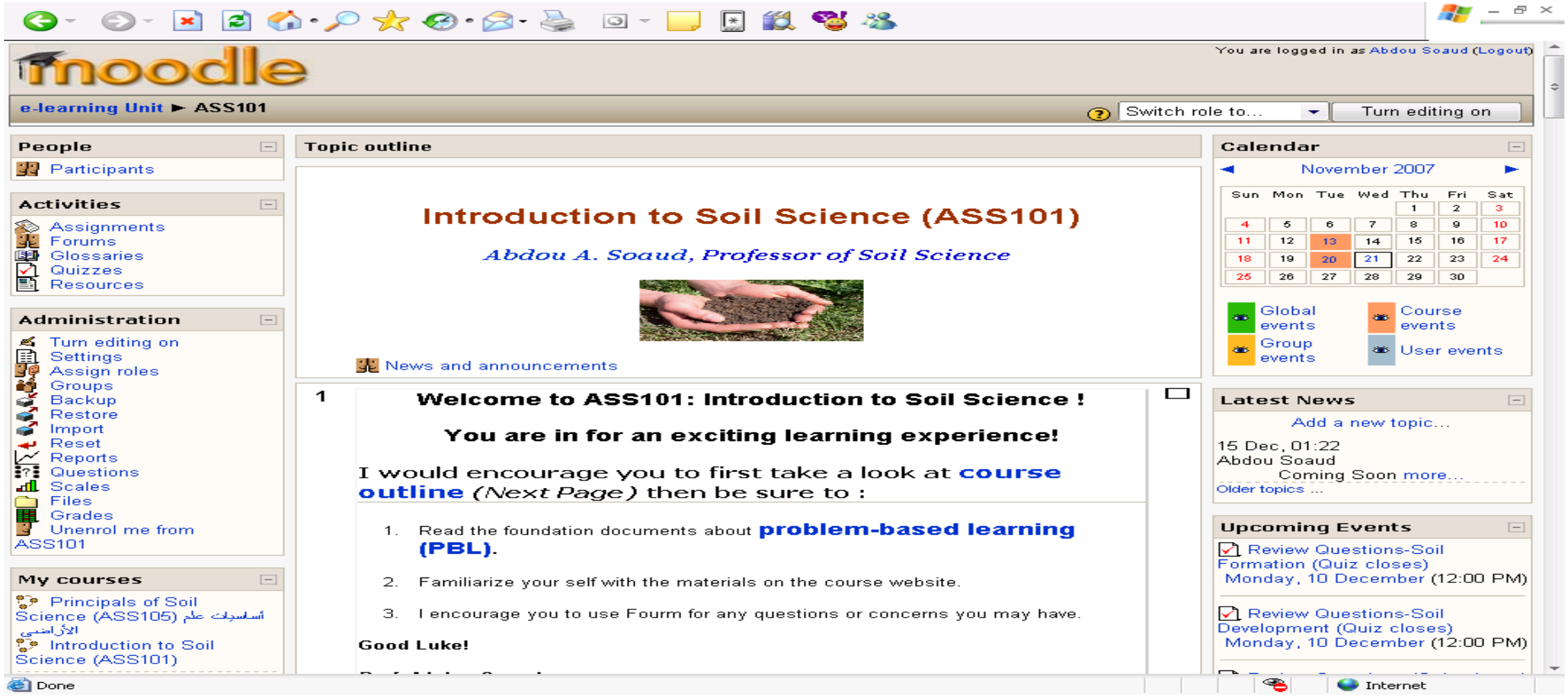

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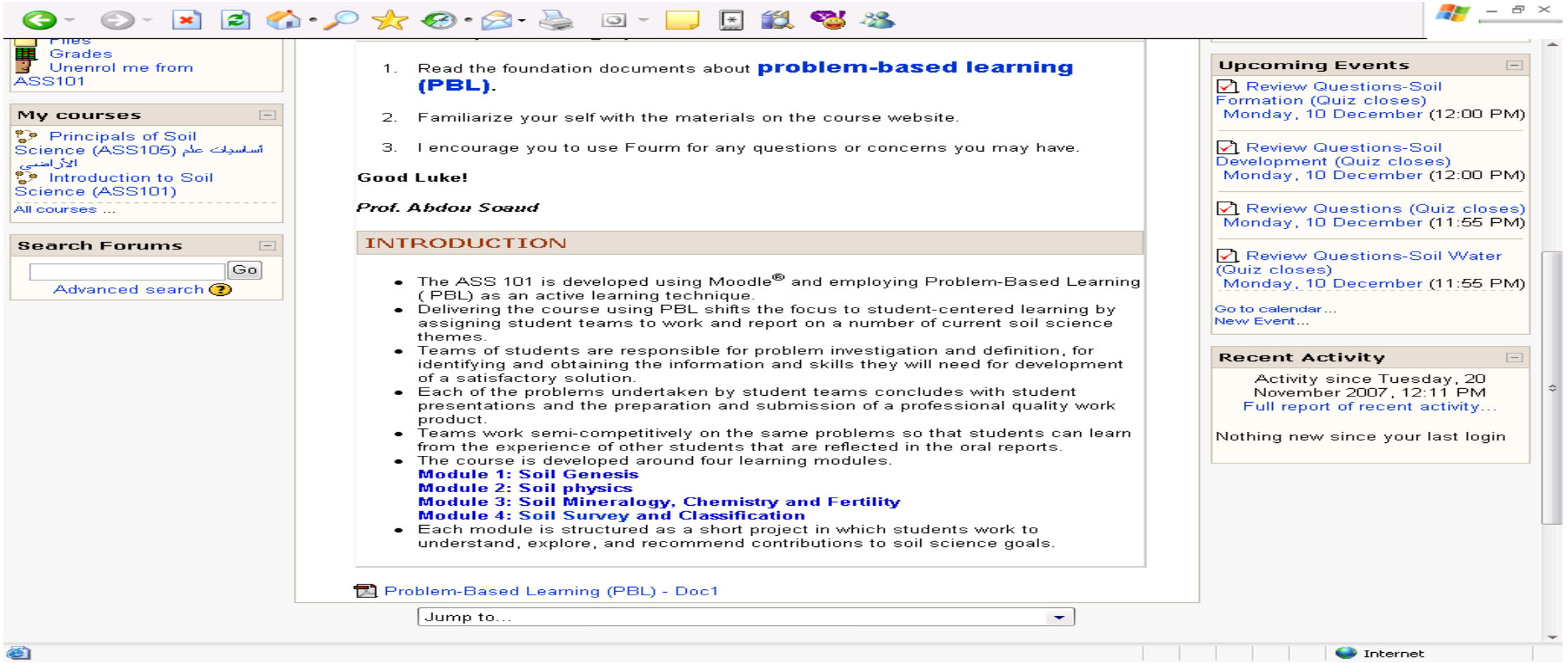

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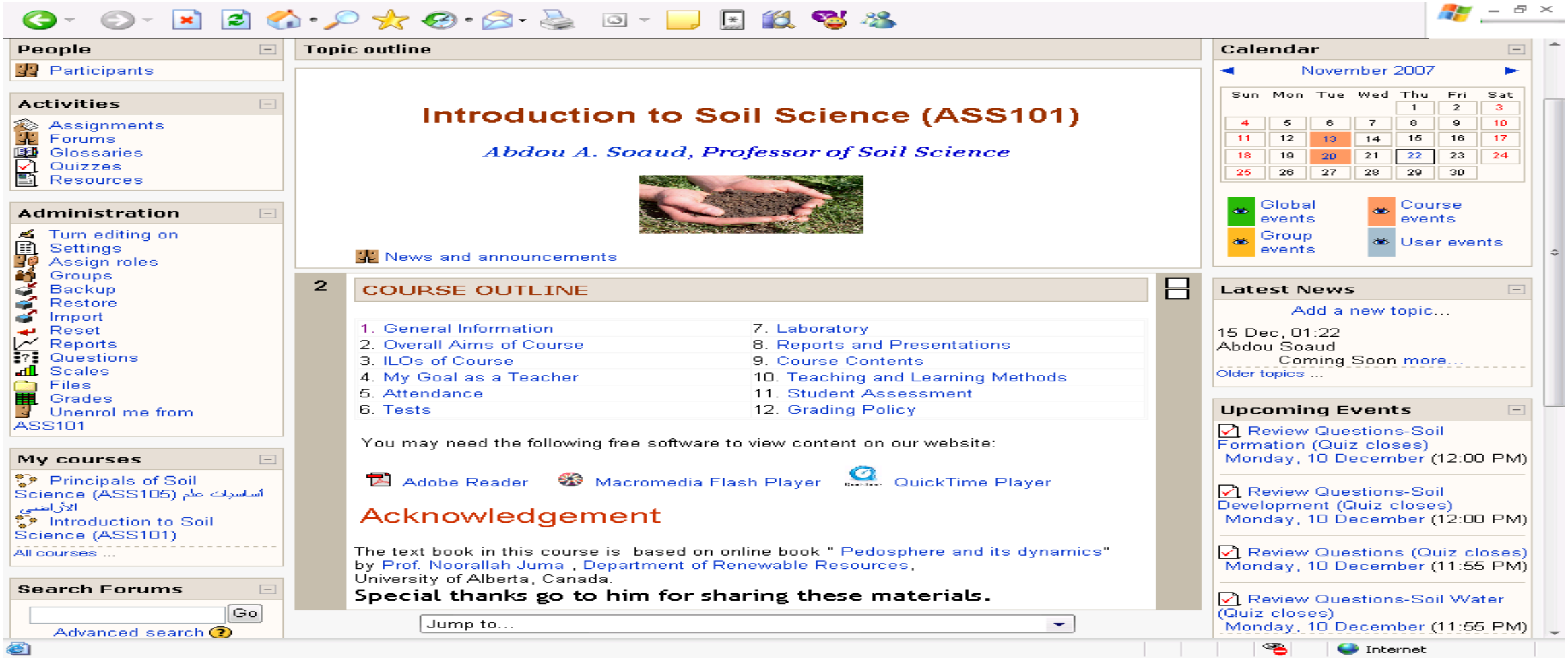

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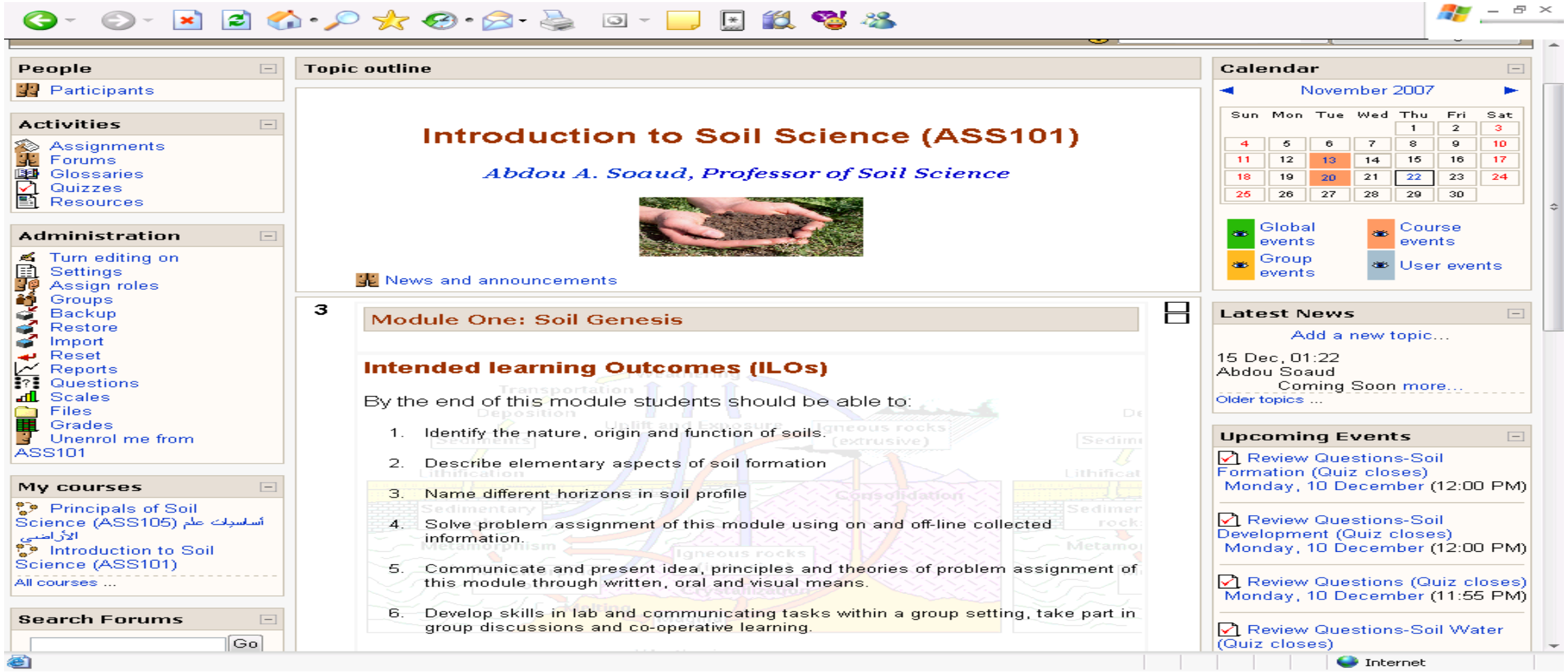

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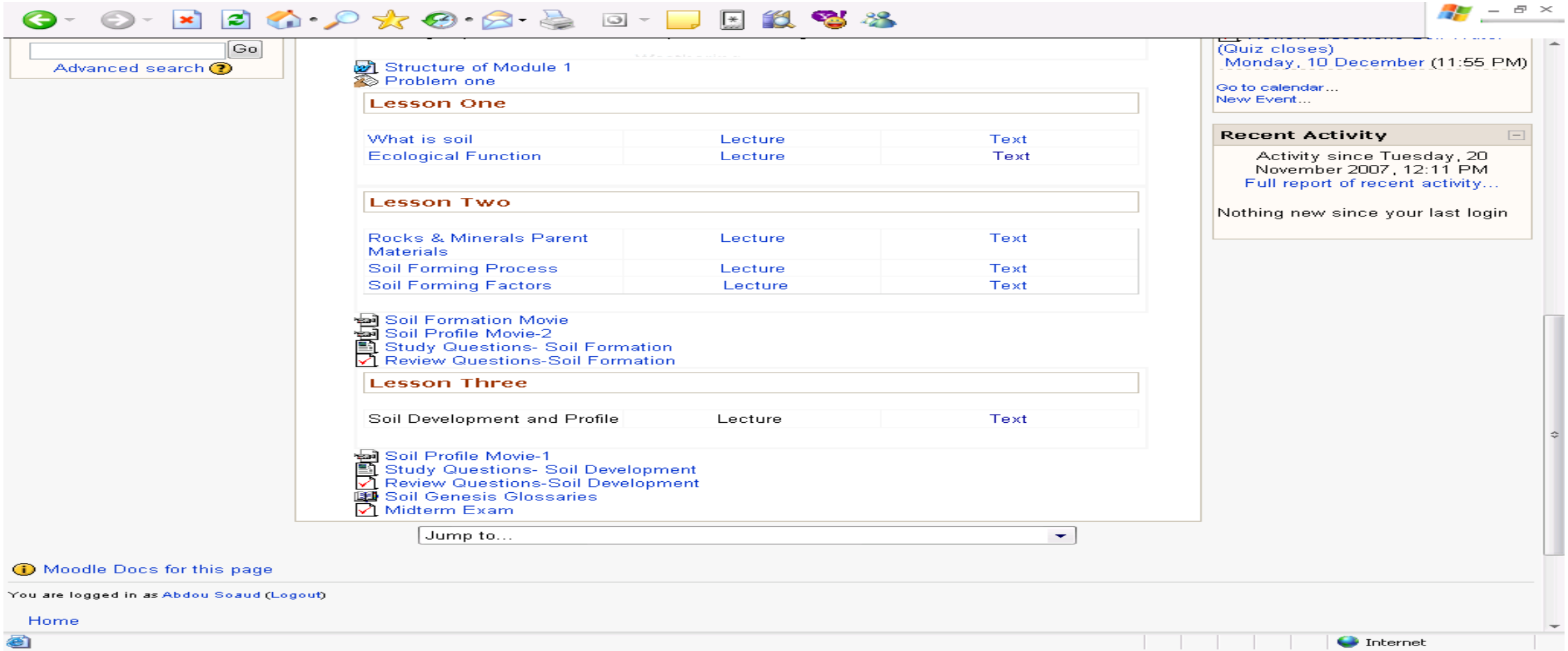

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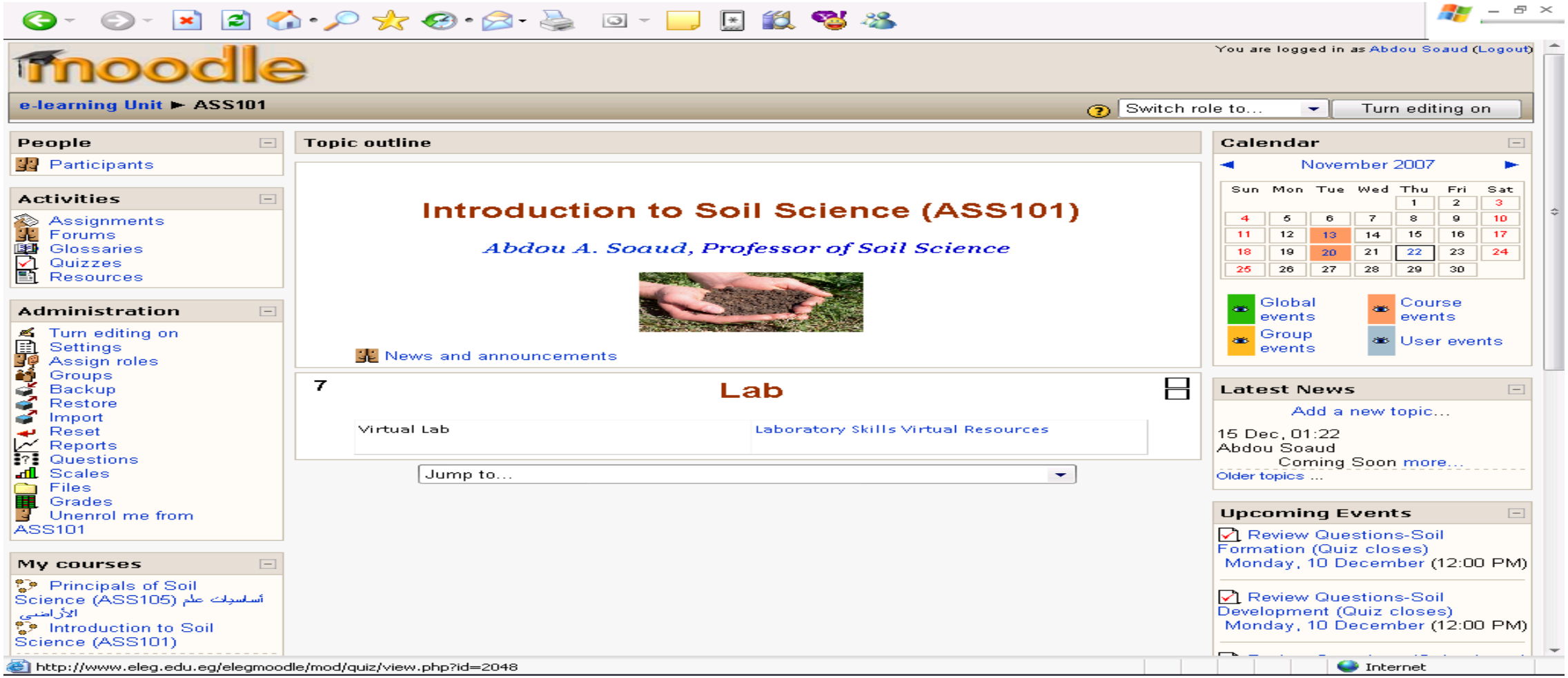

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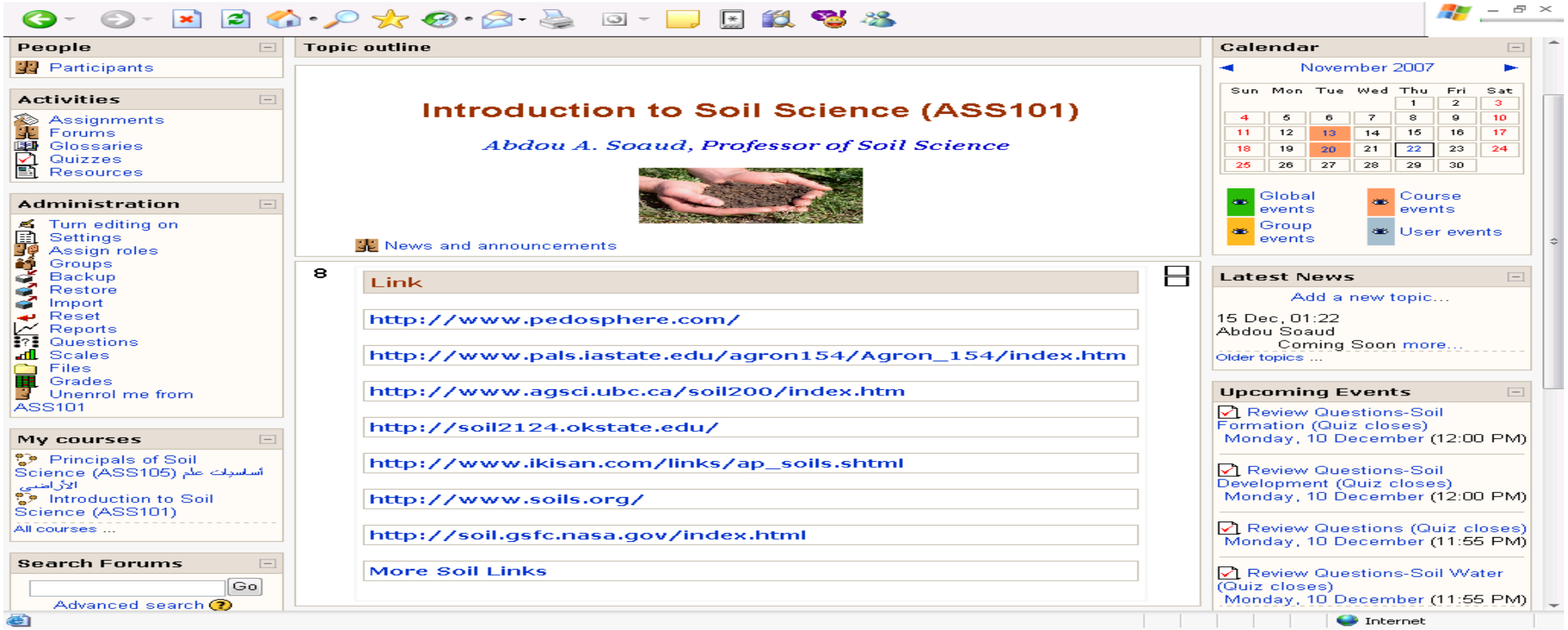

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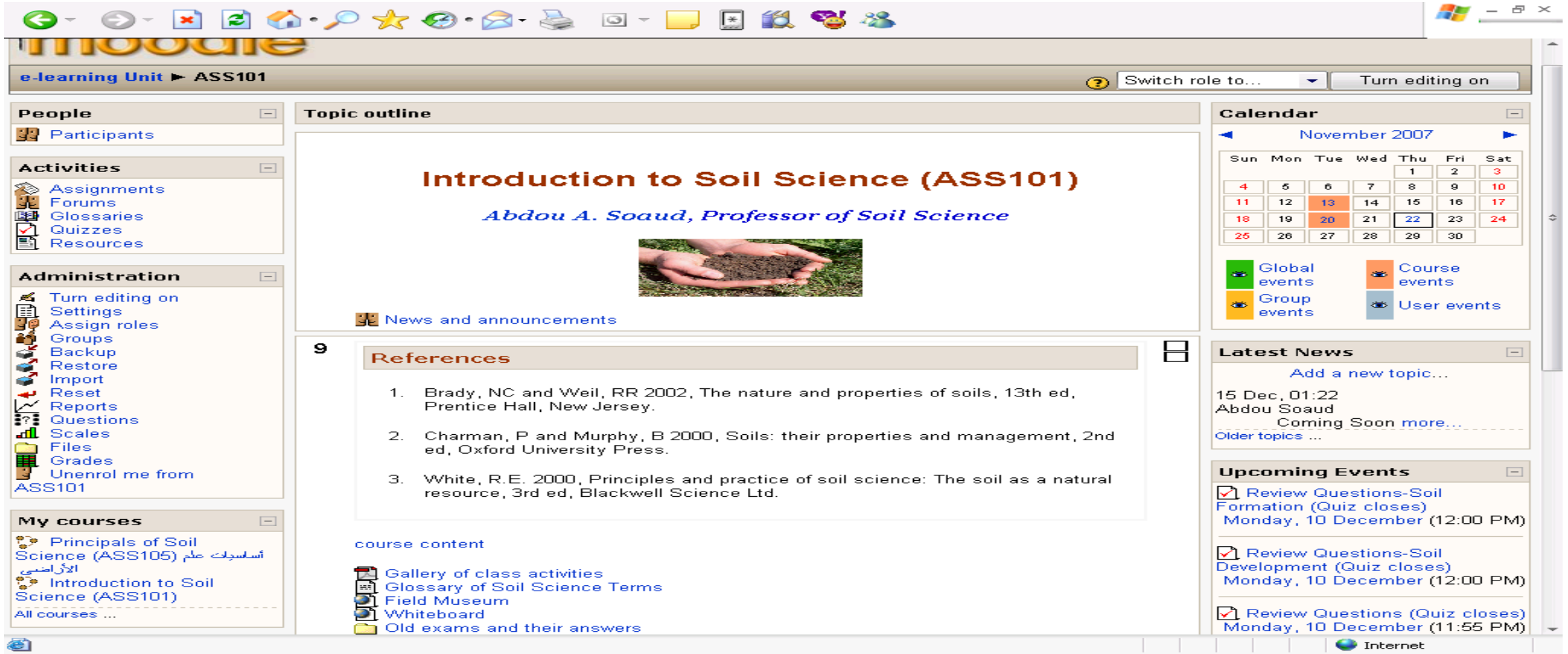

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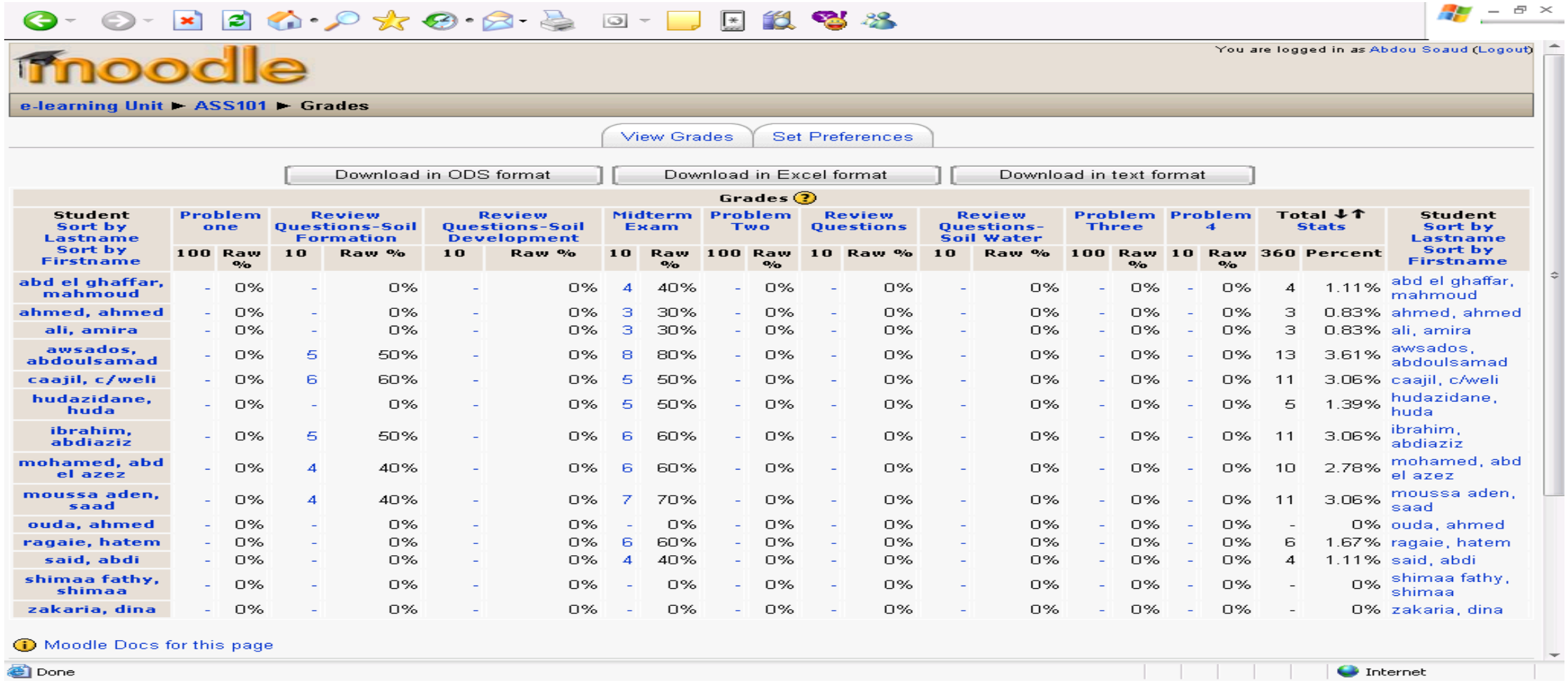

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Grades

Student Sort by Lastname Sort by Firstname	Problem one		Review Questions-Soil Formation		Review Questions-Soil Development		Midterm Exam		Problem Two		Review Questions		Review Questions-Soil Water		Problem Three		Problem 4		Total Stats		Student Sort by Lastname Sort by Firstname
	100	Raw %	10	Raw %	10	Raw %	10	Raw %	100	Raw %	10	Raw %	10	Raw %	100	Raw %	10	Raw %	360	Percent	
abd el ghaffar, mahmoud	-	0%	-	0%	-	0%	4	40%	-	0%	-	0%	-	0%	-	0%	-	0%	4	1.11%	abd el ghaffar, mahmoud
ahmed, ahmed	-	0%	-	0%	-	0%	3	30%	-	0%	-	0%	-	0%	-	0%	-	0%	3	0.83%	ahmed, ahmed
ali, amira	-	0%	-	0%	-	0%	3	30%	-	0%	-	0%	-	0%	-	0%	-	0%	3	0.83%	ali, amira
awsados, abdoulsamad	-	0%	5	50%	-	0%	8	80%	-	0%	-	0%	-	0%	-	0%	-	0%	13	3.61%	awsados, abdoulsamad
caajil, c/weli	-	0%	6	60%	-	0%	5	50%	-	0%	-	0%	-	0%	-	0%	-	0%	11	3.06%	caajil, c/weli
hudazidane, huda	-	0%	-	0%	-	0%	5	50%	-	0%	-	0%	-	0%	-	0%	-	0%	5	1.39%	hudazidane, huda
ibrahim, abdiaziz	-	0%	5	50%	-	0%	6	60%	-	0%	-	0%	-	0%	-	0%	-	0%	11	3.06%	ibrahim, abdiaziz
mohamed, abd el azez	-	0%	4	40%	-	0%	6	60%	-	0%	-	0%	-	0%	-	0%	-	0%	10	2.78%	mohamed, abd el azez
moussa aden, saad	-	0%	4	40%	-	0%	7	70%	-	0%	-	0%	-	0%	-	0%	-	0%	11	3.06%	moussa aden, saad
ouda, ahmed	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	ouda, ahmed
ragaie, hatem	-	0%	-	0%	-	0%	6	60%	-	0%	-	0%	-	0%	-	0%	-	0%	6	1.67%	ragaie, hatem
said, abdi	-	0%	-	0%	-	0%	4	40%	-	0%	-	0%	-	0%	-	0%	-	0%	4	1.11%	said, abdi
shimaa fathy, shimaa	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	shimaa fathy, shimaa
zakaria, dina	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	zakaria, dina

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