

Course Specification

Name of Institution	Mahidol University
Campus/faculty/department	Salaya campus Mahidol University International College Science Division

Section 1 General Information

1. Course Code and course title

(Thai)	EGCI427	การเขียนโปรแกรมเว็บ
(English)	EGCI 427	Web Programming

2. Number of Credits 4(4-0-8) (Lecture/Lab/Self-study)

3. Curriculum and type of subject

3.1 Curriculum	Bachelor of Engineering (Computer Engineering)
3.2 Type of subject	Major elective course

4. Responsible faculty member

Dr. Lalita Narupiyakul

5. Trimester / year of study

5.1 Trimester	3 rd / year of study	4 th year
5.2 Number of students	5-30 students	

6. Pre-requisite(s) none

7. Co-requisite(s) none

8. Venue of study Mahidol University, Salaya campus

9. Date of latest revision October 2011

Section 2 Goals and Objectives

1. Goal

1. Students should explain basic principle of Web programming.
2. Students should be able to design and write Web programming language.
3. Students should be able to apply Web programming to solve engineering problems.

2. Objective of development revision

To up-date the knowledge content of the course

Section 3 Course Management

1. Course Description

(Thai) แบบจำลองข้อมูลกึ่งโครงสร้างบนเว็บ (เช่น เอกซ์เอ็มแอล) การจัดการข้อมูลกึ่งโครงสร้าง ภาษาสอบถามที่เกี่ยวข้องและระบบสอบถามสำหรับข้อมูลเว็บ กระบวนการสอบถามและการทำให้เหมาะที่สุดของข้อมูลกึ่งโครงสร้างและข้อมูลจากแหล่งกำเนิดพหุคูณแบบกระจาย การบูรณาการข้อมูลในเว็บ คลังข้อมูลเว็บ การส่งจากเครื่องบริการฐานข้อมูลเชิงสัมพันธ์และเชิงอ็อบเจกต์ไปเป็นข้อมูลเว็บ อภิปรายงานประยุกต์บนเว็บรูปแบบใหม่ที่เน้นข้อมูล เช่นพาดิชย์อิเล็กทรอนิกส์ ห้องสมุดดิจิทัล และการศึกษาทางไกล ในประเด็นที่เกี่ยวข้องกับฐานข้อมูลเว็บ

(English) Semi-structured data models for the Web (such as XML, etc.), semi-structured data management, associated query languages and query systems for Web data, query processing and optimization over semi-structured data as well as over multiple distributed sources. Data integration over the Web, warehousing of Web data. Mappings from relational and object-oriented database servers to web data. Discussion on some novel data-intensive applications on the Web such as electronic commerce, digital libraries, and distance education relating to web database issues.

2. Credit hours / trimester

Lecture (hours)	Additio nal Class	Laboratory/field trip/internship	Self-study (hours)

	(hours)	(hours)	
44 hours (4 hours x 11 weeks)	-	-	88 hours (8 hours x 11 weeks)

3. Numbers of hours that the lecturer provides individual counseling and guidance

1 hour/week

Section 4 Development of Students' Learning Outcome

1. Expected outcome on students' skill and knowledge

Student will be able to apply the knowledge from lecturer and additional research with the ideas received from analysis and synthesis to set up solutions / precautions to benefit individuals and their community.

2. Teaching Methods

- Lecture
- Self-study
- Exercises

3. Evaluation methods

1. Morality and Ethics

1.1 *Expected outcome on morality and ethics:*

- 1.1.1 To be aware of values and morality, ethics, scarification and honesty.
- 1.1.2 To process self-discipline, punctuality, self-responsibility and social responsibility
- 1.1.3 To process leadership and supporter skills and be able to work in a team with integrity and cooperation.
- 1.1.4 To demonstrate good listening behavior and have respect for the rights and value of others.
- 1.1.5 To pay respect to the rule of organization and social.
- 1.1.6 To demonstrate the ability to analyze ethical impacts of computer usage to personals, organizations and social.
- 1.1.7 To demonstrate good academic ethical behaviors.

1.2 *Teaching methods:*

Learning Centered Education: Emphasis on knowledge development, important skills in career development and living, encourage students to use their full potentials

- 1.2.1 Lecture
- 1.2.2 Emphasis on morality and ethics
- 1.2.3 Group assignments
- 1.2.4 Group discussion

1.3 ***Evaluation methods:***

- 1.3.1 Written examination
- 1.3.2 Presentation
- 1.3.3 Class attendance, class participation and behavior in class
- 1.3.4 On-time submission of reports and assignments and their quality

2 Knowledge development

1.2 ***Expected outcome on knowledge development:***

- 2.1.1 To process the knowledge related to principles, theories and practice in the course
- 2.1.2 To be able to analyze, understand and explain the computer requirements and be able to apply knowledge and skills using the appropriate tools to solve a problem.
- 2.1.3 To be able analyze, design and install and/or evaluate computer components to meet the requirements of the users
- 2.1.4 To have the ability to remain current in research, and pursue new knowledge and perform ability to apply the knowledge.
- 2.1.5 To know, understand and perform eagerness to develop computer knowledge and skills continuously.
- 2.1.6 To have a breadth knowledge in order to oversee the changes and understand the impact of new technology.
- 2.1.7 To have a hand-on experience in software development and/or software applications.
- 2.1.8 To demonstrate knowledge integration with other related sciences.

2.2 ***Teaching methods:***

Learning Centered Education: Emphasis on knowledge development, important skills in career development and living, encourage students to use their full potentials

- 2.2.1 Lecture and in-class participation
- 2.2.2 Case studies with past experiences and current events
- 2.2.3 Self study

2.3 ***Evaluation methods:***

- 2.3.1 Written examination
- 2.3.2 Quality of reports and assignments

3. Intellectual development

3.1 *Expected outcome on intellectual development:*

- 3.1.1 To have discretionary and systematic thinking skill.
- 3.1.2 To have the ability to search, consolidate and evaluate ideas and evidence for problem solving.
- 3.1.3 To be able to apply knowledge and experience to analyze and creatively solve problems both in general and in academic contexts.
- 3.1.4 To be able to apply knowledge and experience to synthesize solution and precautions

3.2 *Teaching method:*

- 3.2.1 Systematic problem solving examples and case studies with past experiences and current events
- 3.2.2 Self Study

3.3 *Evaluation methods:*

- 3.3.1 Written examination
- 3.3.2 Presentation
- 3.3.3 Quality of reports and assignments

4. Interpersonal relationship and responsibility

4.1 *Expected outcome on interpersonal relationship and responsibility:*

- 4.1.1 To perform good communication skills with various groups of people.
- 4.1.2 To be a constructive team member (in various roles).
- 4.1.3 To process the knowledge of the course to identify social problems.
- 4.1.4 To demonstrate self and team responsibility.
- 4.1.5 To have initiative in problem solving.
- 4.1.6 To demonstrate leadership qualities in uncertain situations.
- 4.1.7 To take responsibility in a life-long learning.

4.2 *Teaching methods:*

- 4.2.1 Group discussion in case studies
- 4.2.2 Group discussion
- 4.2.3 Group assignment

4.3 *Evaluation methods:*

- 4.3.1 Presentation
- 4.3.2 Class attendance, class participation and behavior in class
- 4.3.3 On-time submission of reports and assignments and their quality

5. Mathematical analytical thinking, communication skills and information technology skills

5.1 *Expected outcome on mathematical analytical thinking, communication skills and information technology skills:*

- 5.1.1 To be able to select and apply existing tools for computer related work.
- 5.1.2 To possess the ability to apply information technology for data gathering, processing, interpreting and presenting information/results.
- 5.1.3 To have the ability to communicate effectively and select appropriate methods for presentation.
- 5.1.4 To use information technology appropriately.

5.2 *Teaching methods:*

- 5.1.5 Computer programming with exercises.
- 5.1.6 Case studies with past experiences and current events
- 5.1.7 Group discussion
- 5.1.8 Group assignment
- 5.1.9 Self Study

5.2 *Evaluation methods:*

- 5.2.1 Written examination
- 5.2.2 Presentation with appropriate technology
- 5.2.3 Class attendance, class participation and behavior in class
- 5.2.4 On-time submission of reports and assignments and their quality
- 5.2.5

Section 5 Teaching and Evaluation Plans

1. Teaching plan

week	Topics	Hours			Teaching methods/multi media	Instructor
		Lecture	Lab	Self-Study		
1	Introduction to Web 2.0	4	0	8	Lecture and programming exercises	Dr. Lalita Narupiyakul
2	HTML, CSS, and XML	4	0	8	Lecture and programming exercises	

week	Topics	Hours			Teaching methods/multi media	Instructor
		Lecture	Lab	Self-Study		
3	XSLT and XPATH	4	0	8	Lecture and programming exercises	
4	XPATH	4	0	8	Lecture and programming 4exercises	
5	XML Schema	4	0	8	Lecture and programming exercises	
6	DOM	4	0	8		
7	Midterm					
8	Web Database System	4	0	8	Lecture and programming exercises	
9	AJAX and Web Database	4	0	8	Lecture and programming exercises	
10	Web Application Development	4	0	8	Lecture and programming exercises	
11	Web Services	4	0	8	Lecture and programming exercises	
12	Final Examination					
	Total	44	0	88		

2. Evaluation Plan

Expected outcomes	Methods / activities	Week	Percentage
1.1.1, 1.1.2, 1.1.7, 4.1.1, 4.1.4, 4.1.5, 5.1.4	Attendance and in class behavior	1-11	10%
2.1.1, 2.1.3, 3.1.1, 3.1.4, 5.1.2	Midterm Examination	6	30%
	Final examination	12	30%
2.1.7, 2.1.8, 3.1.3, 5.1.1	Exercises, Project and Programming	1-11	30%

Section 6 Teaching Materials and Resources

1. Texts and main documents

Programming the World Wide Web, Robert W. Sebesta, 7th edition.

HTML: The Definitive Guide, Chuck Musciano and Bill Kennedy, O' Reilly & Associates.

Javascript: The Definitive Guide, David Flanagan, O' Reilly & Associates.

2. Documents and important information

none

3. Documents and recommended information

none

Section 7 Evaluation and Improvement of Course Management

1. Strategies for effective course evaluation by students

1.1 Evaluation of peers by students

1.2 Student evaluation

1.2.1 Course content

1.2.2 Course management

1.2.3 Suggestions

1.2.4 Overall opinion

2. Evaluation strategies in teaching methods

2.1 Student evaluation

2.2 Presentation

3. Improvement of teaching methods

Workshop on course improvement with the participation of all instructors in the course

4. Evaluation of students' learning outcome

Analysis of students' learning outcomes using scores from class attendance, group activity and presentation of project and poster presentation

5. Review and improvement for better outcome

Review the course before trimester starts and before each teaching period

Symbol ● represents main responsibility / Symbol ○ represents minor responsibility / Space represent no responsibility

These symbols will appear in Curriculum Mapping