



TQF. 3

Bachelor's Degree

Master's Degree

Course Specification

Course Code: CPE3001

Course Title: Seminar for Engineers

Credits: 3(2-2-5)

Programs: Bachelor of Engineering

Semester: 1

Academic Year: 2023

Faculty of Industrial Technology
Suan Sunandha Rajabhat University

Section 1 - General Information

1. Course code and course title

Course code: CPE3001

Course title (English): Seminar for Engineers

ชื่อวิชา (ภาษาไทย): สัมมนาสำหรับวิศวกร

2. Credits

3(2-2-5)

3. Curriculum and course category

Curriculum: Bachelor of Engineering (Computer Engineering)

Course Category:

- General Education Specialized Course
 Required Course Elective Course Internship

4. Teacher in charge and lecturer

Teacher in charge: Dr.Pongrapee Kaewsaiha

Lecturer: Dr.Pongrapee Kaewsaiha, Asst.Prof.Dr.Kwanruan Rusmee

5. Contact

Room Number: 4724A Email: pongrapee.ka@ssru.ac.th

6. Semester/Academic year

Semester: 1 Academic Year: 2023

Section: 001 Number of enrolled students: 29

7. Pre-requisite (if any)

None

8. Co-requisite (if any)

None

9. Venue

Wed, 08:00-12:00, Room 4763, Faculty of Industrial Technology, SSRU

10. Last date for preparing and revising this course

-

Section 2 - Aims and Objectives

1. Course aims

Explore emerging trends and advancements in engineering: The course aims to expose students to the latest developments in various engineering disciplines, including technological innovations, research breakthroughs, and industry trends.

Foster critical thinking and problem-solving skills: The course aims to enhance students' ability to analyze complex engineering problems, think critically, and develop innovative solutions through discussions, case studies, and group activities.

Develop effective communication and presentation skills: The course aims to improve students' oral and written communication abilities, particularly in the context of technical engineering topics. Emphasis will be placed on presenting technical information clearly and concisely to both technical and non-technical audiences.

Encourage interdisciplinary thinking: The course aims to promote interdisciplinary collaboration and explore the intersection of engineering with other fields, such as technology, business, sustainability, and social sciences. Students will gain an understanding of how engineering can contribute to solving complex societal challenges.

Enhance research skills and promote lifelong learning: The course aims to cultivate research skills among students, including literature review, data analysis, and experimental design. It also aims to instill a sense of curiosity and a commitment to lifelong learning, encouraging students to stay updated with advancements in their respective engineering disciplines.

Foster ethical and professional awareness: The course aims to raise awareness of ethical considerations and professional responsibilities within the engineering field. It will explore topics such as engineering ethics, sustainability, social impact, and the role of engineers in addressing global challenges.

Cultivate teamwork and leadership skills: The course aims to develop students' ability to work effectively in teams and assume leadership roles when necessary. Group projects and collaborative activities will be incorporated to enhance teamwork, communication, and project management skills.

2. Course objectives

At the end of this course, students will be able to perform in the following areas of performance:

- 1) Analyze emerging trends in engineering fields, as well as their impacts on society.
- 2) Conduct research as undergraduate students.
- 3) Present and discuss results.

3. Purposes for developing and revising course

-

Section 3 - Characteristics and Operations

1. Course description

(English) Study and investigation of special topics in engineering or related fields or any topic of current interest to do project and oral presentation

(ไทย) การค้นคว้ารวบรวมเรื่องราวและข้อมูลในหัวข้อที่สนใจในสาขาวิศวกรรมหรือสาขาที่เกี่ยวข้องหรือเป็นเรื่องที่น่าสนใจเพื่อทำโครงการและนำเสนอที่ประชุมสัมมนา

2. Time length per semester (Lecture/Practice/Self-study hours)

Lecture	Practice	Self-Study	Remedial Class
2 hours/week	2 hours/week	5 hours/week	As needed

3. Individual consulting and guidance

Self-consulting at the lecturer's office:

Room Number 4724A, Faculty of Industrial Technology, SSRU

Mon., 13:00-15:00 or by appointment

Consulting via office telephone/mobile phone:

-

Consulting via email:

pongrapee.ka@ssru.ac.th

Consulting via social media platform:

Line OpenChat

Consulting via a web forum:

-

Section 4 - Developing Students' Learning Outcomes

Expected students' learning outcomes are categorized into five domains, developed from curriculum specification (TQF2), as follows:

1. Morals and ethics

1.1 Learning outcomes to be developed

- 1) Have knowledge, understanding, and realizing value, morality, ethics, sacrifice, and honesty. Have academic and professional ethics.
- 2) Be disciplined, punctual, and responsible for oneself and society. Be able to comply with organizational and social regulations.
- 3) Be able to take leader and follower roles, work as a team, resolve conflicts and priorities.
- 4) Be open-minded and respect rights, value, and dignity of human beings.
- 5) Have a conscience that considers common interests rather than personal interests.

1.2 Teaching strategies

Establish an organizational culture to instill discipline in students. Emphasis on attending classes on time as well as dressing according to university regulations. Students responsible for group work must be trained to know the responsibilities of being a group leader and being a member of a group. Be honest by not committing fraud in exams or plagiarizing other people's homework. In addition, all instructors must include morality and ethics in teaching all subjects. Also, there are activities to promote morality and ethics, such as honoring students who have done well in benefit the public and sacrifice.

1.3 Assessment & evaluation strategies

- 1) Evaluate from attentiveness and diligence in participating in class activities.
- 2) Assess students' punctuality in class, submission of work, and participation in activities.
- 3) Evaluate the responsibilities of assigned duties.

2. Knowledge

2.1 Learning outcomes to be developed

- 1) Have knowledge and understanding of important principles and theories in the course.
- 2) Have knowledge and understanding of other areas related to the course which can be integrated and applied appropriately.
- 3) Have knowledge of operational techniques using experiential learning methods.
- 4) Be able to continuously monitor academic and professional changes both in theory and in practice.

2.2 Teaching strategies

Use a variety of teaching methods emphasizing theoretical principles and practical application in real-world environments to keep pace with technological changes. This shall be in accordance with the nature of the course as well as the content of that course.

2.3 Assessment & evaluation strategies

- 1) Report
- 2) Presentation

3. Cognitive skills

3.1 Learning outcomes to be developed

- 1) Be able to think critically and systematically.
- 2) Be able to search, interpret, process, and evaluate data to identify, analyze, and solve problems creatively.
- 3) Be able to follow up, evaluate, and report results accurately and completely.

3.2 Teaching strategies

- 1) Teachers always teach and show rational thinking as an example.
- 2) Presentations and group discussions.
- 3) Provide students the opportunity to practice.

3.3 Assessment & evaluation strategies

Assess according to the real situation from the work and practice of students, such as assessing from class presentations, testing using quiz, interviews, etc.

4. Interpersonal skills and responsibilities

4.1 Learning outcomes to be developed

- 1) Be able to help and facilitate in solving problems in various situations in the group, either as a leader or a team member.
- 2) Have good human relations. Be able to work well with others and adapt well to situations and corporate culture.
- 3) Have responsibility for their own actions and for group work and learning development, both personally and professionally.
- 4) Be able to work and take responsibility for assigned tasks efficiently.

4.2 Teaching strategies

Use instructions with activities that involve group work, work that requires coordination with others, across curriculum, across faculties, external parties, external agencies, or work that students need to research information from interviewing other people or experts.

4.3 Assessment & evaluation strategies

Assess student behavior and expression in presenting group reports in class and observe the behavior shown in participating in various activities and the completeness and clarity of the information.

5. Numerical analysis, communication, and information technology skills

5.1 Learning outcomes to be developed

- 1) Be able to use quantitative analysis to make creative decisions in interpretation and suggest ways to solve problems or disputes.
- 2) Be able to communicate effectively both verbally and in writing. Know how to choose a presentation style that is suitable for different problems and audience groups.
- 3) Be able to choose appropriate information technology and communication techniques to collect data, interpretation, and information communication.

5.2 Teaching strategies

Organize learning activities in various subjects for students to analyze simulated situations, numerical analysis skills, virtual situations, and propose appropriate solutions. Learn techniques for applying technology in a variety of situations.

5.3 Assessment & evaluation strategies

Assess presentation techniques based on theory, selection of technological tools or related mathematics and statistics. Assess the ability to explain the limitations, reasons for choosing different tools, discussions, and case studies that are presented to the class.

Remark: The symbol ● means “major responsibility.”

The symbol ○ means “minor responsibility.”

No symbol means “no responsibility.”

Section 5 - Lesson Plan and Assessment

1. Lesson plan

Week	Content	Teaching Management	Program/Teaching Strategies	Material/Media	Assessment
1	- Course introduction - Grouping	On-site, Online	- Introduce course outlines. - Introduce the course LMS (Moodle) and provide technical assistance as needed. - Discuss expected outcome and grading criteria. - Divide students into groups. - Assign tasks: Define a problem.	- Presentation	- Attendance record - Participation in class
2-3	- Define a problem	On-site, Online, On-demand	- Each group defines an engineering-related problem they want to investigate. - Present the fundamental concepts of the technology and problem they are investigating.	- Presentation	- Attendance record - Participation in class - Activity results
4-6	- Literature review	On-site, Online, On-demand	- Students search related studies, conclude what they read, and create a synthesis matrix. - Learn how to export citation. - Present in the class.	- Presentation	- Attendance record - Participation in class - Activity results
7-9	- Design data collection	On-site, Online, On-demand	- Learn quantitative and qualitative approaches. - Students design data collection. - Develop and evaluate data collecting instruments.	- Presentation	- Attendance record - Participation in class - Activity results
10-12	- Collecting data	On-site, Online, On-demand	- Collect data. - Perform data analysis. - Present the results.	- Presentation	- Attendance record - Participation in class - Activity results

Week	Content	Teaching Management	Program/Teaching Strategies	Material/Media	Assessment
13-15	- Writing a report	On-site, Online, On-demand	- Organizing a report.	- Presentation	- Attendance record - Participation in class - Activity results
16	- Summary	On-site, Online	- Course wrap-up	- Presentation	- Attendance record - Participation in class

2. Learning assessment plan

Learning Outcomes	Assessment Activities	Schedule (Week)	Proportion for Assessment (%)
1, 2, 3, 4, 5	Participation record	1-15	10
	Activities	2-15	40
	Final report	13-16	50

Section 6 - Learning and Teaching Resources

1. Required textbooks and materials

-

2. Documents and important information

Documents suggested by the lecturer

3. Recommended resources for extra study

Information retrieved from search engines

Section 7 - Course Evaluation and Revising

1. Strategies for evaluation of course effectiveness by students

Students will complete the evaluation form for the instructor and guest speaker after the end of the course.

2. Strategies for course evaluation by the lecturer

The lecturer observes the class and collects immediate feedback from students.

3. Teaching revision

The lecturer revises the teaching and learning process based on the questionnaire results.

4. Feedback for achievement standards

The administration committees collect data and analyze students' academic performance each semester.

5. Methodology and planning for course review and improvement

Revise the curriculum, teaching methods, and learning methods by referring to the evaluation results from those involved. Meetings will be held to review the course's effectiveness and improve the curriculum.