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**COURSE SYLLABUS**

**First Semester Academic Year 2019**

1. **Faculty:** Agro-Industry **Department:** Food Science and Technology
2. **Course code:** 01052591  **Course name:** Research Methods in Food Science

**Total credits:** 2(1-3-4) **Section:** lecture 1; practice 11

**Date and time:** (lecture) Wednesday 11:00 a.m. – 12:00 p.m. room AI 2403

(practice) Wednesday 1:00 p.m. – 4:00 p.m. room AI 2403

1. **Lecturers:**
   1. Suvimol Charoensiddhi, Ph.D. (suvimol.ch@ku.ac.th)
   2. Asst. Prof. Yaowapa Lorjaroenphon, Ph.D. ([yaowapa.l@ku.ac.th](mailto:yaowapa.l@ku.ac.th))
   3. Asst. Prof. Tanaboon Sajjaanantakul, Ph.D. (tanaboon.s@ku.ac.th)
2. **Office hours for consultation with students:** by appointment
3. **Course objectives:**
4. To teach the concept of scientific research methodology in food science
5. Student practice to plan thesis research, writing research proposal, design of the experiments and analysis, interpretation of results
6. To improve and to obtain a good research proposal for thesis
7. To understand the principle of good laboratory practices and laboratory safety
8. To understand the scientific writing and plagiarism in scientific research
9. **Course description:**

Research methodology in food science. Planning, proposal writing, report writing, and using of instrumentation in food science research. Principle of good laboratory practices (GLP).

1. **Course outline:**
2. Food research concept
3. Thesis proposal developing
4. Research rational, objectives, method, and planning
5. Review and discussion on the proposal
6. Good laboratory practices and laboratory safety
7. Ethics and plagiarism in scientific writing
8. **Student centered teaching methods:**

Lecture, discussion, demonstration, and case study. Student will use individual research topic that has been discussed with own thesis advisor to develop and write the actual thesis proposal according to the requirement of graduate school. Student practice on the thesis proposal writing. Open discussion on developed proposal and research method. Presentation of the thesis proposal and answering the question concern.

1. **Teaching aids/materials:**

Power point, handout, web resources, statistical analysis software, Edmodo

1. **Measures of achievement:**

|  |  |
| --- | --- |
| 1. Experimental design | 20 % |
| 1. Concept proposal, class participation, discussion, assignments | 35 % |
| 1. Draft thesis proposal, oral presentation, Q&A  (course instructor 3×15% = 45%) | 45 % |

1. **Grading:**

Grading on a curve and/or a scale. Score below 60% will receive “C”, 60-64.9% is “C+”, 65-69.9% is “B”, 70-74.9% is “B+”, above 75% is “A”.

1. **Textbooks and readings:** Handout and material that will be assigned during the course
2. **Class schedule:**

|  |  |  |  |
| --- | --- | --- | --- |
| **week** | **date** | **topic** | **lecturer** |
| - | July 17 | No class (Public holiday) | - |
| 1 | July 24 | Course orientation  - Course introduction and overview  - Good laboratory practices and lab safety  - Prepare yourself for proposal development | Suvimol |
| 2 | July 31 | Topic identification, research statement and rational | Suvimol |
| 3 | Aug 7 | Hypothesis and objectives, research significance | Suvimol |
| 4 | Aug 14 | Literature review and data search  (@ AI 5314 13:00 pm - 16:00 pm) | Suvimol |
| 5 | Aug 21 | Research methodology and research ethics | Suvimol |
| 6 | Aug 28 | Research proposal development | Suvimol |
| 7 | Sep 4\* | Writing a scientific research article | Suvimol |
| 8 | Sep 11 | Experimental designs for research in food science and technology: Terms and definitions | Yaowapa |
| 9 | Sep 18 | Applications and case studies: CRD, RCBD | Yaowapa |
| 10 | Sep 25 | Applications and case studies: Factorial, Treatment comparisons and contrasts | Yaowapa |
| 11 | Oct 2 | Applications and case studies: Split-plot, Plackett-Burman, BIB | Yaowapa |
| 12 | Oct 9 | Response surface methodology (RSM) | Yaowapa |
| 13 | Oct 16 | Statistical analysis software and case studies  (@ AI 5314 13:00 pm - 16:00 pm) | Yaowapa |
| - | Oct 23 | No class (Public holiday) | - |
| 14 | Oct 30 | Research proposal and science communication | Suvimol, Tanaboon |
| 15 | Nov 11  (All days) | Proposal presentation\*\* | Tanaboon, Yaowapa,  Suvimol |
|  | | *\* No class (Midterm exam): Additional lecture and practice by Dr. Suvimol*  *\*\* Hand in draft thesis proposal 4 copies and post on Edmodo by Nov 4th, 2019* | |

Suvimol Charoensiddhi

July 2nd, 2019