Course Syllabus (Academic Year 2022)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAID370 Experimental Designs

   Credit (study hours) : 3(3-0-6)

2. **Program Name** : Bachelor of Science (Food Technology)

3. **Course Module** : Major Required Courses

   Pre/co-requisite : KAID270 Introduction to Statistics

4. **Class Semester** : ☐ 1st Semester ☑ 2nd Semester Academic Year 2022

5. **Class Schedule & Venue** : M 13:00 – 16:00, Room L-316, Laboratory Building, WebEx

   MUKA e-learning KAID370FT_65

6. **Class Coordinator** : Dr. Nuengruithai Tharawatcharasart

   Contact No. : ..... Email : Nuengruithai.tha@mahidol.edu

7. **Course Description**

Review of basic statistics; basic principle of experimental designs; Completely randomized design; multiple comparison; orthogonal comparison; randomized complete blocked design; latin square design; factorial experiment ; application designing statistical experimental designs; SPSS program.

8. **Course Objectives / Course Learning Outcomes (CLOs)**

No.	Objectives / CLOs	Expected Skills / Knowledge			PLOs
		Specific	Generic	Knowledge	
8.1	To provide students with a better understanding of statistics and statistical experiment designs.				
8.2	To provide students with problem-solving skills by designing statistical experiments.				
8.3	To provide students able to use statistical software packages				

9. Class Instructor List

9.1 Name : Name : Dr. Nuengruithai Tharawatcharasart (NT) Contact No. : .....

Email : Nuengruithai.tha@mahidol.edu

10. Course Outline

Week	Date	Contents	CLOs	Teaching & Learning	Instructor's Names
1	**16 Jan 23** (เช้า)	Review of basic statistics SPSS and Basic principle of experimental design	1	Lecture/Discussion	NT
2	**16 Jan 23** (บ่าย)	Completely randomized design	1	Lecture/Discussion	NT
3	**30 Jan 23**	Multiple comparison	1	Lecture/Discussion	NT
4	**30 Jan 23**	Application and Presentation 1	1	Lecture/Discussion	NT
5	**13 Feb 23**	Orthogonal comparison	1	Lecture/Discussion	NT
6	**13 Feb 23**	Randomized complete blocked design	1	Lecture/Discussion	NT
7	**27 Feb 23**	Application and Presentation 2	1	Lecture/Discussion	NT
8	**27 Feb 23**	SPSS Program	1	Exercise	NT
9	Mid-term Examination				
10	**20 Mar 23**	Latin square design		Lecture/Discussion	NT
11	**20 Mar 23**	factorial experiments1		Lecture/Discussion	NT
12	**3 Apr 23**	factorial experiments2		Lecture/Discussion	NT
13	**3 Apr 23**	factorial experiments3		Exercise	NT
14	**17 Apr 23**	Application and Presentation 3		Reflection	NT
15	**17 Apr 23**	SPSS Program		Reflection	NT
16	Add	SPSS Program			
17	1 May 23 Final Examination				
18					

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Mid-term exam	Writing examination	8.1, 8.2	9	40
11.2	Final exam	Writing examination	8.1, 8.2, 8.3	17	30
11.3	Reports / Assignments	Complete and On time	8.1, 8.2, 8.3	2-16	20
11.4	Class participation	Observation	8.1, 8.2, 8.3	1-16	10
				Total	**100**

12. Grading System

☑ Criterion-referenced evaluation

Grade	Score	Grade	Score	Grade	Score	Grade	Score
A	≥ 80 %	B	70 – 74.99%	C	60 – 64.99%	D	50 – 54.99%
B+	75 – 79.99%	C+	65 – 69.99%	D+	55 – 59.99%	F	< 50 %

☑ Norm-referenced evaluation

*If use both criterion and norm-referenced evaluation, please tick two boxes.

13. References

13.1 Johnson RA. 1992. Statistics: principles and methods. 3rd ed. John Wiley & Sons.

13.2 Weiss NA. 1995. Introductory statistics. 4th ed. Addison-Wesley.

13.3 ผศ.สายชล สินสมบูรณ์ทอง. 2549. สถิติกับการวางแผนการทดลองทางการเกษตร. พิมพ์ครั้งที่4.