



Course Syllabus (Academic Year 2021)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : K Aid370 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 : K Aid270 Introduction to Statistics
4. **Class Semester** : 1st Semester 2nd Semester Academic Year 2021
5. **Class Schedule & Venue** : T 13:00 – 16:00, Room L-316, Laboratory Building, WebEx
 FaceBook ClosedGroup K Aid370FT_64
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	4 Jan 22	Review of basic statistics	1	Lecture/Discussion	NT
2	11 Jan 22	Basic principle of experimental design	1	Lecture/Discussion	NT
3	18 Jan 22	Completely randomized design	1	Lecture/Discussion	NT
4	25 Jan 22	Multiple comparison	1	Lecture/Discussion	NT
5	1 Feb 22	Orthogonal comparison	1	Lecture/Discussion	NT
6	8 Feb 22	Randomized complete blocked design	1	Lecture/Discussion	NT
7	15 Feb 22	Latin square design	1	Lecture/Discussion	NT
8	22 Feb 22	SPSS Program	1	Exercise	NT
9	Mid-term Examination				
10	8 Mar 22	factorial experiments1		Lecture/Discussion	NT
11	15 Mar 22	factorial experiments2		Lecture/Discussion	NT
12	22 Mar 22	factorial experiments3		Lecture/Discussion	NT
13	29 Mar 22	SPSS Program		Exercise	NT
14	5 Apr 22	Application and Presentation 1		Reflection	NT
15	19 Apr 22	Application and Presentation 2		Reflection	NT
16	26 May 22	Application and Presentation 3		Reflection	NT
17	Final Examination				
18					

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Mid-term exam	Writing examination (Open book)	8.1, 8.2	9	40
11.2	Final exam	Writing examination (Open book)	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	$\geq 80\%$	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 สีนสมบูรณ์ทอง. 2549. สถิติกับการวางแผนการตลาดทางการเกษตร. พิมพ์ครั้งที่4.