



Course Syllabus (Academic Year 2023)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAID208 Probability and Applied Statistics
Credit (study hours) : 3(3-0-6)
2. **Program Name** : Bachelor of Engineering Program in Environmental Engineering
 and Disaster Management
3. **Course Module** : Major Required Courses
Pre/co-requisite : Non
4. **Class Semester** : 1st Semester 2nd Semester Academic Year 2023
5. **Class Schedule & Venue** : T 13:00 – 16:00 Room 2308 Hybrid Webex GoogleClassroom KAID208_66
 and MUKA e-learning.
6. **Class Coordinator** : Dr. Nuengruithai Tharawatcharasart
 Contact No. : Email : Nuengruithai.tha@mahidol.edu

7. Course Description

Classification of statistical data, collection, organization, display and analysis of data, probability, random variable, discrete and continuous probability distributions, population and sampling, estimation, hypothesis testing, analysis of variance, correlation and regression analysis, application of statistics.

8. Course Objectives / Course Learning Outcomes (CLOs)

No.	Objectives / CLOs	Expected Skills / Knowledge			PLOs
		Specific	Generic	Knowledge	
8.1	To provide students with knowledge and understanding of skills of statistics				
8.2	To provide students with problem solving skills by an approach that describes statistics				
8.3	To provide students can apply the knowledge of statistics				

9. Class Instructor List

9.1 Name : Dr. Nuengruithai Tharawatcharasart (NT) Email Nuengruithai.tha@mahidol.edu

10. Course Outline

Week	Date	Contents	CLOs	Teaching & Learning	Instructor's Names
1	8 Aug	Introduction	1	Lecture	NT
2	15 Aug	Classification of statistical data, collection, organization and display	1	Lecture	NT
3	22 Aug	Analysis of data	1	Lecture	NT
4	29 Aug	Probability	1	Lecture	NT
5	5 Sep	Random variable and probability distribution	1	Lecture	NT
6	12 Sep	Population and sampling	1	Lecture	NT
7	19 Sep	Estimation	1	Lecture	NT
8	26 Sep	Estimation	1	Lecture	NT
9	2 – 6 Oct Mid-term Examination				
10	10 Oct	Hypothesis testing	1	Lecture	NT
11	17 Oct	Hypothesis testing	1	Lecture	NT
12	24 Oct	Application	2	Lecture	NT
13	31 Oct	Analysis of variance	1	Lecture	NT
14	7 Nov	Application	2	Lecture	NT
15	14 Nov	Correlation and regression analysis	1	Lecture	NT
16	21 Nov	Application	3	Lecture	NT
17	28 Nov	Quiz	2	Lecture	NT
18	4 – 15 Dec Final Examination				

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Mid-term exam	Writing examination (Open book)	8.1, 8.2	8	30
11.2	Final exam	Writing examination (Open book)	8.1, 8.2	13	30
11.3	Quiz	Writing examination	8.2	17	10
11.4	Reports / Assignments	Complete and On time, Rubric Score	8.2, 8.3	2-16	20
11.5	Class participation	Complete and On time	8.2, 8.3	2-16	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 กัลยา วานิชย์บัญชา. (2557). หลักสถิติ. (พิมพ์ครั้งที่ 14). กรุงเทพฯ: โรงพิมพ์สามลดา.
- 13.2 Brook, R. J., And Arnold, G. C. (1985). Applied Regression Analysis and Experimental Design. New York and Basel : Marcel Dekker, Inc.
- 13.3 Diamond, W. J. (1988). Practical experiment designs for engineer and scientists. 2nded. New York :Van Nostrand Reinhold.
- 13.4 Hogg RV. Probability and statistical inference. 5th ed. Prentice-Hall; 1997.
- 13.5 Kuehl, R. O.(1994). Statistical Principles of Research Design and Analysis. California : Duxbury Press.
- 13.6 Neter, J., Wasserman, W., AndKutner, M. (1990). Applied Linear Statistical Models. 3rded. Homewood, Ill :Richard D. Irwin, Inc.
- 13.7 Dawn Griffiths. (2009). Head first statistics. O'Reilly Media.