



Course Syllabus (Academic Year 2021)

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 : -
4. **Class Semester** : 1st Semester 2nd Semester Academic Year 2019
5. **Class Schedule & Venue** : T 13:00 – 16.00 Facebook ClosedGroup ProbStat64, WebEx
6. **Class Coordinator** : Dr. Nuengruithai Tharawatcharasart
 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, sampling and sampling distributions, 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 statistics and application of statistics.				
8.2	To instruct students of the statistic and the application of scientific data, concepts, and statistic models.				
8.3	To provide students with problem solving skills by an approach that describes statistics.				
8.4	To provide students with basic skills of statistics that can be applied.				

9. Class Instructor List

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

9.2 Facebook Group ProbStat64, WebEx

10. Course Outline

Week	Date	Contents	CLOs	Instructor's Names
1-2	10 Aug	Introduction : Introduction to statistics	1	NT
	17 Aug	Introduction : Introduction to statistics	1	NT
3	24 Aug	Probability	1	NT
4	31 Aug	Random variable and probability distribution	1	NT
5-6	7 Sep	Sampling and sampling distributions	1	NT
	14 Sep	Sampling and sampling distributions	1	NT
7-8	21 Sep	Estimation	1	NT
	28 Sep	Estimation	1	NT
9	5 Oct	Mid-term Examination		
10-11	12 Oct	Hypothesis testing	1	NT
	19 Oct	Hypothesis testing	1	NT
12	26 Oct	Application 1	1	NT
13	2 Nov	Analysis of variance	1	NT
14	9 Nov	Application 2	1	NT
15	16 Nov	Correlation and regression analysis	1	NT
16	23 Nov	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	9, 13	40
11.2	Final exam	Writing examination (Open book)	8.1, 8.2, 8.3	18-19	30
11.3	Quiz / Assignments / Personal homework	Complete and On time	8.1, 8.2, 8.3	2-16	30
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 Brook, R. J., And Arnold, G. C. (1985). **Applied Regression Analysis and Experimental Design**. New York and Basel : Marcel Dekker, Inc.
- 13.2 Diamond, W. J. (1988). **Practical experiment designs for engineer and scientists**. 2nded. New York :Van Nostrand Reinhold.
- 13.3 Gomez, Kwanchai A. and Arturo A.(1984). **Statistical Procedures for Agricultural Research**. 2nded.New York :John Wiley & Sons, Inc.
- 13.4 Kuehl, R. O.(1994). **Statistical Principles of Research Design and Analysis**. California : Duxbury Press.
- 13.5 Neter, J., Wasserman, W., AndKutner, M. (1990). **Applied Linear Statistical Models**. 3rded. Homewood, III :Richard D. Irwin, Inc.
- 13.6 Peterson, R. G. (1985). **Design and Analysis of Experiments**. New York :Marcel Dekker, Inc.