



STATHE2 – Statistical Theory 2

Prerequisite: STATHE1 and MATH115

Prerequisite to: LINEMOD

Instructor:____ Consultation Hours:_

Contact details: Class Schedule and Room:_

Course Description

A course in estimation of parameters and tests of hypotheses. Topics include order statistics, limiting distributions, methods of estimation, properties of estimators, hypothesis testing.

Learning Outcomes

On completion of this course, the student is expected to present the following learning outcomes in line with the Expected Lasallian Graduate Attributes (ELGA)

ELGA

Learning Outcome

2.6 Location of Scale Invariance 2.7 Bayesian Estimation Quiz No. 2 2 3. Parametric Interval Estimation 4 3.1 Definition of Confidence Interval 4 3.2 Confidence Intervals 3.2.1 Mean, Variance, Proportion – One Population 4 3.2.2 Mean, Variance, Proportion – One Populations 8 1.1 Preliminaries on Testing Hypotheses 8 1.2 The Neyman Pearson Lemma and the Most Powerful Test 8 1.3 Generalized Likelihood Ratio Tests 1.4 Confidence Intervals and Hypothesis Tests Quiz No. 3 2 Quiz No. 3 2 W W		2.5 Exponential Family of Distributions	
2.7 Bayesian Estimation 2 Quiz No. 2 2 3. Parametric Interval Estimation 4 3.1 Definition of Confidence Interval 4 3.2 Confidence Intervals 3.2.1 Mean, Variance, Proportion – One Population 4 3.2.2 Mean, Variance, Proportion – One Populations 8 1.1 Preliminaries on Testing Hypotheses 8 1.2 The Neyman Pearson Lemma and the Most Powerful Test 8 1.3 Generalized Likelihood Ratio Tests 1.4 Confidence Intervals and Hypothesis Tests Quiz No. 3 2 V W			
Quiz No. 223. Parametric Interval Estimation43.1 Definition of Confidence Interval43.2 Confidence Intervals3.2.1 Mean, Variance, Proportion – One Population83.2.1 Mean, Variance, Proportion – Two Populations81.2 Mean, Variance, Proportion – Two Populations81.1 Preliminaries on Testing Hypotheses81.2 The Neyman Pearson Lemma and the Most Powerful Test81.3 Generalized Likelihood Ratio Tests1.4 Confidence Intervals and Hypothesis TestsQuiz No. 32Quiz No. 345. Inquiry-based Group Project4		2.7 Bayesian Estimation	
3.1 Definition of Confidence Interval V 3.2 Confidence Intervals 3.2.1 Mean, Variance, Proportion – One Population 3.2.2 Mean, Variance, Proportion – Two Populations 8 1.1 Preliminaries on Testing Hypotheses 8 1.2 The Neyman Pearson Lemma and the Most N Powerful Test 1.3 Generalized Likelihood Ratio Tests 1.4 Confidence Intervals and Hypothesis Tests Quiz No. 3 2 W 4. Inquiry-based Group Project			2 hours / Week 8
3.2 Confidence Intervals 3.2.1 Mean, Variance, Proportion – One Population 3.2.2 Mean, Variance, Proportion – Two Populations 4. Hypothesis Testing 8 1.1 Preliminaries on Testing Hypotheses 8 1.2 The Neyman Pearson Lemma and the Most Powerful Test 8 1.3 Generalized Likelihood Ratio Tests 1.4 Confidence Intervals and Hypothesis Tests Quiz No. 3 2 V W	3.	Parametric Interval Estimation	4 hours /
1.1 Preliminaries on Testing Hypotheses N 1.2 The Neyman Pearson Lemma and the Most Powerful Test 1.3 Generalized Likelihood Ratio Tests 1.4 Confidence Intervals and Hypothesis Tests Quiz No. 3 2 W 5. Inquiry-based Group Project 4		 3.2 Confidence Intervals 3.2.1 Mean, Variance, Proportion – One Population 3.2.2 Mean, Variance, Proportion – Two 	Week 9
1.1 Preliminaries on Testing Hypotheses N 1.2 The Neyman Pearson Lemma and the Most Powerful Test N 1.3 Generalized Likelihood Ratio Tests 1.4 Confidence Intervals and Hypothesis Tests Quiz No. 3 2 W 5. Inquiry-based Group Project 4	4.	Hypothesis Testing	8 hours /
1.2 The Neyman Pearson Lemma and the Most Powerful Test 1.3 Generalized Likelihood Ratio Tests 1.4 Confidence Intervals and Hypothesis Tests Quiz No. 3 2 W 5. Inquiry-based Group Project 4			Weeks
5. Inquiry-based Group Project 4		1.2 The Neyman Pearson Lemma and the Most Powerful Test1.3 Generalized Likelihood Ratio Tests	10-11
5. Inquiry-based Group Project 4		Quiz No. 3	2 hours / Week 12
N N	5	Inquiry-based Group Project	4 hours /
	5.	inquiry-based Oroup i roject	Week 13
Final Examination 2		Final Examination	2 hours /
			Week 14

special/make-up quiz will not be eligible for exemption.

Learning outputs are required and not optional to pass the course.

Mobile phones and other forms of communication devices should be on silent mode or turned off during class.

Students are expected to be attentive and exhibit the behavior of a mature and responsible individual during class. They are also expected to come to class on time and prepared.

Sleeping, bringing in food and drinks, and wearing a cap and sunglasses in class are not allowed. Students who wish to go to the washroom must politely ask permission and, if given such, they should be back in class within 5 minutes. Only one student at a time may be allowed to leave the classroom for this purpose.

Students who are absent from the class for more than 5 meetings will get a final grade of 0.0 in the course.

Only students who are officially enrolled in the course are allowed to attend the class meetings.

Approved by:

DR. ARTURO Y. PACIFICADOR, JR. Chair, Department of Mathematics

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