



Course specification

University/Academy: Damanhour University

Faculty/Institute: Science

Department: Mathematics

1. course Data:

Course code: Stat 357	Course title: Statistical Methods	Academic year/level: 2009-2010 Third year - First term
Specialization: Mathematics and Physics	No. of instructional units: lecture <input type="text" value="2"/> tutorial <input type="text" value="2"/> practical <input type="text" value="-"/>	

2. course Aim

The students be familiar with statistical methods from joint and conditional distributions, covariance and correlation coefficients .independence of random variables .Sampling and sampling distribution .central limit theorem χ^2 ,t and F distribution. Interval estimation. Confidence intervals for means and variance (large and small samples). Testing statistical hypothesis, test concerning population mean and variance (large and small samples). Analysis of variance(1 way ANOVA) and simple linear regression and correlation analysis this course includes proofs and discussions at a level of complexity suitable for those intending to specialize in statistics as well as many examples and application of the theorem.

3. Intended learning outcome

a) Knowledge and understanding

A1: List basic concepts of joint and conditional distribution covariance and correlation coefficient independence of random variables and can explain this concept to other.

A2: Recognize between some continuous distribution and there characteristics and application.



	<p>A3: Describe some tools of sampling, types of samples and sampling distribution.</p> <p>A4: Write some guidance about sampling theorems that should be satisfied in sampling theory.</p> <p>A5: Identify some statistical methods of interval estimation hypotheses testing and analysis of variance.</p> <p>A6: Mention types and principles of curve fitting</p>
b) Intellectual skills	<p>B1: Evaluate the joint and conditional distributions.</p> <p>B2: Determine the covariance and correlation coefficient.</p> <p>B3: Apply the independence of random variables.</p> <p>B4: Measure sampling and sampling distribution.</p> <p>B5: Evaluate some continuous distribution χ^2, t and F distribution.</p> <p>B6: Evaluate confidence interval for means and variance.</p> <p>B7: Evaluate testing of hypothesis for means and variance.</p> <p>B8: Apply the analysis of variance(1 way ANOVA).</p>
c) Professional skills	<p>C1: Calculate the joint and conditional distribution.</p> <p>C2: Solve the covariance and correlation coefficient.</p> <p>C3: Use the type of samples.</p> <p>C4: Determine the central limit theorem and use it to solve the problem.</p> <p>C5: Perform the interval estimation and calculate confidence interval for means and variance.</p>



	<p>C6: Use the testing of statistical hypothesis (mean and variance).</p> <p>C7: Calculate the ANOVA table.</p>
d) General skills	<p>D1: Help the students develop new problem solving and critical reasoning skills and to prepare them for future study in mathematics or the physical sciences and natural laws.</p> <p>D2: Work with given information and handle mathematical calculations based on mathematical formulas.</p> <p>D3: Work in groups to solve problems.</p> <p>D4: Apply critical thinking skills to solve problems.</p> <p>D5: Capacity for critical and analytical thinking.</p> <p>D6: Increased appreciation of mathematics as part of the language of science and as study in itself.</p>
4. course content	<p>Bivariate distribution</p> <p>Sampling</p> <p>Continuous distribution</p> <p>Estimation</p>
5. Teaching and learning methods	<p>5.1 Lectures.</p> <p>5.2 Tutorials</p> <p>5.3 Homework</p> <p>5.4 Oral discussion</p>
6. teaching and learning methods for students with special needs	<p>None</p>



7. Student Assessment	
a) Procedures used:	Final exam
b) Schedule:	Assessment 1 Final exam Week 15
c) Weighing of Assessment:	Final exam 100 Marks (100%)
List of Textbooks and References:	
d) Course Notes	Course notes provided by the staff member of Math department, to be handed at the beginning of the semester.
e) Required Books (Textbooks)	Introductions to the theory of statistics.
f) Recommended Books	None
g) Periodicals, web sites,...,etc	None

Course Instructor: Dr. Kardia Awaash

Head of Department: Dr. Ragab Omar Abd El-Rahman

Date: / /