

T6. Course Specification (CS)

Institution : Najran University.	Date : 4-5-1439
College/Department : Faculty of Science and Arts / Mathematical	

A. Course Identification and General Information:

1. Course title and code : Probability Theory 241STAT-3.			
2. Credit hours : Three hours			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs): Program of Mathematics			
4. Name of faculty member responsible for the course : Assoc. Prof. Sultan Ali Mohammed			
5. Level/year at which this course is offered : Level 5/ Third Year			
6. Pre-requisites for this course (if any) : Principles of Statistics and Probability-Calculus(1) , (2) and (3).			
7. Co-requisites for this course (if any) (إن وجدت) : None			
8. Location if not on main campus : College of Science and Arts- Najran-Male and Female College of Science and Arts- Sharoura-Male and Female			
9. Mode of Instruction (mark all that apply) :			
%100%			
a. Traditional classroom	<input type="text"/>	What percentage?	<input type="text"/>
b. Blended (traditional and online)	<input checked="" type="checkbox"/> yes	What percentage?	<input type="text" value="100%"/>
c. e-learning	<input type="text"/>	What percentage?	<input type="text"/>
d. Correspondence	<input type="text"/>	What percentage?	<input type="text"/>
f. Other	<input type="text"/>	What percentage?	<input type="text"/>
Comments :None			

B. Objectives :

1. What is the main purpose for this course?
1. Study of concept of probability .
2. Defining of random variables .
3. Study of discrete and continuous random variables and probability functions.
4. Study of Bivariate variables and joint probability functions.
5. Finding for expectation, variance, covariance and moment generating function.
6. Study of discrete probability distributions and continuous probability distributions.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field):
<ul style="list-style-type: none"> • Update the contents periodically. • Using new references. • Change in contents as a result of new according to the modern orientations.

C. Course Description (Note: General description in the form used in the Bulletin or handbook should be attached):

Course Description :

This course introduce : Basics of probability, random variables, bivariate random variables ,Mathematical expectation, Variance, Conditional Probability Functions, Discrete Probability Distributions and Continuous probability distributions.

1. Topics to be Covered :		
List of Topics	No. of Weeks	Contact Hours
A general introduction to probabilities, Random Variables(Meaning of random variable, Discrete random variables, Continuous random variables , Functions of Random variables).	3	9
Bivariate random variables, Probability functions, Functions of Bivariate random variables.	2	6
Mathematical expectation, Variance, Expectation of Bivariate random variables, Covariance, Correlation, Moments, Moment generating function.	2	6
Conditional Probability Functions, Conditional Expectation, Conditional Variance.	2	6
Discrete Probability Distributions(The discrete uniform distribution, Bernoulli distribution, Binomial distribution, The hyper geometric distribution, Geometric distribution, Negative Binomial distribution, Poisson distribution).	3	9
Continuous probability distribution (Continuous Uniform Distribution, Exponential distribution, Gamma distribution, Beta distribution, Normal distribution).	3	9

1.Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory or studi	Practical	Other:	Total
Contact Hour	45					45
Credit	3					3

3-Additional private study/learning hours expected for students per week	6
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table)

Second, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes.

Third, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain).

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge : By the end of the semester, the students will be able to		
1.1	Recognize the basic concepts of probability theory .		
1.2	Described the meaning of random variables and differentiate between discrete random variables and continuous random variables.	•Lecture •Discussion in small groups around a certain idea or a problem	•Assigning student homework solution. •Quarterly Tests . A final test.
1.3	Described as random variables and double random variables.		
1.4	Write the difference between probability distributions discrete and continuous for the purpose of use in different applications..		
2.0	Cognitive Skills : By the end of the semester, the students will be able to		
2.1	Explain the basic concepts of probability theory.	Lectures - small discussion groups - homework – practice.	• Practical and written tests and oral - discussions.
2.2	Explain and clarify the meaning of random variables and to differentiate		

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	between continuous and discrete variables.		Activities and tasks assigned by the students during the learning and teaching process and then in the form of duties.
2.3	Develop the concepts of random variables to double random variables .		
2.4	Design mathematical to derive all relevant laws.		
2.5	Compare between discrete probability distributions and continuous probability distributions in different applications.		
3.0	Interpersonal Skills & Responsibility : By the end of the semester, the students will be able to		
3.1	Illustrate the opportunity to take responsibility in learning through a variety of tasks and activities assigned to.	Cooperative learning method - Configure teams work to accomplish the duties required	- Observation. - Discussion of each student within his group then discussed together. - Configure teams work to accomplish the duties required
3.2	Demonstrate students to acquire social skills and appropriate communication through talk and express his opinion and respect his ideas and experiences.		
4.0	Communication, Information Technology, Numerical :		
4.1	Evaluate analyze and interpret data to reach new solutions.	-Lectures -Discussions - Practical exercises -Activities and tasks assigned by the students during the learning and teaching process and then in the form of duties.	• Direct observation. • A short written test. Duties.
4.2	Evaluate modern technology in scientific research and communicate with others.		
4.3	Evaluate research, analysis and information retrieval.		
5.0	Psychomotor :		
5.1	Not applicable	Not applicable	Not applicable

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (e.g. essay, test, Quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	First exam	7	25 degrees
2	second exam	12	25 degrees
3	Final exam	16	50 degrees

D. Student Academic Counseling and Support :

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)
Model is placed on the Office of the faculty member specifying the lectures and dates of office hours-
Office Hours:
 - Office hours 3hr/ week.
 - Follow-up of the academic advisor.

E. Learning Resources :

1. List Required Textbooks :
- جلال الصياد, 2008م, نظرية الاحتمالات , دار حافظ للنشر والتوزيع – جدة.
2. List Essential References Materials (Journals, Reports, etc.)
- أنيس إسماعيل كنجو , 2016م, مدخل الي نظرية الاحتمال , الطبعة الاولى , الترقيم العالمي – ISBN : 978-9933-10-662-1
3. List Electronic Materials Web Sites, Facebook, Twitter, etc.
● **Electronic materials available on the internet**
 - Electronic materials available on the internet.
 - Lectures on the Department of Mathematics YouTube Channel.
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
None

F. Facilities Required :

- Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.):
 - Classrooms number of seats = 40 seat
 - Computer rooms containing at most 30 PCs
 - Rooms equipped with modern teaching techniques and different display devices.
 2. Computing resources (AV, data show, Smart Board, software, etc.):
 - Halls equipped with modern learning techniques and different display devices.
 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
None

G. Course Evaluation and Improvement Processes:

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching:
- The distribution of questionnaires to the students at the end of the semester to get the special assessment to a course.
- Interview a sample of students enrolled in the course to take their views.
- Follow-up over the performance and interaction of students with the course through attendance and tests.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the department.:
- Qualitative analysis of the results of the students.
- Suggestions Fund-mail.
3. Processes for Improvement of Teaching :
- A self-assessment by Processor article.
- Ensure aids relating to a course.
- Upgrading the relationship between teacher and student to be a human relationship.
- Follow-up new teaching strategies.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution):
- A special committee as determined by management college at the end of each semester.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :
- Periodic meetings with outstanding students to learn the positive and negative aspects in a course.

Name of instructor : Assoc. Prof. Sultan Ali Mohammed

Signature : _____ **Date Report Completed:** _4/5/1439_

Name of field experience teaching staff: _____

Program coordinator : Dr, Hamood Al-Haddad

Signature: _____ **Date received:** _____