

T6. Course Specification (CS)

Institution	Najran University.	Date	13-08-1439
College/Department:	College of Science and Arts / Mathematical Department		

A. Course Identification and General Information:

1. Course title and code :	linear algebra(342 Math- 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:	Dr. Mohammed Rashad Al-kouri. Department of Mathematics
5. Level/year at which this course is offered	Fifth level/four year
6. Pre-requisites for this course (if any)	Matrix algebra
7. Co-requisites for this course (if any) :	None
8. Location if not on main campus:	<ul style="list-style-type: none"> - College of Arts and Sciences-Najran (Male and Female) - College of Arts and Sciences- Sharurah (Male and Female)
9. Mode of Instruction (mark all that apply)	

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a. Traditional classroom	<input type="text"/>	What percentage? 100%	<input type="text"/>
√ b. Blended (traditional and online)		What percentage?	<input type="text"/>
c. e-learning	<input type="text" value="√"/>	What percentage?	<input type="text" value="100"/>
d. Correspondence	<input type="text"/>	What percentage?	<input type="text"/>
f. Other	<input type="text"/>	What percentage?	<input type="text"/>

Comments :

B. Objectives

What is the main purpose for this course?

1. Providing the concepts and properties of the vector spaces.
2. Introducing some basic concepts such as row and column vector in the matrix, and the rank of the matrix.
3. Providing the concepts of linear transformations and their representative matrices.
4. Training students on how to change the foundations and the similarity matrices.
5. Computing the eigenvalues and eigenvectors for matrices or self-linear effects.
6. Applying mathematical software to solve issues related to these topics

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)

- 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 will cover the foundations of linear algebra . The main focus of this course is the Vectors in double and triple, Spaces of rows and columns spaces linear independence of vectors, Linear transformations and eigenvalues and eigenvectors for matrices

1. Topics to be Covered :		
List of Topics	No. of Weeks	Contact Hours
The Vectors in double and triple spaces - Vector spaces and their properties	3	9
Spaces of rows and columns spaces - Zero matrix.	3	9
Linear independence of vectors - Bases and dimension, the rank of the matrix..	2	6
Linear transformations – kernel- range-nullity of a linear transformation,-linear transformations and matrices - symmetric matrices..	3	9
Eigenvalues and eigenvectors for matrices or self-linear effects, transform matrix corresponding to the diagonal matrix (symmetric matrices).	4	12

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

3-Additional private study/learning hours expected for students per week	3
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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).

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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	Define the vector space and its properties	<ul style="list-style-type: none"> Lecture Discussions 	Midterm and final exams
1.2	Recognize the linear transformation and their representative matrices		
1.2	Identify Row and column vector in matrix and the rank of the matrix		
1.3	Recall the appropriate information to transfer knowledge of the characteristics Of the space to another space. .		
2.0	Cognitive Skills By the end of the semester, the students will be able to		
2.1	Apply the terms of the spaces and finding the concrete examples of spaces and linear transformations.	<ul style="list-style-type: none"> Method of collaborative learning. Way to solve problems The way the debate. 	<ul style="list-style-type: none"> Practical and written tests and oral - discussions. <p>Activities and tasks assigned by the students during the learning and teaching process and then in the form of duties.</p>
2.2	Determine the differences between spaces.		
2.3	Compute the eigenvalues and eigenvectors for matrices or self-linear effects.		
2.3	Apply the mathematical software to solve issues related to these topics		
3.0	Interpersonal Skills & Responsibility By the end of the semester, the students will be able to		
3.1	<ul style="list-style-type: none"> Work as part of a team and Independently. 	Group problems solving during tutorial	<ul style="list-style-type: none"> Observation. Discussion of each student within his group then discussed together. - Configure teams work to accomplish the duties required to participate in scientific

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
			seminars.
4.0	Communication, Information Technology, Numerical		
4.1	Use the Internet in the development of the perceptions of the students related to the course.	<ul style="list-style-type: none"> Method of practical exercises. The way the survey. Using the Web Quest. 	<ul style="list-style-type: none"> Direct observation. A short written test. Duties.
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: 6 hours per week.

E. Learning Resources

1. List Required Textbooks :

-مصطفى , حامد هويدي ,, مقدمة في الجبر الخطي ,, مكتبة المتنبى , 2007

2. List Essential References Materials (Journals, Reports, etc.)

.Elementary linear algebra (3rd Edition). By: Bernard Kolman
3. List Electronic Materials Web Sites, Facebook, Twitter, etc. http://www.arab-math.com/forum/forumdisplay.php http://en.wikipedia.org/wiki/Mathematics
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 seats approx. - Halls equipped with modern learning techniques and different display devices.
2. Computing resources (AV, data show, Smart Board, software, etc.)
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

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 the decision. - 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. Final students assessment (Evaluation Survey) of the course .
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. - Course Report Course Porto folio
3. Processes for Improvement of Teaching: - A self-assessment by Processor article. - Ensure aids relating to the decision. - 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.

- Course Report

Course Porto folio

Peer Reviewer -

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 the decision.

- Studying Course Report & Improvement Plan

Studying Course Porto folio (Trend Analysis)

Measuring Related KPIs -

Name of instructor : Mohammed Rashad al-kouri

Signature : _____ **Date Report Completed:** ____ 13/8/1439 H _____

Name of field experience teaching staff: _____ None _____

Program coordinator : Dr. Hamoud AL-Haddad _____

Signature: _____ **Date received:** __ 1439 H _____