Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Academic Program Description Form

University Name: *Tikrit*

Faculty/Institute: *College of Education for woman*

Scientific Department: *Mathematic*

Academic or Professional Program Name: **Master**

Final Certificate Name: **Master of Science in Mathematics**

Academic System: *Yearly*

Description Preparation Date: *18/2/2024*

File Completion Date *24/2/2024*

Signature:

Name: Prof. Luma Saad Abdalraqi

Head of Department

Date:

Signature:

Name: Prof. Dr Intisar Ghanem Abdel Wahab

Scientific Associate

Date 26/3/2024

The file is checked by: Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Signature:

Assis. lecturer, Shahid Khaled Hamid

Date: 25/3/2024

Approval of the Dean

Prof. Dr. Naglaa Abdel Hussein Aliwi

Introduction:

The educational program is a well—planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: **A** compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra—curricular activities to achieve the learning outcomes of the program.

Concepts and terminology:

<u>Academic Program Description</u>: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

<u>Course Description</u>: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

<u>Program Vision</u>: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

<u>Program Mission</u>: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

<u>Program Objectives</u>: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

<u>Curriculum Structure</u>: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

<u>Learning Outcomes</u>: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

<u>Teaching and learning strategies</u>: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra- curricular activities to achieve the learning outcomes of the program.

Course Description Form

1. Course Name:
Topology

2. Course Code:

3. Semester / Year:
2023-2024

4. Description Preparation Date:
2024-6-14

5. Available Attendance Forms:

6. Number of Credit Hours (Total) / Number of Units (Total)
2 hours every week \ Total hours are 30 hours

7. Course administrator's name (mention all, if more than one name) Name : Rana Bahjat Yaseen Emil : zain2016@tu.edu.iq
Name : Rana Bahjat Yaseen Emil : zain2016@tu.edu.iq

8. Course Objectives	
Course Objectives - Study and knowledge of Product topological spaces - Study types of Nano topological spaces - Study the concept Grill open sets	• ....

9. Teaching and Learning Strategies

Strategy	Applying various teaching methods ,including - Giving lectures Discussion method and electronic method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Product topological spaces	Product spaces, Bases and subbases	Electronic lectures, smart board ,pen	Written and daily exams with assignments

2	2	Euclidean topology	Euclidean topology	Electronic lectures, smart board ,pen	Written and daily exams with assignments
3	2	Nano topological spaces	Nano open , Nano closed , Bases , Nano interior , Nano exterior , Nano limite , Nano closure	Electronic lectures, smart board ,pen	Written and daily exams with assignments
4	2	Nano topological spaces	Nano continuous functions , Nano open and closed and Nano homeomorphism	Electronic lectures, smart board ,pen	Written and daily exams with assignments
5	2	Nano connected	Nano Separated, Nano disconnected	Electronic lectures, smart board ,pen	Written and daily exams with assignments
6	2	Nano Compactness	Covers , Nano compact sets	Electronic lectures, smart board ,pen	Written and daily exams with assignments
7	2	Nano Separation axioms	NanoT0 –space , NanoT1 –space	Electronic lectures, smart board ,pen	Written and daily exams with assignments
8	2	Nano Separation axioms	NanoT2- space	Electronic lectures, smart board ,pen	Written and daily exams with assignments
9	2	Nano Separation axioms	Nano regular space, Nano normal space	Electronic lectures, smart board ,pen	Written and daily exams with assignments
10	2	Grill open set	Grill open sets and local operated	Electronic lectures, smart board ,pen	Written and daily exams with assignments
11	2	Grill topological spaces	Grill topological spaces, basis	Electronic lectures, smart board ,pen	Written and daily exams with assignments
12	2	Grill Nano topological spaces	Grill Nano open set , Grill Nano closed , Grill Nano interior , Grill Nano closure	Electronic lectures, smart board ,pen	Written and daily exams with assignments

13	2	Some types Nano open set	Regular , alpha , semi , pre , beta Nano open sets	Electronic lectures, smart board ,pen	Written and daily exams with assignments
14	2	Some types Grill Nano open set	Regular , alpha , semi , pre , beta Grill Nano open sets	Electronic lectures, smart board ,pen	Written and daily exams with assignments
15	2	Some types Continuous in Nano topological spaces	Continuity and topological equivalence	Electronic lectures, smart board ,pen	Written and daily exams with assignments

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports...etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	General Topolgy Seymour lipschutz
Main references (sources)	Topology and maps by T. Husain 1977
Recommended books and references (scientific journals, reports…)	Malaya Journal of Matematik International Journal of mathematics
Electronic References, Websites	and statistics invention

Course Description Form

1. Course Name:	
Research Method	
2. Course Code:	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2024-6-14	
5. Available Attendance Forms:	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours every week \ Total hours are 30 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Luma Saad Abdalbaqi Email : lumahhany1977@tu.edu.iq	
8. Course Objectives	

Course Objectives	- For the student to know the concept of science, its objectives and characteristics, to know the scientific knowledge of the components of the scientific and non-scientific method of obtaining knowledge. Explain how scientific quotation, conditions and types are to know the tools of information and data collection .....

Strategy 9. Teaching and Learning Strategies

- Modern learning and teaching strategies

10. Course Structure

Hours	ed Learning Outcomes	Unit or sub name	Learning method	Evaluation method
2		The concept of scientific research and its importance.		Written and daily exams with assignments
2		and its importance. Research Definitions		Written and daily exams with assignments

		(research title, research problem, research objectives, research limits, research terms),		
2		information collection and theoretical data, superficial and in-		Written and daily exams with assignments
2		- depth reading. Sample types random samples. - non-random samples - non-random.		Written and daily exams with assignments
2	c	samples: scientific research methods: - experimental method. - definition of experimental		Written and daily exams with assignments
2		of experimental method. - experimental experimental designs: One group style. Group rotation		Written and daily exams with assignments
2		- experimental research terms. variables. Move in the amount of the experimental variable. Types of experiments. Laboratory and non-laboratory experiments. One group experiences and equal groups. Short and long trials. Types of to write the letter.		Written and daily exams with assignments
2		riable. Types of experiments Scientific Books. Types of scientific writings		Written and daily exams with assignments
2		The concept of n-depth reading. Sample types. - random samples. - non-random samples		Written and daily exams with assignments

		- non-random samples: scientific research methods: - experimental method. - definition of experimental g write the letter. When do you start writing the letter? The main steps proposed to write the letter.		
2		The concept style. dissertation. Periodicals. Bulletins Bulletins. Reports. Books Books Scientific arch papers. article - Review article. Book authoring. publication. Methods of publishing the message. The		Written and daily exams with assignments
2		The concept of scientific research terms. variables. Move in the amount of the ting the letter? The main steps proposed to write the letter.		Written and daily exams with assignments
2		The ve in the amount of the experimental variable. Types of experiments. Laboratory and non-laboratory start writing the letter? The main steps proposed to write the letter.		Written and daily exams with assignments
2		These are the of the message. When do you start writing the letter? The main steps proposed to write the letter..		Written and daily exams with assignments
2		The concept of scientific. letter? The main steps proposed		Written and daily exams with assignments

		to write the letter. When do you start writing the letter? The main steps proposed to write the letter.	13	
2		Review. RES Research write the letter. When do you start writing the letter? The main steps proposed to write the letter.		Written and daily exams with assignments

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .....etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)		
Main references (sources)		منهجية البحث العلمي" تأليف د. عبد الرحمن بدوي.
Recommended books and references (scientific journals, reports…)		أصول البحث العلمي" تأليف د. فيصل عباس.
Electronic References, Websites		البحث العلمي: مفهومه وأدواته وأساليبه" تأليف د. ذوقان عبيدات ود. عبد الرحمن عدس.

المقالات العلمية عبر قواعد البيانات ☐
الأكاديمية مثل Google Scholar
وResearchGate.
المجلات العلمية مثل "مجلة العلوم ☐
الاجتماعية" و"مجلة البحوث التربوية".
المواقع الالكترونية الرصينة.
ـ المكتبة الافتراضية.

مواقع المكتبات في بعض الجامعات العالم

موقع الأكاديمية العربية المفتوحة. ☐

موقع Elsevier للأبحاث العلمية.

Course Description Form

1. Course Name:
Functional Analysis

2. Course Code:

3. Semester / Year:
2023-2024

4. Description Preparation Date:
14/ 2/ 2024

5. Available Attendance Forms:
Weekly

6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours / 2 unit

7. Course administrator's name (mention all, if more than one name)
Name: Elaf Sabah Abdulwahid Email: elafs.math@tu.edu.iq

8. Course Objectives

.....
.....

- Study and knowledge of normed space.
- Study and knowledge of inner product space.
- Study and knowledge some properties of Hilbert space.
- Study and knowledge linear functional and linear operator on Hilbert space.
- Study and knowledge separable space.
- Study and knowledge invertible on Hilbert space.

9. Teaching and Learning Strategies	
Strategy	Applying various teaching methods ,including - Giving lectures Discussion method and electronic method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Introduction to Hilbert space with some examples and theorems.	Hilbert space	Electronic lectures, smart board ,pens	Written and daily exams with assignments
3-5	6	Study of seprable space and give some theorems., propositions and examples .	Separable space.	Electronic lectures, smart board ,pens	Written and daily exams with assignments
6-7	4	study orthogonal and orthogonal complement with some examples and theorems	Orthogonal and orthogonal complement	Electronic lectures, smart board ,pens	Written and daily exams with assignments
8-9	4	Study some properties of Fourier series and convex set.	Fourier series and convex set	Electronic lectures, smart board ,pens	Written and daily exams with assignments
10-11	4	Study some properties of bounded Linear functional	Linear functional	Electronic lectures, smart board ,pens	Written and daily exams with assignments
12-13	4	Study some properties of bounded Linear operator with some examples.	Linear operators	Electronic lectures, smart board ,pens	Written and daily exams with assignments
14-15	4	Study some operators in Hilbert space.	operators in Hilbert space	Electronic lectures, smart board ,pens	Written and daily exams with assignments

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports…

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	~~Introductory Functional Analysis with Applicati~~ By Erwin Kreyszig. Introduction to Hilbert space by Berberian.
Main references (sources)	Linear Functional Analysis by Bryan P.Rynne and Martin A. Yongson.
Recommended books and references (scientific journals, reports…)	A course in Functional Analysis , Tohan B. C
Electronic References, Websites	

Course Description Form

1. Course Name:
Advance Group Theory

2. Course Code:

3. Semester / Year:
2023-2024

4. Description Preparation Date:
14/2/2024

5. Available Attendance Forms:

6. Number of Credit Hours (Total) / Number of Units (Total)
30

7. Course administrator's name (mention all, if more than one name)
Name: **Akram salim mohammed**   Email: akr_tel@tu.edu.iq

8. Course Objectives

Course Objectives	• Identify the concept of group, its types an Applications

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Mastery of the fundamental concepts of groups, such as group operations, group axioms, subgroup structure, and group homomorphisms=	1- Group properties and structures	Deductive - Induction - Discussion - Using Data Show and white board .	Oral discussion -Daily exams Monthly exams Homework - assignments –

				=	=
				=	=
2	2	Proficiency in analyzing and proving properties of groups, including group orders, cyclic groups,.	Cyclic groups and normal subgroups	=	=
				=	
3	2	Understanding the definition and basic structure of dihedral groups, denoted as DnD_nDn, which consist of symmetries of a regular nnn-gon (including rotations and reflections).	Dihedr al gr ou ps		
4	2	Understanding the definition and construction of the direct product			
5	2	Understanding the definition of a decomposable group as a group that can be expressed as a direct product	Direct product of groups		
6	2	Understanding the definition of permutation	Decomposable groups		

19

		groups as groups that consist of all possible permutations of a finite			
7	2	Understanding isomorphisms of groups is fundamental in group theory, revealing deep insights into the structural similarities and differences between different groups.	Permutations groups Isomorphisms		
8	2	Students should be able to define what an automorphism is in the context of a given algebraic structure (e.g., a group, a ring, a field) and understand its significance in preserving the structure while allowing for transformations. Understanding the properties of automorphisms, such as how they form a group under composition (the automorphism group), and recognizing important subgroups or elements within this group.	Group of Automorphism		
9	2	Students should be able to state Cauchy's First Theorem precisely and understand its implications for finite groups.			

10-11	4	Studying the Sylow theorems in group theory provides several key learning outcomes, which deepen understanding of the structure and properties of finite groups. The Sylow theorems are a set of results that provide information about the existence and properties of certain subgroups within finite groups. Here are the learning outcomes associated with the Sylow theorems	Cauchy's Theorems Sylow Theorem		
12-13	4	Students should be able to define a series of groups, including composition series and normal series, and distinguish between different types of series such as subnormal series, chief series, and Jordan-Hölder series			
14	2	Studying nilpotent groups, a class of groups with distinctive properties related to the behavior of their lower central series, provides several key learning outcomes in group theory and algebra	Series of Groups Nilpotent Groups		

11. Course Evaluation

12.   Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Ordinary differential equations

2. Course Code:
Math.204

3. Semester / Year:
2023-2024

4. Description Preparation Date:
18/2/2024

5. Available Attendance Forms:
Actual presence/distance learning/recording video lessons

6. Number of Credit Hours (Total) / Number of Units (Total)
4/6

7. Course administrator's name (mention all, if more than one name)
Name: Amer Fadhel Nassar Email: amer6767@tu.edu.iq

8. Course Objectives

Course Objectives	- Ordinary differential equations are considered one of the main topics in mathematics, and the student usually studies the topic after studying several chapters on the topic of calculus and integration, especially methods of integration - Emphasis on studying the concepts themselves and how they develop, and on the logical structure of the topic as a whole. - Emphasizing the importance of ordinary differential equations in our lives. - Ensure to demonstrate the role of ordinary differential equations and their applications. - Emphasis on studying the types of solutions. - Emphasizing the importance of studying theorems and their most important applications. - Emphasis on studying theorems that provide shortened solutions in time and effort.

9. Teaching and Learning Strategies

Strategy	● Use explanation and clarification to present concepts. ● Interact with students through discussions and practical exercises. ● Use real-life examples and applications to illustrate mathematical ideas.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
3	12	Chapter 1	Types of differential equations - the order of the differential equation - the degree of the differential equation - linear differential equations - solving the differential equations - forming the differential equation from its general solution - the theorem of the existence of the solution of the differential equation and the unity of the solution and its generalization to order n	Electronic lectures, smart board and pen	Exam, reports
10	40	Chapter 2	Equations whose variables separate - equations of the homogeneous type - differential equations with linear coefficients - exact differential equations - linear differential equations - Bernoulli's equation - reducing the order of equations	Electronic lectures, smart board and pen	Exam, reports

2	8	Chapter 3	Higher order equations - simultaneous differential equations - engineering applications - physical applications	Electronic lectures, smart board and pen	Exam, reports
6	24	Chapter 4	Linear differential equations - the operator- solving linear differential equations - Euler's equation	Electronic lectures, smart board and pen	Exam, reports
2	8	Chapter 5	Laplace transforms - inverse Laplace transforms	Electronic lectures, smart board and pen	Exam, reports
8	32	Chapter 6	Solving differential equations with series - Frobenus method - Frobenus equation - Bessel differential equation	Electronic lectures, smart board and pen	Exam, reports

11. Course Evaluation
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.:   • Daily preparation.   • Daily exams.   • Oral and monthly tests.   • Written tests.   • Preparing reports and research projects.   • Quarterly activities and participation in discussions.   • Student performance in class and interaction with study materials

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	[1] Khaled Ahmed Al-Samarrai, Yahya Abdel Saeed: Methods of solving differential equations.

	[2] Salim Ismail Al-Gharabi, Sabah Hadi Al-Jassim: Differential equations.
Main references (sources)	[3] S. K. Kate: Engineering Mathematics - II
Recommended books and references (scientific journals, reports...)	Thomas calculus 12th edition
Electronic References, Websites	• University websites that provide educational materials on differential equations • Scientific articles and research available online in the field of differential equations.

Course Description Form

1. Course Name:
Scientific Plagiarism

2. Course Code:

3. Semester / Year:
2023-2024

4. Description PreparationDate:
:   2024-2-14

5. Available Attendance Forms:
Attendance Education and E-Learning

6. Number of Credit Hours (Total) / Number of Units (Total)
40 hour/2units

7. Course administrator's name (mention all, if more than one name)
Name:Sundns Noory Shukur Email:snory@tu.edu.iq

8. Course Objectives
Course Objectives Providing students with theoretical information on how to steal scientific and programs for plagiarism Teaching students scientific honesty, plagiarism and plagiarism Providing students with scientific and theoretical information on how to face the profession and build a strong professional personality for them through the guidance and advice provided to them

9. Teaching and Learning Strategies	
Strategy	Modern learning and teaching strategies – where the teacher is prepared, trained and adequately

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Chapter 1	Definition of scientific plagiarism 27	Lecture and discussion	Daily and monthly test Homework

2	2	Chapter2	What percentage of scientific plagiarism is allowed in Iraq	Lecture and discussion	Daily and monthly test Homework
3	2	Chapter 3	What is the difference between a quote and a quote	Lecture and discussion	Daily and monthly test Homework
4	2	Chapter 4	Types of plagiarism programs	Lecture and discussion	Daily and monthly test Homework
5	2	Chapter 5	Scientific Secretariat	Lecture and discussion	Daily and monthly test Homework
6	2	Chapter 6	Types of scientific plagiarism	Lecture and discussion	Daily and monthly test Homework
7	2	Chapter 7	Scientific plagiarism	Lecture and discussion	Daily and monthly test Homework
8	2	Chapter 8	Benefits of plagiarism for scientific research	Lecture and discussion	Daily and monthly test Homework

11. Course Evaluation

Daily preparation. Daily exams. Oral and monthly tests. Written tests. Preparing reports and research projects. Quarterly activities and participation in discussions. Student performance in class and interaction with study materials

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Curriculum and textbook
Main references (sources)	General teaching methods
Recommended books and references (scientific journals, reports…)	Cognitive learning and teaching strategies
Electronic References, Websites	Sober websites. - Virtual library. - Library sites in some international universities

Course Description Form

1.Course Name:
Modern mathematics teaching methods.

2.Course Code:

3.Semester/Year:
2023-2024

4.Description PreparationDate:
2024-2-14

5. Available Attendance Forms:
Attendance Education and E-Learning

6. Number of Credit Hours (Total) / Number of Units (Total)
40 hour/2units

7. Course administrator's name (mention all, if more than one name)
Name:Sundns Noory Shukur   Email:snory@tu.edu.iq

8. Course Objectives

Course Objectives	Providing students with theoretical information on how to communicate the teaching method Teaching students basic and supportive sciences Providing students with scientific and theoretical information on how to face the profession and build a strong professional personality for them through the guidance and advice provided to them

9. Teaching and Learning Strategies

Strategy	Modern learning and teaching strategies – where the teacher is prepared, trained and adequately

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Chapter 1	Definition of teaching methods	Lecture and discussion	Daily and monthly test Homework
2	2	Chapter2	The importance of teaching methods	Lecture and discussion	Daily and monthly test Homework
3	2	Chapter 3	Educational objectives and behavioral goals	Lecture and discussion	Daily and monthly test Homework
4	2	Chapter 4	Types of teaching methods	Lecture and discussion	Daily and monthly test Homework
5	2	Chapter 5	Planning for teaching	Lecture and discussion	Daily and monthly test Homework
6	2	Chapter 6	Types of plans	Lecture and discussion	Daily and monthly test Homework
7	2	Chapter 7	Thinking Maps	Lecture and discussion	Daily and monthly test Homework
8	2	Chapter 8	Survey	Lecture and discussion	Daily and monthly test Homework

11. Course Evaluation

Daily preparation. Daily exams. Oral and monthly tests. Written tests. Preparing reports and research projects. Quarterly activities and participation in discussions. Student performance in class and interaction with study materials

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Curriculum and textbook
Main references (sources)	General teaching methods
Recommended books and references (scientific journals, reports…)	Cognitive learning and teaching strategies
Electronic References, Websites	Sober websites. - Virtual library. - Library sites in some international universities

Course Description Form

1.	Course Name: **Numerical Analysis**

2.	Course Code:

3.	Semester / Year: 2023-2024

4.	Description Preparation Date:1/9/2023

5. Available Attendance Forms: In class

6. Number of Credit Hours (Total) / Number of Units (Total): units

7. Course administrator's name (mention all, if more than one name)
Name: **Mohammad Sabawi**   Email:**mohammad.sabawi@tu.edu.iq**

8. Course Objectives	
Course Objectives	• Learning Numerical Analysis • Learning Numerical Algorithms • Learning Numerical Methods

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

2	**Hours**	**Required Learning Outcomes**	MSc		**Evaluation method**

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports …… etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	