كلية العلوم
Faculty of Science
جامعة تبوك
University of Tabuk

Master Program in Mathematics Handbook

Department of Mathematics

1444H-2023

Contents

1. Mathematics Department

The Mathematics Department was established in the academic year 1427/14/28 H. The study in the Mathematics Department focuses on various branches of mathematics. The university and faculty are committed to provide distinguished academic programs that contribute to meet the demands of the local and regional job market and contribute to achieve the Vision 2030 of Saudi Arabia.

1.1 Vision

"Excellence in mathematics education and scientific research to serve the community locally and regionally".

1.2 Mission

"Preparing graduates qualified in mathematics and its applications to meet labor market needs and serve the local community, and able to conduct scientific research and innovation".

1.3 Degree Offered by the Department of Mathematics

- Bachelor in Mathematics
- Master in Mathematics

2. Master Program in Mathematics

The Master Program in Mathematics was established in the academic year 1431/1432 H, in accordance with the decisions of the Tabuk University Council (No. 2) on 06/01/1431 H. The department has started to accept male and female students for the Master's Program with academic courses and research project thesis, starting from the academic year 1431/1432.

2.1 Vision

"Excellence in the preparation of specialized scientific cadre in mathematics that contributes in the promotion of scientific research, its applications and serve the community".

2.2 Mission

"Prepare qualified scientific cadre with advanced mathematical knowledge and skills through an academic environment that encourages scientific research and contributes to community service".

2.3 Objectives

- To prepare distinguished qualified scientific cadre with mathematical knowledge and skills, able to communicate effectively in their work environment using appropriate techniques, orally and in writing.

- To promote distinguished scientific research, capabilities of critical thinking and participation in research programs in various fields of mathematics.
- To contribute in community service, social responsibility, follow professional ethics, and religious values.
- To develop a supportive academic environment that meets the beneficiary's expectations.

2.4 Program Learning Outcomes

The program aims to graduate students who are distinguished by their cognitive knowledge, various skills, and values.

Knowledge & Understanding:

- Demonstrate various ideas and advanced concepts in different branches of mathematics.
- Describe different methods for mathematical problems and keep up with the recent advancements in this field.
- Enhance advanced knowledge and understanding of research methodology.

Skills:

- Apply advanced mathematical concepts in conducting scientific research in various fields of mathematics.
- Analyze and solve complicated mathematical problems using advanced numerical methods.
- Use of creative critical thinking and advanced analytical reasoning in solving complex mathematical problems.
- Communicate ideas concisely, accurately and effectively using written and oral presentations.

Values:

- Perform work professionally and ethically and manage specialized tasks with autonomy.
- Demonstrate responsibility, leadership and self-learning during work individually or in group research.

2.5 Program Tracks

The program does not offer any specialization tracks.

2.6 Program Exit Points

The program currently has no exit points.

3. Definitions

- **Academic Year**
  The academic year consists of two main semesters and a summer semester, if available.

- **Semester**
  The semester is a term of no less than 15 weeks of instructions in which courses are taught, not including the registration and final examination periods.

- **Academic Level**
  The academic level refers to the study level. The required levels for graduation are four or more according to recognized study plans.

- **Study Plan**
  The study plan is a group of required, elective, and core courses that, their credit hours form the graduation requirements, students need to successfully pass in order to obtain the degree in the relevant specialization.

- **Course**
  The course is a subject of study within a certain academic level of the approved degree plan in each major. Each course has a number, code, detailed specifications description which distinguishes it and its content from other courses within a level. A portfolio on each course is kept in the corresponding department for the purpose of follow-up, evaluation, and development. Some courses may have requirements, prerequisites, or concurrent requirements.

- **Academic Probation**
  Academic probation is a notification given to a student with a cumulative GPA below the minimum acceptable limit as explained in these regulations.

- **Class Work Score**
  Class work score is the score which reflects the student's standing during a semester according to his/her performance in the examinations, research and other activities related to a particular course.

- **Final Examination**
  The final examination is an examination in the course to be conducted once at the end of every semester.

- **Final Examination Score**
  The final examination score attained by the student in each course on the final

examination.

- **Final Score**

  The final score is the total of the class work score plus the final examination score calculated for each course out of a total grade of 100.

- **Course Grade**

  The course grade is a description of the percentage, or alphabetical letter for the final grade the student obtained in a course.

- **Incomplete Grade**

  The incomplete grade is a temporary provisional grade assigned for each course in which a student fails to complete the requirements by the required date. This is indicated in the student academic record with the letter grade — "IC".

- **In Progress Grade**

  The In-progress grade is a provisional grade assigned for each course which requires more than one semester to complete. The letter grade "IP" is assigned in this case.

- **Semester GPA**

  Semester GPA is the total number of quality points the student has achieved, divided by the total credit hours assigned for all the courses the student has taken in any semester. The quality points are calculated by multiplying the credit hours by the grade earned in each course.

- **Cumulative GPA**

  Cumulative GPA is the total number of quality points the student has achieved in all courses he/she has taken since his/her enrollment at the University, divided by the total number of credit hours assigned for these courses.

- **Graduation Ranking**

  Graduation ranking is a description of the assessment of the student's scholastic achievement during the period of his/her study at the University.

- **Academic Load/Minimum Load:**

  The academic load is what a student must take in a semester based on his/her GPA, as determined by the University Council.

4. Study Plan

4.1 Program Courses

Academic accreditation requirements need percentages of the program requirements for the compulsory and elective subjects according to the following table:

Program Structure	Required/ Elective	No. of Courses	Credit Hours	Percentage
Course	Required	7	19	44%
	Elective	7	21	49%
Graduation Project (if any)	Required	1	3	7%
Total		15	43	100%

4.2 Program Compulsory Courses

No	Course Code	Course Title	Credit Hours	Prerequisite
1	MATH630	Abstract Algebra	3	None
2	MATH659	Ordinary Differential Equations	3	None
3	MATH660	Numerical Analysis	3	None
4	MATH661	Real Analysis	3	None
5	MATH636	General Topology I	3	None
6	MATH653	Functional Analysis I	3	None
7	MATH690	Discussion	1	None
8	MATH695	Research Project	3	None

4.3 Program Elective Courses

No	Course Code	Course Title	Credit Hours	Prerequisite Courses
1	MATH631	Linear Algebra	3	None
2	MATH640	Topology and Analysis in R	3	None
3	MATH641	Functional Analysis II	3	MATH653
4	MATH642	Measure Theory I	3	None
5	MATH644	Galois theory	3	None
7	MATH647	Graph Theory	3	None
8	MATH649	General Topology II	3	MATH636

No	Course Code	Course Title	Credit Hours	Prerequisite Courses
9	MATH654	Measure Theory II	3	MATH642
10	MATH658	Perturbation Theory	3	None
11	MATH665	Fluid Mechanics	3	None
12	MATH666	Approximation Theory	3	None
13	MATH667	Applications on Partial Differential Equations	3	None
14	MATH668	Partial Differential Equations	3	None
15	MATH669	Mathematical Programing	3	None
16	MATH670	Numerical Solution of ODE's	3	None

4.4 Course Distribution Table According to Program Levels

Level	Course Code	Course Title	Required/ Elective	Credit Hours
Level 1	MATH630	Abstract Algebra	Required	3
	MATH636	General Topology I	Required	3
	MATH659	Ordinary Differential Equations	Required	3
	MATH661	Real Analysis	Required	3
Level 2	MATH653	Functional Analysis I	Required	3
	MATH660	Numerical Analysis	Required	3
	MATHxx1	Elective Course	Elective	3
	MATHxx2	Elective Course	Elective	3
Level 3	MATH690	Discussion	Required	1
	MATHxx3	Elective Course	Elective	3
	MATHxx4	Elective Course	Elective	3
	MATHxx5	Elective Course	Elective	3
Level 4	MATH695	Research Project	Required	3
	MATHxx6	Elective Course	Elective	3
	MATHxx7	Elective Course	Elective	3

4.5 Courses Descriptions

Course	Description
MATH630 [Abstract Algebra]	In this course, we will study some basic fundamentals of Abstract Algebra. Some important properties, theorems, problems, and applications will be also discussed.

MATH630 **[Linear Algebra]**	In this course, we will study some basic fundamentals of Linear Algebra. Some important properties, theorems, problems, and applications will also be discussed.
MATH636 **[General Topology I]**	In this course, we will study basic set theory (Countable and uncountable sets, Cartesian products), Topological spaces (Basis for a topology, Product topology, Functions, Homeomorphisms), Connected and path connected spaces, Compactness in metrizable spaces, Countability axioms, First and second countable spaces, Separation axioms, Urysohn's lemma, Urysohn's metrization theory, Complete metric spaces.
MATH640 **[Topology and Analysis in Rn]**	In this course, we will study connected spaces, Path connected spaces, Components, Locally connected spaces, Quotient spaces, Separation axioms, Limit, continuity and differentiability of function of several variables, Mean value theorem, Taylor's theorem, Inverse and implicit function theorems, Smooth manifolds, Tangent spaces, Smooth functions on manifolds, Inverse and implicit function theorems on manifolds.
MATH641 **[Functional Analysis II]**	In this course, we will study compact Linear Operators and Their Spectral Properties, Spectral Properties of Bounded and Self-adjoint Operators, Spectral Family of Bounded Self-adjoint Operators, Spectral Representation of Bounded Self-adjoint Operators, Banach Algebra, Commutative Banach Algebra, Spectral Theory in Banach Algebra, Gelfand Mapping, Spectral Theorem for Normal Operators, Some Questions and Applications.
MATH642 **[Measure Theory I]**	In this course, we will study Sigma-Algebras, Monotone Classes, Measure Basic Concepts, Outer Measure, Extension Theorems, Completion and Approximation Theorems, Lebesgue and Lebesgue-Stieltjes Measures, Distributions and Probability Measure, Measurable Functions, Integration with respect to a measure, Basic Theorems, Convergence of Measurable Functions.
MATH644 **[Galois Theory]**	In this course, we will study some basic fundamentals of Galois Theory. Some important properties, theorems, problems, and applications will be also discussed.
MATH647 **[Graph Theory]**	In this course, we will study various concepts of Graph Theory. Furthermore, related important properties, theorems, problems, and other applications of Graph Theory will also be discussed.

MATH649 **[General Topology II]**	In this course, we will study paracompactness, Properties of paracompact spaces, Types of refinements, Stone's coincidence theorem, Function spaces, Convergence and completeness, Metrization, Uryohn's lemma, Tietz's extension theorem, Tychonoff theorem, Topological n-manifolds, Direct and inverse systems of topological spaces.
MATH653 **[Functional Analysis I]**	In this course, we will study some basic fundamentals of Functional Analysis. Some important properties, theorems, problems, and applications will be also discussed.
MATH654 **[Measure Theory II]**	In this course, we will study Product measured spaces. Fubini's theorem. Infinite product probability spaces, Kolmogorov's consistency theorem. Radon-Nikodym theorem. Conditional probability, Conditional expectation. Daniel's integral. Riesz- Representation Theorem. Haar measures on a compact group.
MATH658 **[Perturbation Theory]**	In this course, we will study the solution of nonlinear differential equations having no exact or problematic solutions. In fluid mechanics, perturbation theory is applied to solve airfoil and wing aerodynamics as well as high and low Reynolds number flow. It is expected the students are familiar with this mathematical tool in this course and they can apply different methods to solve a regular or singular perturbation equation.
MATH659 **[Ordinary Differential Equations]**	In this course, we will study some basic fundamentals of Ordinary Differential Equations, Uniqueness and Existence Theorem of Picard's method, the Lipschitz Condition and the Lipschitz constant, the eigenvalues and eigenfunctions for the given eigenvalue problems, converting the given differential equation in to the Sturm-Liouville Equation, orthogonality of Eigenfunctions.
MATH660 **[Numerical Analysis]**	In this course, we will study the solution of the nonlinear equations numerically and having no exact solutions. In this course, we will study some advanced fundamentals of numerical analysis. Some important properties, theorems, problems, and applications will be also discussed.
MATH661 **[Real Analysis]**	In this course, we will study some basic fundamentals of Real Analysis. Some important properties, theorems, problems, and applications will be also discussed.
MATH665 **[Fluid Mechanics]**	In this course, we will study some basic fundamentals of Fluid Mechanics. Some important properties, theorems, problems, and applications will be discussed.

MATH666 [Approximation Theory]	In this course, we will study polynomial Interpolation: Lagrange interpolation formula, error in polynomial interpolation, Newton's interpolation method, Hermite interpolation. The approximation problem, existence of best approximation and uniqueness: approximation in a metric space, approximation in normed space, conditions for uniqueness of the best approximation, the uniform convergence of polynomial approximations, Least Squares approximation, Chebyshev approximation, Spline approximation.
MATH667 [Application on Partial Differential Equations]	In this course, we will study some basic fundamentals of Applied Partial Differential Equations. Some important properties, theorems, problems, and applications will be also discussed.
MATH668 [Partial Differential Equations]	In this course, we will study the treatment of the theory of partial differential equations with emphasis on the fundamental features of elliptic equations, existence and uniqueness of solutions for various types of boundary conditions, discussion of representative examples of elliptic, parabolic hyperbolic equations, Sturm-Liouville Problems and Sine-Gordon equation.
MATH669 [Mathematical Programing]	In this course, we will provide advanced Mathematical software packages such as Matlab, Mable and Mathematica which are advanced and useful for mathematics and various fields of science.
MATH670 [Numerical Solution of Ordinary Differential Equations]	In this course, we will study some basic fundamentals of Numerical Solutions of Ordinary Differential Equations. Some important properties, theorems, problems, and applications will be also discussed.
MATH690 [Discussion]	In this course, we will discuss some basic fundamentals issues related to the research topics raised recently. In addition to benefiting from these discussions in preparing research plans and proposed ideas that are suitable for postgraduate students to develop research projects in the most complete and optimal manner.
MATH695 [Research Project]	The research project is used to assess the students independent thinking skills and ability to understand, write, and present formal mathematics, as well as to develop a sense of individual research and of mathematical creativity. The projects are evaluated according to depth of mathematical content, clarity of exposition, effort.

5. Admission of New Students

Based upon the recommendations of the Faculties' Councils and the other concerned bodies of the University, the University Council determines the number of new students to be admitted in the following academic year.

5.1 Conditions for Application for Admission to the Postgraduate Program

An applicant for admission to the program must satisfy the following conditions:

(A) General admission requirements:

1. The applicant must be of Saudi nationality or on an official scholarship for postgraduate studies if he is not a Saudi.
2. The applicant must have obtained a grade of very good or higher at the university level.
3. The applicant for the Master's degree must have a university degree with a general grade of not less than very good from a Saudi university or from any other recognized university.
4. The applicant must good conduct and medically fit.
5. The applicant must submit two academic recommendations from professors who previously taught him.
6. Obtaining the approval of his reference to study if the applicant is an employee.

(B) Special admission requirements:

1. A bachelor's degree in Mathematics.
2. The student who is holding bachelor of Education in Mathematics provided that he finish the complementary courses required by the department.
3. The student must bring evidence of passing one of the following tests:
   (i) Score 400 in TOEFL or in another equivalent English language proficiency test.
   (ii) Standardized test of English proficiency with score of 52%.
   (iii) Passing the second level in the English language held at the Deanship of Community Service and Continuing Education.

5.2 Mechanism for Applying for the Postgraduate Program

The applicant fills out the application form available on the Deanship's website and attaches the documents shown by downloading it, which are:

1. Fill out the application form.
2. A copy of the graduation document.
3. A copy of the academic transcript.
4. Original certificate of good conduct.
5. Two academic recommendations from those who previously taught it (original).

6. A copy of the ID card or family book for female students.
7. Any other documents requested by the department.
8. Other documents that the student deems useful in the comparison procedures and its management.

5.3 Admission Postponement

A student's admission may be postponed with the approval of the relevant department council and the deans of the faculty and graduate studies, provided that the period of postponement does not exceed two academic semesters and the period of postponement is not counted within the maximum period for obtaining the degree, in accordance with the following procedures:

1. The student wishing to postpone his final acceptance must fill out the form and submit it to the head of the department before the start of the academic year.
2. The form is submitted to the Dean of the Faculty for approval, then the Dean of Graduate Studies for approval and issuance of the postponement decision.
3. The postponement period shall not exceed two semesters, starting from the semester in which the student was obtained final admission.
4. If the period exceeds two semesters, the student's admission will be canceled and he may submit a new application in accordance with the admission conditions at the time of new admission.
5. The student has no right to postpone admission until obtaining the university number.

5.4 Procedures to Postpone Admission

1. Fill out a request form for deferring admission (available on the Deanship website), with mentioning the reasons and justifications.
2. The department's office studies the application and the results are as follows:
   a. Recommendation for approval from the department head, which includes the meeting number and date, completion of the form, signature from the department head, and then filing to the faculty dean.
   b. Recommendation to reject the application from the department head, including the meeting number and date, reasons for rejection, completion of the form, signature from the department head, and notification of the student and supervisor.
3. When the faculty dean accepts the application from the department committee, he studies the application and implements the recommendations, and the results are according to the following:
   a. Recommending approval and signing of the form from the Dean of the Faculty and submitting it to the Deanship of Graduate Studies.
   b. Recommendation to reject the application and have the form signed by the Dean of the faculty and returned to the department.
   c. A letter from the dean of the faculty that includes the student's application number and date for the department's office, not the student's basic information.

5.5 Postponing Study

With the approval of the relevant department council and the deans of the faculty and graduate studies, the student's study may be postponed according to the following:

1. The student must have passed one or more semesters or completed an appropriate amount of the dissertation.
2. The total period of postponement should not exceed four semesters (two academic years).
3. To submit a postponement, request no less than two weeks before the start of the semester.
4. The postponement period is considered within the maximum period for obtaining the degree.
5. Anyone who wishes to postpone study must fill out the form prepared for this purpose and submit it to the head of department no less than two weeks before the start of the semester to present it to the department council.
6. Postponement will not be considered effective unless approved by the Deans of the faculty and Graduate Studies.
7. The Deanship of Graduate Studies informs the employer if the student is employed.
8. The student who postpones is not considered a regular student.
9. After the postponement period ends or when it is interrupted, the student submits a request to a supervisor if the topic of his thesis has been approved before the postponement.

5.6 General Provisions Regarding Postponement

1. Supervision of the student officially stops in the event of postponement unless the supervisor agrees to continue supervision.
2. The previous supervisor may change and another supervisor may be appointed after the end of the postponement period.
3. Postponement shall not be approved except with the approval of the department, faculty, and graduate studies.
4. The postponement must be during the academic period and not after the end of the academic period.

5.7 Procedures to Postpone study

1. The student fills out a request form to postpone a study, stating the reasons and justifications, at least two weeks before the start of the semester, to present it to the department council.
2. The Department Council studies the application and the results are as follows:
   a. Recommending approval from the department council, including the meeting number, date, signature from the head of the department, and then submitting it to the faculty dean.

b. Recommendation to reject the application from the Department Council, including the session number and date, reasons for rejection, completion of filling out the form, signature from the department head, and informing the student and supervisor.

3. Postponement will not be considered effective unless approved by the Dean of the Faculty and Graduate Studies.
4. The Deanship of Graduate Studies informs the employer of the full- time student.
5. The student who postpones during the postponement period is not considered a regular student.
6. After the end of the postponement period or when it is interrupted, the student submits a request to nominate a supervisor if the topic of his thesis has been approved before the postponement.
7. Supervision of the student stops in the event of postponement unless the supervisor agrees to continue supervision.
8. The previous supervisor may change and another supervisor may be appointed after the end of the postponement period.
9. Postponement shall be subject to the approval of the department, faculty, and the Deanship of Graduate Studies.
10. The postponement must be during the academic period and not after the end of the academic period.

5.8 Cancel Enrollment

The student's enrollment is canceled by a decision of the Council of the Deanship of Graduate Studies in the following cases:

1. If he is accepted into postgraduate studies and does not graduate within the specified period.
2. If he does not pass the supplementary courses.
3. If he withdraws or stops studying for a semester without an acceptable excuse.
4. If it is proven that he is not serious about studying or has neglected any of his academic duties.
5. If his cumulative average falls below a grade of (very good) in two consecutive semesters.
6. If it exceeds the specified postponement opportunities.
7. If he violates academic integrity, whether during the stage of studying the courses or preparing the thesis, or commits an act that violates university regulations and traditions.
8. If he does not pass the comprehensive test, if any, after allowing him to repeat it once.
9. If the thesis judging committee decides that it is not suitable for discussion or that it is not accepted after discussion.
10. If he does not obtain the degree within the specified period.

11. Taking into account the cancellation of the registration of those who decide that the thesis is not fit for discussion or is not accepted after discussion.
12. The Council of the Deanship of Graduate Studies issues a decision to cancel the registration of students who meet the paragraphs of cancellation of registration at the end of each semester.

5.9 Re-enrollment

In case of necessity, a student whose enrollment has been canceled may be re-enrolled if force majeure circumstances prevent him from continuing his studies, provided that it is accepted by the Department and Faculty Council. Re-enrollment shall be based on the recommendation of the Council of the Deanship of Graduate Studies and a decision of the University Council, taking into account the following:

1. A student whose registration has been canceled for more than six semesters is treated like a new student.
2. The student whose enrollment has been canceled is six semesters or less. He re-studies some of the courses determined for him by the department and faculty councils and approved by the Council of the Deanship of Graduate Studies. The units he studied are counted within his cumulative average, and the period that the student spent studying before his enrolment was canceled is counted within the period for obtaining the degree. Class.
3. The student whose enrolment has been canceled shall submit a request to the head of the relevant department to re-register, attaching the decision to cancel the enrolment and drafts of the coercive circumstances he experienced.

6. Transfer

6.1 Transfer from another university to the University of Tabuk

A student may be accepted to transfer from another university to the University of Tabuk, based on the recommendation of the department and faculty councils, and the approval of the graduate studies council, taking into account the following:

- The student must satisfy all the conditions set by the department.
- The student must not be dismissed from the university from which he is transferred for any reason.

It is permissible to calculate the academic units previously studied according to the following:

- He must not have studied the equivalent units for more than six semesters.
- It must be consistent in subject matter with the requirements of the program to which it is transferred.
- The percentage of these units should not exceed 30% of the units of the program to which the transfer is made.

- His rating in equivalent units should not be less than “Very Good.”
- Equivalent units are not included in the calculation of the cumulative average.
- The equivalency shall be based on the recommendation of the department council to which the course follows, and the approval of the faculty councils and the deanship of graduate studies.

6.2 Transfer from one major within the university to another

A student may be transferred from one major to another - within the university - based on the recommendation of the councils of the department he is transferring to and the faculty, and the approval of the graduate studies Council, taking into account the following:

- The availability of admission conditions for the transferred student, and any other conditions that the department deems necessary.
- It is permissible to count the academic units previously studied at the university if the relevant department deems them identical to the program to which it wants to transfer, and is included in his cumulative average.
- The student must not have had his registration canceled for any of the reasons mentioned above.
- Transfer from one program to another once through the duration to obtain the degree.
- The transition must be submitted no less than a month before the start of the academic semester, the transfer procedures are as follows:
- A request for transfer from one specialty to another is submitted to the head of the relevant scientific department.
- A request for transfer from one department to another is submitted to the Dean of the faculty.
- A request for transfer from one faculty to another is submitted to the Deanship of Graduate Studies.
- A request for a transfer to the University of Tabuk, from another university within or outside the KSA, shall be submitted to the Deanship of graduate Studies, accompanied by an official transcript from the university where the student previously studied, showing his academic status, the courses he studied and their content, and the number of study units and the evaluation he obtained in each course.
- Anyone who registered for a master’s degree with or without a thesis, and was unable to obtain it, may transfer to a diploma in the same specialty (if any), after the recommendation of the Department and faculty councils, and the approval of the Deanship of Graduate Studies Council, in accordance with the rules set by each faculty separately.

6.3 Transfer from one program to another

The student has the right to transfer from the Master’s program with academic courses and thesis to the Master’s program with academic courses and a research project and on the

contrary, only once after passing (50%) of the credit hours for each program according to the following:

- Approval of the head of department and the deans of the faculty and graduate studies.
- Not more than six semesters of his regular term have passed.
- The transfer request must be made at least one month before the start of the semester.
- Preparing a study plan for the student with what is left to obtain the degree.

7. Study System

7.1 The Study System

Study in the Master of Mathematics Program is based on academic courses, in some specializations of a professional nature, provided that the number of study units is not less than forty-two units of postgraduate courses, including a research project, calculated as a minimum of three units. It should be taken into account that the master's study plan includes relevant postgraduate courses, avoiding other departments whenever possible.

The period prescribed for an attempt to obtain a master's degree is not less than four semesters of study and not more than eight semesters of study, and the final semesters are not counted within this period.

7.2 Academic Calendar for Postgraduate Studies

The Deanship of Graduate Studies sets a comprehensive academic calendar, subject registration dates, and other important dates on which the Deanship works. Graduate students are required to review this calendar and work according to it. This calendar is issued at the beginning of each academic year and distributed to graduate students, facultys, and departments at the university.

7.3 Supplementary Courses

The relevant department may stipulate that a student must be accepted into the master's or doctoral levels on passing a number of supplementary courses from the previous stage in a period not exceeding three semesters, taking into account the following:

1. Passing the supplementary course, the first time with a grade of no less than good.
2. His cumulative average in supplementary courses should not be less than very good.
3. Registration in the postgraduate study program is only completed after passing the supplementary courses. He may register in the postgraduate courses if he has only one or two of the supplementary courses remaining.
4. The time period for passing supplementary courses is not considered within the period specified for obtaining the degree.
5. Supplementary courses are not included in calculating the cumulative GPA for the postgraduate level.

6. It is not required to devote full time to studying supplementary courses, and the rights of the university student.
7. Anyone who is studying supplementary university level courses will be given a temporary university number through which his semester and cumulative average is calculated, and he has only one or two supplementary courses remaining according to the following:
    a. These courses do not constitute more than 25% of the supplementary course units.
    b. His average in the supplementary courses he has passed must not be less than very good.
    c. To be registered in the next academic year without interruption.
    d. Those who do not pass the supplementary courses due to compelling circumstances, accepted by the Council of the Deanship of Graduate Studies and recommended by the Department Council, may apply again for admission.

7.4 Attendance and Withdrawal from Study

A regular student must attend lectures and practical lessons. If he/she fails to attend at least 75% (as set by the University Council) of the lectures and practical lessons or the laboratory sessions for each course in an academic semester, he/she will be denied access to the final exam in that course because of his/her absence and he/she will fail the course. His/her grade will be denied (DN).

The student may drop all semester courses according to the following:

1. To submit a request for deletion before the final exam.
2. Approval of the Department Council and the Deans of the Faculty and Graduate Studies.
3. This semester should not be considered an additional opportunity.
4. This semester is counted within the postponement period.
5. Students who wish to drop courses must fill out the form and submit it to the head of department at least five weeks before the start of the final exams to present it to the department.
6. The Deanship of Graduate Studies informs the employer of the deletion if the student is full-time.
7. The student must not have exhausted the postponement period.

Students who miss the final examination will be given zero in the examination, and his/her grade will be calculated based on the attained grades in the semester work. If a student couldn't sit for the final examination in any of the courses during the semester due to a strong excuse, the Faculty Council may, in extreme may, accept his/her excuse and give the student a makeup exam during a period not exceeding the end of next semester. The student will then be given the grade he/she earns based on his/her performance in the makeup exam.

7.5 Graduation

1. A student graduates after successfully completing the graduation requirements.
2. The student shall not graduate unless he has completed the requirements for the academic degree and with a cumulative GPA of no less than (very good).
3. The general assessment upon the student's graduation is based on his cumulative average in all requirements for the academic degree (study courses, thesis, or research project).
4. The Deanship of Graduate Studies is responsible for calculating the student's semester and cumulative GPA.
5. Following the recommendation of the relevant department board, the Faculty Council may determine certain additional courses that the student should take to improve his/her cumulative GPA if he/she has passed the required courses, but with a low GPA.
6. The student graduates with a certificate bearing his general grade and cumulative average signed by the Dean of Graduate Studies and the University Director.

7.6 Examination System

Exams are conducted in postgraduate studies courses to obtain a master's degree and grades are monitored, in accordance with the study and exam regulations issued by the Higher Education Council in its second session held on 6/11/1416 AH, as follows:

1. The student is not considered successful in the course unless he obtains a grade of at least "good."
2. With regard to alternative tests and courses that require more than one semester to be studied, the Council of the Deanship of Graduate Studies takes what it deems appropriate based on the recommendation of the Department Council and the approval of the Faculty Council.
3. After completing all required courses, the master's student must pass a written, oral, and comprehensive examination held by a specialized committee in accordance with rules approved by the University Council based on the recommendation of the Department Council and the approval of the relevant Faculty Council and the Council of the Deanship of Graduate Studies. This examination shall be in the student's main specialization, and the student shall be considered as a candidate for the degree if he passes the test the first time. However, if he fails it or part of it, he is given one chance during two semesters. If he fails, his enrollment is canceled.

7.7 Final Examinations Procedures

1. The Faculty Council may set up a committee to coordinate with the departments in organizing the activities related to the final examination. The committee's role includes reviewing mark sheets and submitting them to the relevant committee within three days from the examination date of any course.
2. The Faculty Council applies strict confidentiality in the final examination procedures.

3. A course coordinator prepares examination questions. However, if the need arises, the Faculty Council may assign another instructor to do the exam based on the recommendation of the head of the department.
4. The instructor, who marks the final exam and records the marks obtained by students on the designated grades record sheets, signs his name on the record sheets and then the head of the department ratifies them.
5. No student is to be given more than two examinations in one day. The University Council may allow for exceptions to this rule.
6. No student will be allowed to sit for a final examination after the lapse of 30 minutes from the beginning of the examination. Also, no student will be allowed to leave the examination venue less than 30 minutes after the beginning of the examination.
7. Cheating, or attempting to cheat, or violating instructions and examination regulations, shall render the offender subject to punishment in accordance with the Student Disciplinary Rules set by the University Council.
8. If necessary, the relevant Faculty Council may agree to remark the examination papers within a period not exceeding the beginning of the next term examinations.

7.8 Remarking the Exam

1. The student may submit an official appeal for remarking to the head of the department offering the course of the relevant final exam. The head of the department will then forward the request to the Faculty Council.
2. The student, who has applied previously for a remarking and it has been proved that his/her appeal was false, is not allowed to apply for a remarking again.
3. The student is allowed to apply for no more than one-course examination paper remarking per semester.
4. A form is specially designed for this purpose in addition to the following information (student name and ID, course code and titles, group number, semester date, teacher's name, date of the test, remarking justifications, and the signature of the student,…).
5. In case of a positive reply, the Faculty Council will form a committee of at least three faculty members to review the exam papers and then the committee will report this to the Faculty Council for approval upon which the decision of the council is final.

7.9 Calculating Grades

The obtained grades in each course are calculated as follows:

Percentage	Grade	Grade Code	GPA (out of 5.00)	GPA (out of 4.00)
95 – 100	Exceptional	A+	5.00	4.00
90 – less than 95	Excellent	A	4.75	3.75
85 – less than 90	Superior	B+	4.50	3.50

80 – less than 85	Very Good	B	4.00	3.00
75 – less than 80	Above Average	C+	3.50	2.50
70 – less than 75	Good	C	3.00	2.00
65 – less than 70	High Pass	D+	2.50	1.50
60 – less than 65	Pass	D	2.00	1.00
Less than 60	Fail	F	1.00	0.00

Based on the Cumulative Grade Point Average achieved by a graduating student, his/her graduation rank is assigned to one of the following levels:

No	Level	GPA (out of 5.00)	GPA (out of 4.00)
1	Excellent	4.50 – 5.00	3.50 – 4.00
2	Very Good	3.75 – less than 4.50	2.75 – less than 3.50
3	Good	2.75 – less than 3.75	1.75 – less than 2.75
4	Pass	2.00 – less than 2.75	1.00 – less than 1.75

7.10 Degree Awarded

First honors will be granted to graduating students who achieve a cumulative GPA of (4.75) - (5.00) out of (5.00). Second honors will be granted to graduating students who achieve a cumulative GPA of (4.25) - less than (4.75) out of (5.00). The following are required to obtain first or second honors:

1. The student must not have failed any course he studied at the university or at another university.
2. The student must have completed the graduation requirements in a maximum period of four years.
3. The student must have studied at least 60% of the graduation requirements at the university from which he will graduate.

7.11 The Prescribed Period for Obtaining a Master's Degree in Mathematics

Article Thirty-Six of the Unified Regulations for Postgraduate Studies in Universities stipulates that the prescribed period for obtaining a master's degree is not less than four semesters, and not more than eight semesters. Classroom classes are not counted within this period.

7.12 Research Projects

Research projects are academic studies prepared in accordance with the regulations regulating them. It is the product of the research required to complete the stage if the study at the master's stage is based primarily on academic courses, including a research project to obtain the degree.

It is important to prepare it according to a scientific plan and an original curriculum, under the scientific supervision of specialists, and to demonstrate the student's ability to use research methods, organize information, and compile it in a correct language free of grammatical, spelling, and typographical errors.

8. Electronic Services

8.1 Electronic Gate

(https://myut.ut.edu.sa)

The unified platform for students to view the academic schedule, completed and remaining study plan materials, student academic status, student grades and grades, a range of academic movements that he can perform through the portal, including academic advising.

8.2 Department Website

(https://www.ut.edu.sa/ar/Faculties/science/Mathematics-department/Pages/default.aspx)

The site contains a number of guides and links that will help the students.

8.3 E-learning Platform – Blackboard

(https://tabuk.blackboard.com)

The platform through which the student studies the subjects presented in his study plan in the distance education system. In it, all the student's attendance materials are recorded as well, and therefore to provide an integrated and more efficient education, through which the student can submit assignments and costs, communicate with the course instructor and obtain the latest updates and announcements through the unified advertisement platform, as well as access to the content of the course that the faculty member shares, And get advice through office hours electronically.

An email is created for all university employees (students, employees, and faculty members) and it is the official means of communication in any affairs of the educational institution, through which alerts, instructions, activities, and events are published. The beneficiary needs to activate the email.

9. Appendix

Example of the Calculation of Semester and Cumulative GPA

First Semester:

Course	Credit Hours	%	Grade	Grade Weight	Points
MATHxx1	3	85	B+	4.5	13.5
MATHxx2	3	70	C	3	9
MATHxx3	3	92	A	4.75	14.25
MATHxx4	3	80	B	4	12
MATHxx5	3	76	C+	3.5	10.5
Total	**15**				**59.25**

$$\textbf{GPA for First Semester} = \frac{59.25}{15} = 3.95$$

Second Semester:

Course	Credit Hours	%	Grade	Grade Weight	points
MATHxx6	3	85	B+	4.5	13.5
MATHxx7	3	70	C	3	9
MATHxx8	3	92	A	4.75	14.25
MATHxx9	3	80	B	4	12
MATHxx10	1	76	C+	3.5	3.5
Total	**13**				**52.25**

$$\textbf{GPA for Second Semester} = \frac{52.25}{13} = 4.02$$

$$\textbf{GPA for the Year} = \frac{59.25+52.25}{15+13} = 3.98$$

10. Means of Communications

Communicate with the scientific department and the program through the following communication channels:

(A) Communicate with the head of the department

Department Email/Tel	*Dep_math@ut.edu.sa*	*014456292*
Head of Department	Dr. Ebrahem A. Algehyne	e.algehyne@ut.edu.sa

(B) Communicate with the Faculty Members

م	الإسم	الرتبة العلمية	التخصص الدقيق	الإيميل الرسمي
.1	د. عبد الحليم جميل عبيد	أستاذ دكتور	معادلات تفاضلية	aebaid@ut.edu.sa
.2	د. أنور منصور بنمبروك	أستاذ دكتور	التحليل الدالي	amabrouk@ut.edu.sa
.3	د. غلام محيي الدين علي	أستاذ دكتور	الجبر	gmuhiuddin@ut.edu.sa
.4	د. فايزان احمد خان	أستاذ دكتور	التحليل الدالي	fkhan@ut.edu.sa
.5	د. إبراهيم عطية الله الجهيني	أ. مشارك	الرياضيات التطبيقية	e.algehyne@ut.edu.sa
.6	د. إبراهيم السيد علي	أ. مشارك	بحوث العمليات الرياضية	e.ali@ut.edu.sa
.7	د. أحمد عبد المجيد خضر	أ. مشارك	التحليل العددي	akhidir@ut.edu.sa
.8	د. امير أحمد ناندلور	أ. مشارك	ميكانيكا الموائع	anaudalur@ut.edu.sa
.9	د. عبد الرحمن فالح الجهني	أ. مشارك	العلوم الرياضية	a.f.aljohani@ut.edu.sa
.10	د. عبد العزيز محمد العنزي	أ. مشارك	نظرية الأعداد	am.alenezi@ut.edu.sa
.11	د. محمد علاء الدين دلشاد	أ. مشارك	التحليل الدالي	mdilshad@ut.edu.sa
.12	د. عدنان عبد الواحد سبوعي	أ. مساعد	الجبر التجريدي	asboui@ut.edu.sa
.13	د. احمد محمد ال عامر	أ. مساعد	الرياضيات الحاسبة والمتقطعة	aalamer@ut.edu.sa
.14	د. إسماعيل محمد الشعبان	أ. مساعد	معادلات تفاضلية	ealshaban@ut.edu.sa
.15	د. حامد إسماعيل محمد	أ. مساعد	التحليل الدالي	hmohammed@ut.edu.sa
.16	د. صابر تاج السر وداعة الله	أ. مساعد	الرياضيات التطبيقية	s.hassan@ut.edu.sa
.17	د. عادل محمد العطوي	أ. مساعد	الرياضيات الحيوية	amalatawi@ut.edu.sa
.18	د. فهد مقبول العمراني	أ. مساعد	العلوم الرياضية	fm.alomrani@ut.edu.sa
.19	د. محمد أحمد محمد	أ. مساعد	الرياضيات التطبيقية	mabdallah@ut.edu.sa
.20	د. محمد أحمد توم	أ. مساعد	التحليل الدالي	mtom@ut.edu.sa
.21	د. محمد الشاذلي زيدان	أ. مساعد	الرياضيات التطبيقية	mabdelwahab@ut.edu.sa
.22	د. محمد النعيم النابر	أ. مساعد	الجبر التجريدي	melnair@ut.edu.sa
.23	د. محمد نيروزامان فاروق	أ. مساعد	الرياضيات البحتة	mfarooq@ut.edu.sa
.24	د. محمد هارون حسن	أ. مساعد	معادلات تفاضلية	m.salih@ut.edu.sa
.25	د. مساعد صبيح الضبعاني	أ. مساعد	معادلات تفاضلية	maldhabani@ut.edu.sa
.26	د. منتصر سعودي بركات	أ. مساعد	التحليل الدالي	mbarakat@ut.edu.sa
.27	أ. بسام زاكي البلوي	محاضر	التحليل العددي	b-albalawi@ut.edu.sa
.28	د. محمد ربيع العطوي	محاضر	الهندسة والتبولوجي	mr.alatwi@ut.edu.sa
.29	أ. سليمان علي العطوي	محاضر	التحليل العددي	assalatawi@ut.edu.sa
.30	أ. فيصل محمد الرويلي	محاضر	معادلات تفاضلية	faalrwile@ut.edu.sa
.31	أ. عبد الله سليمان العطوي	معيد	الجبر التجريدي	absalatawi@ut.edu.sa

م	الإسم	الرتبة العلمية	التخصص الدقيق	الإيميل الرسمي
.32	أ. علي عبد الله العطوي	معيد	الهندسة التفاضلية	a.alatawy@ut.edu.sa
.33	أ. ياسر احمد الزهراني	معيد	الرياضيات الحيوية	y.alzahrani@ut.edu.sa
.34	د. آمنه صبيان الجهني	أستاذ دكتور	الرياضيات التطبيقية	aalgohani@ut.edu.sa
.35	د. مريم سالم العطوي	أ. مشارك	الرياضيات البحتة	msoalatawi@ut.edu.sa
.36	د. مريم غرامه الشهري	أ. مشارك	التحليل الدالي	mgalshehri@ut.edu.sa
.37	د. عبير مشهور العتيبي	أ. مشارك	الرياضيات التطبيقية	abealotaibi@ut.edu.sa
.38	د. منى ضيف الله الجوفي	أ. مشارك	معادلات تفاضلية	maljufi@ut.edu.sa
.39	د. وئام غازي الحربي	أ. مشارك	التحليل العددي	wgalharbi@ut.edu.sa
.40	د. الهام مدني العلي	أ. مشارك	ديناميكا الموائع	eal-ali@ut.edu.sa
.41	د. مروة إبراهيم محمد	أ. مساعد	معادلات تفاضلية	mi.mohamed@ut.edu.sa
.42	د. هيفاء فرج الرحيلي	أ. مساعد	معادلات تفاضلية	halrehaili@ut.edu.sa
.43	د. منيره علي عريشي	أ. مساعد	التحليل العددي	m.areshi@ut.edu.sa
.44	د. نضال حسن الجنيد	أ. مساعد	التحليل الدالي	neljaneid@ut.edu.sa
.45	د. نوال عوده العطوي	أ. مساعد	التحليل العددي	n.oalatawi@ut.edu.sa
.46	د. نيفين حسين الطويل	أ. مساعد	التحليل الدالي	naltawil@ut.edu.sa
.47	د. منال الزين هلايلي	أ. مساعد	التحليل التوافقي	mhleili@ut.edu.sa
.48	أ. منى عيد الحويطي	محاضر	التحليل المركب	ma.alhowaiti@ut.edu.sa
.49	د. سناء حمود الشمري	محاضر	الهندسة التفاضلية	s.alshammeri@ut.edu.sa
.50	د. شروق بدر البلوي	محاضر	الرياضيات التطبيقية	shalbalawi@ut.edu.sa
.51	د. اعتدال مساعد المطيري	محاضر	الهندسة التفاضلية	ialmutari@ut.edu.sa
.52	أ. بدريه عبد الكريم صفرجي	محاضر	الهندسة التفاضلية	beesa@ut.edu.sa
.53	أ. فاطمة فريج العطوي	محاضر	معادلات تفاضلية	ffalatawi@ut.edu.sa
.54	أ. مدى وصل الله الطياري	محاضر	الذكاء الاصطناعي التطبيقي	maltiary@ut.edu.sa
.55	د. شريفه سليمان الموسي	معيد	الجبر	salmousa@ut.edu.sa
.56	أ. منى طماح العنزي	معيد	الجبر	mtalenazi@ut.edu.sa
.57	العنود متعب الجعيد	معيد	الرياضيات التطبيقية	aaljiaid@ut.edu.sa
.58	د. ربيعه سلمان الحويطي	معيد	الرياضيات الحاسبة والتطبيقية	ralhwety@ut.edu.sa
.59	أ. ايمان فهيد البلوي	معيد	الرياضيات البحتة	ealharfi@ut.edu.sa
.60	أ. منى يحيى الفيفي	معيد	الرياضيات والإحصاء	malfefi@ut.edu.sa
.61	د. مريم محمد العطوي	معيد	الرياضيات التطبيقية	mar.alatawi@ut.edu.sa
.62	أ. هدى جريف السلمي	معيد	الرياضيات التطبيقية	halselami@ut.edu.sa