Student Manual
For
Post Graduate Program

2023

Department of Mathematics
College of Sciences
Jazan University

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1. Program Governance and Management

1.1. Introduction

The Mathematics Degree programs at the College of Science, Jazan University were established in 2006 after the approval letter from the Ministry of Higher Education on 08-08-1426H (12-09-2005AD). It is continuously developing and improving in teaching and research in both of the programs. In 2018, the Master of Science in Mathematics started. Thus, the departments award, B.Sc. and M.Sc. degrees.

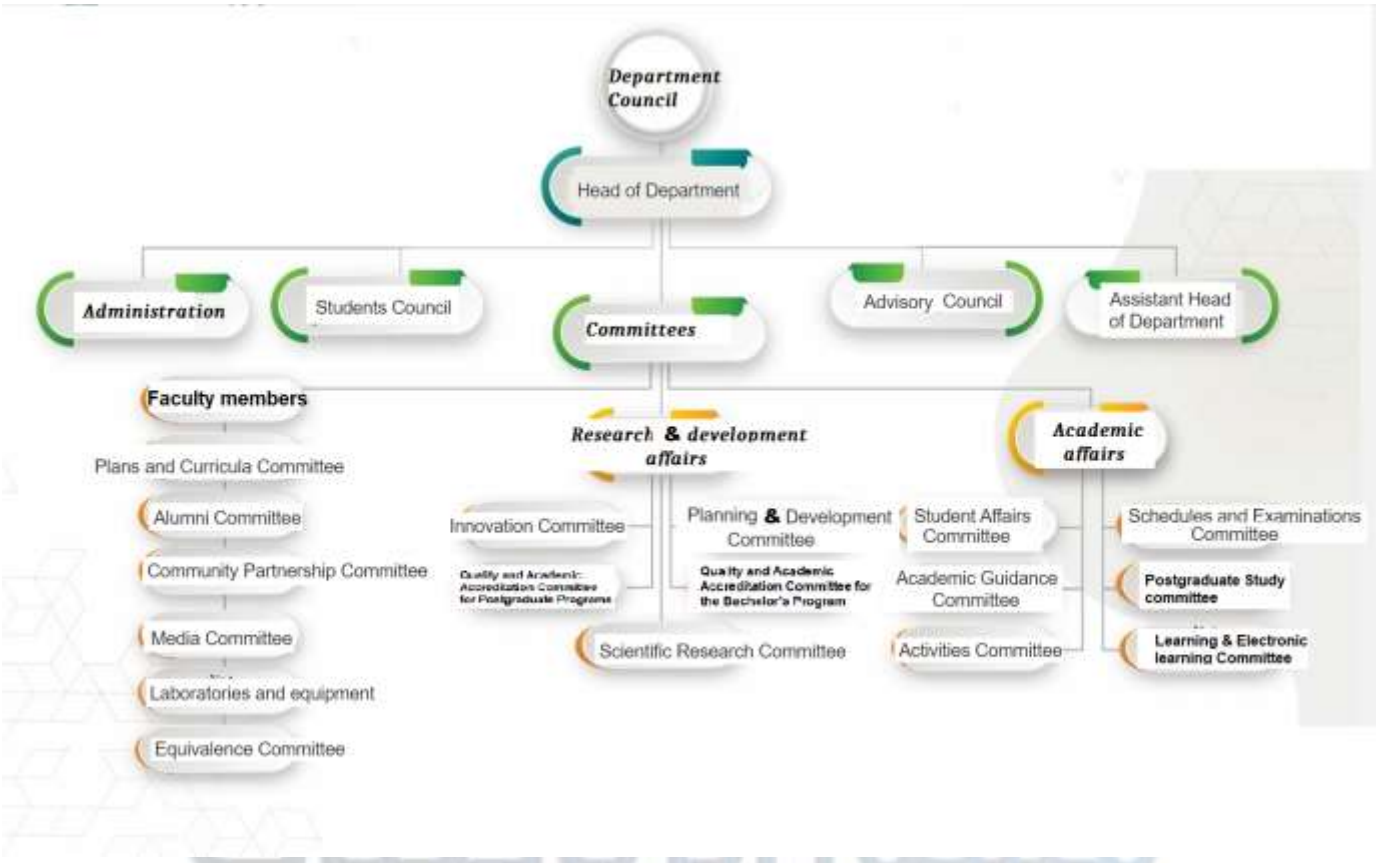
The Department of Mathematics takes the responsibility of Mathematics and courses required by other programs of the College of Science such as, Chemistry, Physics, Mathematics and Biology. The department also teaches Mathematics, and Statistics courses at the Computer Science, Medical Sciences, Engineering, Pharmacy, Medicine and Management Colleges. The entire Programs were established to prepare specialized qualified graduates in order to contribute and achieve the progress of the society of the Kingdom of Saudi Arabia in so numerous fields as general and higher education, health, agriculture and society employment.

The Department of Mathematics offers its students a distinct learning experience through coherent programs and benchmarked degrees. The self-study recommends investigating ways to support learning on Mathematics to equip students with the suitable knowledge, skills and values. More effort is being exerted on attracting research funds for students to promote their knowledge and skills in research.

Furthermore, the Department of Mathematics offer training services to students for the qualifying national exams through various training activities such as KIFAYAT training, Exit exam training and Mathematics Clubs (Calculus Cafe) etc., also the department provides tutorial sessions for their students.

In addition, the Mathematics program provides opportunities for its successful graduates to continue their higher studies and research programs in prestigious international universities under the supervision and with the collaboration of national and international faculty members. The educational objectives of the degree programs in Mathematics reflect the vision, mission, values, goals, educational objectives, learning outcomes with significant Consistency Alignment with those of the College of Science and the JU as a whole. The study plan and curriculum structure were built based on benchmarking and consistent with those similar program around the world.

1.2. Organizational Structure



1.3. Units and Committees

The program provides the best services to all stakeholders at all levels including students, faculty, administrative staff, program management and employers. Formulated numerous units and committees as per the national and international accreditation bodies and align with the Jazan University rules and regulation. The following are units and committees of the department of mathematics and clearly explain their roles and responsibilities.

Deanship Units

- General Courses Unit
- Health Program Unit
- Tables and Exams Unit
- Community Partnership Unit
- Labs and Equipment Unit

- E-Learning and IT Unit

Vice Deanship for Female Section Units
- Students Affairs Unit-Female Sec.
- Students Activities Unit- Female Sec.
- Academic Advising Unit-Female Sec.

Vice Deanship for Research and Development Units
- Research and Innovation Unit
- Teaching and Learning Unit
- Planning and Development Unit
- Statistic and Information Unit
- Quality and Academic Accreditation Unit

Vice-Deanship for Academic Affairs Units
- Students Affairs Unit
- Student Activities Unit
- Graduate Studies Units
- Academic Advising Unit

Department Committees:

1. Media and Public Relations Committee:
2. Student and Social Activities Committee:
3. Timetable
4. Alumni and Community Service Committee:
5. Exams Committee:
6. Academic Advising Committee
7. Quality and Academic Accreditation
8. Postgraduate Studies Committee
9. Education and E-Learning Resources Committee
10. Scientific Activities and Seminar Committee
11. HR Committee
12. Plans Curriculum Committee
13. Training and Workshop Committee
14. Statistics and Information Committee
15. Specification and Reports Committee

1.4. Quality Management System (QMS)

A quality management system is defined as a formalized system that documents processes, procedures and responsibilities for achieving quality policies and objectives.

A master's degree is a prestigious document awarded by universities to students who finish a certain level of advanced coursework in a specific field of study, there by demonstrating a high level of knowledge and original thinking on their chosen subject. The program prepares highly qualified managers and leaders who have exhaustive knowledge and skills of quality management, would know and apply quality management principles and methods in various fields of activity, would be able to recognize and analyze quality-related problems, search for ways to solve them and implement sound solutions of quality improvement in the dynamic environment.

2. Program Description

2.1. Program Learning Outcomes (PLOs)

Program learning outcomes are specific statements that describe the knowledge; skills and competencies the students should have or be able to demonstrate upon the successful completion of the degree requirements. Program outcomes are statements conveying the intent of a program of study. Specifically, program outcomes refer to what a student should know or be able to do at the end of a program. They are often seen as the

knowledge & understanding, skills and values, autonomy and responsibility students will have obtained by the time they have received their intended degree.

Mathematics program learning outcomes (PLOs) are designed according to the National Qualification Framework (NQF) which provides three learning domains;

- Knowledge & Understanding,
- Skills
- Values, Autonomy and Responsibility

Knowledge & Understanding: Upon completion of the program, students are able to:

Knowledge and Understanding	
K1	Demonstrate in-depth knowledge of Mathematics, both in theories and applications.
K2	Describe appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real-life contexts as an application.
K3	Integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information.

Skills: Upon completion of the program, students are able to:

Skills	
S1	Discover and apply the most appropriate mathematical and/or statistical techniques.
S2	Communicate knowledge of key mathematical and statistical concepts, both explicitly and by applying them to the solution of Mathematical problems.
S3	Analyze complex problems in Mathematics and propose solutions using research based knowledge.
S4	Conduct scientific research on certain fields of Mathematics.

Values, Autonomy and Responsibility: Upon completion of the program, Students are able to:

Values, Autonomy and Responsibility	
V1	Demonstrate leadership qualities with sense of Commitment and accountability.
V2	Inculcate values and ethics in thoughts, expression and deeds.
V3	Show responsibility for personal outputs, intellectual independence.
V4	Promote Mathematics in scientific development as well as in the general education of the society.

2.2. Curriculum Structure

The mathematics program's course specification provides descriptive details about the curriculum with an emphasis on the learning outcomes expected of students. Additionally, it demonstrates various teaching strategies and techniques for student evaluation in order to develop learning outcomes in various National Qualification Framework (NQF) domains of learning. For more details please click on the link below.

For master's degree program the curriculum structure is as follow:

Program Structure		No. of Courses	Credit Hours	Percentage
Course	Required	**6**	**18**	**50%**
	Elective	**4**	**12**	**33%**
Graduation Project (if any)				
Thesis (if any)		**1**	**6**	**17%**
Field Experience(if any)				
Others (.....)				
Total		**11**	**36**	**100%**

The degree requires satisfactory completion of at least 33 credit hours and not more than 42 credit hours of 600 level courses including the original research done under the supervision of a faculty member. Every student registered for MSc degree in mathematics shall have to follow the following plan of studies:

1. **University Compulsory Courses:**
   12 credit hours, Student should choose from the following courses with the consultation of the academic advisor: MATH 601, MATH 602, MATH 603, MATH 604, MATH 605, MATH 606, and MATH 699.

2. **Selected Courses**
   12 credit hours courses may be selected in consultation with the supervisor and with the approval of the department from the list of courses for MSc in Mathematics.

3. **Thesis Courses:**
   Every student is required to earn at least 6 credit hours through a thesis written on a topic approved by the department with the consultation of the supervisor.

2.3. Study Plan

The Mathematics program has a demanding curriculum that students must cope with challenging workloads as part of their education. In Jazan University, the postgraduate Mathematics program has 36 credit hours and is designed to provide high-quality Mathematics education to produce scientific research cadre to enrich advanced mathematical sciences and allied applications to serve the vibrant society in view of KSA vision-2030. It corresponds to the specific learning outcomes for the Mathematics program outlined in the NCAAA Guidelines for Program Development and Review. The program also matches and in alignment with the vision and mission of the College of science and Jazan University.

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours
Level 1	MATH 601	Abstract Algebra-1	Required		3
	MATH 602	Real Analysis-1	Required		3
Level 2	MATH 603	Complex Analysis	Required		3
	MATH 604	Numerical Analysis	Required		3
Level 3	MATH 605	Theory of Differential Equation	Required		3
	MATH 606	Mathematical Statistics-1	Required		3
Level 4		Elective Course	Elective		3
		Elective Course	Elective		3
Level 5		Elective Course	Elective		3
		Elective Course	Elective		3
Level 6	Math699	Thesis	Required		6

First Year Study Program:

Level 1									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1	Math 601	Abstract Algebra 1	3	0	0	3	0	0	323Math
2	Math 602	Real Analysis 1	3	0	0	3	0	0	315 Math
Total			6	·	0	6	0	0	
			6			6			

Level 2									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1	Math 603	Complex Analysis 1	3	0	0	3	0	0	314Math
2	Math 604	Numerical Analysis	3	0	0	3	0	0	419Math
Total			6	0	0	6	0	0	
			6			6			

Level 3									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1	Math 605	Theory of Differential Equations	3	0	0	3	0	0	332 Math
2	Math 606	Mathematical Statistics 1	3	0	0	3	0	0	Math352&Math453
Total			6	0	0	6	0	0	
			6			6			

Second Year Study Program:

Level 4									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1		Elective Course	3	0	0	3	0	0	———
2		Elective Course	3	0	0	3	0	0	———
Total			6	0	0	6	0	0	
			6			6			

Level 5									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1		Elective Course	3	0	0	3	0	0	------
2		Elective Course	3	0	0	3	0	0	------
Total			6	0	0	6	0	0	

Level 6									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1	Math 699	M.Sc. Thesis	6	0	0	6	0	0	------
Total			6	0	0	6	0	0	
			6			6			

Compulsory Courses for all Tracks

General compulsory courses for all tracks									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1	Math 601	Abstract Algebra 1	3	0	0	3	0	0	323Math
2	Math 602	Real Analysis 1	3	0	0	3	0	0	315 Math
3	Math 603	Complex Analysis 1	3	0	0	3	0	0	314Math
4	Math 604	Numerical Analysis	3	0	0	3	0	0	419Math
5	Math 605	Theory of Differential Equations	3	0	0	3	0	0	332 Math
6	Math 606	Mathematical Statistics 1	3	0	0	3	0	0	Math352&Math453

Elective Courses in Pure Mathematics Track

Elective Courses in Pure Mathematics Track									
1	Math 620	Abstract Algebra 2	3	0	0	3	0	0	Math 601
2	Math 622	Topics in Algebra	3	0	0	3	0	0	Math 601
3	Math 630	Real Analysis 2	3	0	0	3	0	0	Math 602
4	Math 631	Topology	3	0	0	3	0	0	Math 602
5	Math 632	Functional Analysis	3	0	0	3	0	0	Math 602
6	Math 633	Topics in Real Analysis	3	0	0	3	0	0	Math 602

Elective Courses in Applied Mathematics Track

Elective Courses in Applied Mathematics Track									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1	Math 640	Numerical Methods for Ordinary DE's	3	0	0	3	0	0	Math 604
2	Math 642	Approximation Theory	3	0	0	3	0	0	Math 604
3	Math 643	Optimization	3	0	0	3	0	0	Math 604
4	Math 650	Integral Differential Equations	3	0	0	3	0	0	Math 605
5	Math 651	Mathematical Modeling	3	0	0	3	0	0	Math 605
6	Math 696	Elective Topics	3	0	0	3	0	0	Math 604

Elective Courses in Statistics Track

Elective Courses in Statistics Track									
1	Math 607	Probability Theory(1)	3	0	0	3	0	0	Math 606
2	Math 660	Mathematical Statistics (2)	3	0	0	3	0	0	Math 606
3	Math 661	Regression and Experimental Design	3	0	0	3	0	0	Math 606
4	Math 662	Times Series Analysis	3	0	0	3	0	0	Math 606
5	Math 663	Topics in Mathematical Statistics	3	0	0	3	0	0	Math 606
6	Math 672	Stochastic Processes	3	0	0	3	0	0	Math 606

M.Sc. Mathematics Thesis

M.Sc. Thesis									
No.	Course Number	Course Name	Credit Hours			Contact Hours			Prerequisite
			Lecture	Exercise	Practical	Lecture	Exercise	Practical	
1	Math 699	M.Sc. Thesis	6	0	0	6	0	0	======

2.4. Teaching and Learning Strategies

Mathematics program learning outcomes (PLOs) are designed according to the National Qualification Framework (NQF) provides three learning domains; Knowledge and Understanding, Skills and Values (SAQF-2020).

Code	Program Learning Outcomes	Teaching strategies
Knowledge and understanding		
K1	Demonstrate in-depth knowledge of Mathematics, both in theories and applications.	Lectures, Tutorials, Seminars, Direct Reading, Discussion
K2	Describe appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real-life contexts as an application.	
K3	Integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information.	
Skills		
S1	Discover and apply the most appropriate mathematical and/or statistical techniques.	Lectures, Tutorials, Seminars, Direct Reading, Discussion
S2	Communicate knowledge of key mathematical and statistical concepts, both explicitly and by applying them to the solution of Mathematical problems.	
S3	Analyze complex problems in Mathematics and propose solutions using research based knowledge.	
S4	Conduct scientific research on certain fields of Mathematics.	
Values		
V1	Demonstrate leadership qualities with sense of Commitment and accountability.	Dissertation and its oral defense, Activities, group works,
V2	Inculcate values and ethics in thoughts, expression and deeds.	
V3	Show responsibility for personal outputs, intellectual independence.	
V4	Promote Mathematics in scientific development as well as in the general education of the society.	

2.5. Assessment Methods

The tools used will be direct and indirect methods of measurements;

Direct measures:

A set of common rubrics will be used for both grading and assessment at the program level. In some cases, student overall grades in courses may be used through impeded questions in Quiz, Midterm exam or Final Exam. The intent by using rubrics to help students understand departmental expectation, to gauge student progress over time, and to provide a basis for faculty discussions concerning possible areas for program improvement. In most cases these rubric lines will be incorporated into a course specific rubric that contains additional elements specific to the course learning outcomes and expectations. The student grades are reflection of their learning outcomes.

Indirect Measures

- On a periodic basis the department will solicit feedback on graduate skills from alumni and their employers using either surveys or focus groups. These mechanisms may allow the department to reevaluate the target student outcomes to match changing needs in the Mathematics community. The department expects that all numerical responses on this survey will be a 3 or higher and that written responses will be generally positive, yet constructive in improving department programs.
- The department will ask for feedback from graduating students using surveys or focus groups to evaluate their perception of whether the degree has adequately prepared them for their chosen career. This may include job placement and graduate/professional school admission rates. The department expects that all numerical responses on this survey will be a 3 or higher and that written responses will be generally positive, yet constructive in improving department programs.
- The department will periodically hold a focus group with existing Mathematics majors and Mathematics club members. This will provide an opportunity to identify emerging problems quickly before they show up in tracked data. The department expects that student responses will be generally positive, yet constructive in improving department programs.
- The department will periodically collect feedback from faculty and instructors on their perceptions of student strengths and weaknesses.
- The department will periodically collect feedback from the graduates at the end of their graduation semester on learning resources, research facilities and faculty supervisions through **an Additional Supervision survey** to meet the requirements for KPIs no. 4, 13 & 14.

2.6. Program Evaluation

2.6.1. Annual Program Evaluation

The department of Mathematics believes that proper designing, implementing and continuous assessment and improvement of all of its departments and activities can guarantee high quality output. For this reason, it has recommended general guidelines and procedures in the form of quality practices in order to ensure that good practices of all sections follow the requirements of NCAAA quality expectations. The quality committee, consisting of faculty members of the college is responsible for overseeing the development of quality procedures and processes to ensure quality provision, and for their implementation across academic, research and administrative areas of college, departments and programs. It is also providing academic guidance for quality education by improving teaching & learning strategies, program planning, self-review, and continuous improvement. The committee is enforcing quality standards in the faculty, regulated by Deanship of Academic Development (DAD) for gaining accreditation of NCAAA.

The department of Mathematics is following regulatory framework of procedures and policies in the form Quality Management System (QMS), which guide all members of the college in achieving its aim of providing high quality academic processes and securing the program in compliance with the prevailing procedures and regulations. This will equip the program to achieve academic standards recognized both nationally and internationally. The QMS is a dynamic process for ensuring academic standards and quality improvements and the annual updating of the manual reflects the careful consideration that will be applied by the academic community of the college. To achieve the aim of fully embracing the QMS framework, it is important that all members of College of Science take full responsibility for ensuring that they fully align their actions and promote the guiding principles for academic standards and quality as set out in the QMS.

The annual program evaluation is done through the following sections:

- Evaluation of Courses
- Evaluation of Scientific Supervision
- Students Evaluation of Program Quality
- Other Evaluations of Program Quality
- Key Performance Indicators (KPIs)
- Analysis of Program Evaluation

2.6.2. Periodic Program Evaluation

Periodic program evaluation is conducted at Faculty level and forms part of the Quality Monitoring and Enhancement (QME) Framework at Jazan University. It evaluates the operation and performance of a Faculty's entire PG degree provision, and is conducted every five years in accordance with a schedule determined by PG QME Subcommittee. However, PG program may be subject to more frequent review if significant concerns have been identified and/or where there has been significant change to the structure and delivery of its provision.
The scope of periodic evaluation includes:

- The student lifecycle from recruitment and admission through progression review, examination and award;
- The student experience;
- The research environment and culture, and the resources available to support students and supervisors;
- Training and development for students and supervisors.

2.6.3. Role of Student in Program Evaluation

Evaluation is being used to measure student/department/college progress, reform education systems, and enhance accountability for outcomes. College administrators and teachers alike are conducting evaluations of their own to improve college performance and foster creative spaces for learning.

Program Evaluation survey is filled in by the graduates at the end of their graduation semester. The graduate survey contains questions that directly target every one of the Program Learning Outcomes.

The roles of students in Program Evaluation are-

- Understanding values, expectations and culture.
- Listening carefully to teachers and parents.
- Developing positive attitudes
- Being cooperative and considerate.
- Participate in all Program Evaluation Surveys
- Students add to ideas, ask questions, and give examples to make the discussion deeper, longer, and more interesting.
- Demonstrate academic integrity and honesty.
- Attend and participate in classes, labs, and seminars, prepared and on time.
- Complete the assigned work in a timely manner with attention to quality of work.

- Avoid making excuses for their actions.
- Communicate in a careful and respectful manner with professors, peers, and other members of the college community.
- Respect diverse ideas and opinions.
- Identify, develop, and implement a plan to achieve their academic goals.

2.6.4. Program Surveys

In order to measure the program KPIs, the analysis of the following instruments, scales and documents through various program surveys are used-

- Course Evaluation Survey (CES).
- Program Evaluation Survey (PES).
- Student Experience Survey (SES).
- Evaluating the academic program by Faculty members' survey.
- Evaluating Faculty members for learning resources available to the program.
- The program's vision, mission and objectives (Faculty members).
- The program's vision, mission and objectives (Students).
- Measuring satisfaction teaching facilities and equipment for staff members
- Measuring student satisfaction for facilities and equipment
- The extent of job satisfaction for employees
- Student opinions about registration and Academic Advising services

❖ Collecting quantitative data and statistics related to key performance indicators are obtained through the Deanship of E-learning and distance education, Deanship of Admissions and Registration and Deanship of Academic Affairs and Quality Assurances

3. Student Support

3.1. Academic Counseling

Academic advising & counseling service is an assistant educational system, where the faculty members introduce the students to the university and college systems and inform them by their roles, responsibilities and rights Appendix JU08. Academic advising & counseling service provides guidance and support for students to overcome any academic problems or personal difficulties that may hamper student's academic

progress, as well as develops the students' capacities and potentials, that enhances their academic performance. Academic advising and counseling services are basic steps that guarantee a collaborative relationship between faculty members and students. The intent of this collaboration is to facilitate learning by providing opportunities for students to achieve their goals and uphold the academic standards of the college. Each student at the Department of Mathematics is assigned a faculty advisor at the time of his initial enrolment. The faculty advisor is available to solve any problem that might arise during the student program. The University considers student advising by faculty as an important teaching-related activity. The faculty advisor is expected to advise students in planning their academic programs during early registration, and throughout their academic year. The faculty advisor has the following main roles (**Appendix MATH2.2**):

- Assign Teaching staff member as academic advisor to a group of students
- Announce reminder about the meeting between advisor and the student
- Monitor student attendance record.
- The academic advisor helps his students examine the course offerings in their major and understand their graduation requirements.
- The academic advisor helps the student explore the career fields within his/her major, and obtain related career information and survey job opportunities.
- The academic advisor serves as a link between the student and the administration by counseling the student on matters of failure, on the procedures for dropping and adding courses, course scheduling, and academic progress.
- The academic advisor must alarm students of the exclusion procedure well in advance and of any subsequent changes that might be enforced during the course of their studies.

In the department of Mathematics and the College of Science there are academic guidance units which aim to:

- Provide accurate and up-to-date information.
- Clarify the requirements, policies and procedures of the Programs being offered.
- Approve students' Programs of study and assist them in identifying appropriate resources.
- Facilitate relationships between the student and others within the University who may also be able to provide relevant assistance.
- Advise on and help in realizing educational and career options.
- Uphold the standards of the University.

3.2. Student Support

The Vice Dean of academic affairs in the College of Science facilitates the academic development of students. This is performed through various ways such as promoting the students and giving them opportunities for pursuing their interests and developing/refining their talents in the field of extracurricular activities. It

provides facilities for games, sports and organizes competitions and tournaments in different types of indoor and outdoor sports and games. The Board provides coaching and training facilities to students in several types of sports and games.

The Deanship of Admission & Registration offers non-academic services which in turn make the learning and education processes more enjoyable. Some of these services are as follows Issuing Student IDs

- Housing
- Students Fund
- Catering Service
- Scholarships

4. Student Affairs

4.1. Registration Criteria

Student Admission and Transfer Requirements, and Courses Equivalency

- University Council shall determine the number of students admitted each year to graduate studies programs based on the recommendation of the Council of the Deanship of Graduate Studies, and the proposal of the concerned departments and colleges.
- For admission to Graduate Studies, the applicant must fulfill the following requirements:
    1. To be of Saudi nationality or has an official scholarship if the applicant is non-Saudi.
    2. To have a university degree from a Saudi university or another equivalent accredited university.
    3. To be medically and morally eligible.
    4. To submit two recommendation letters from staff members who taught him/her.
    5. To obtain a written undertaking of approval from employer, if the applicant is an employee.
    6. To study full time if the applicant is a doctorate candidate and the University Council may waive this requirement if necessary.
    7. B.Sc. Grade (3.75 or higher)
    8. English language proficiency (TOEFL 400)
    9. Interview (Pass)

- For admission to Graduate Studies program for a Master's Degree, the final grade of the applicant in the university must be ‹Very Good› or better, but the Council of the Deanship of Graduate Studies may also accept applicants with grade ‹Above Average›. The Council of the Deanship of Graduate Studies, based on the Department Council recommendation and College Council

approval, may accept applicants with grade ‹Good› in some programs specified by the University Council, provided that the applicant's average grade in the Bachelor's majoring courses is ‹Very Good› or better. The Council of the Deanship of Graduate Studies, based on the Department Council recommendation and College Council approval may add other requirements deemed necessary for admission».

- A student may be admitted to a Master's program in a field different from her/his major based on the concerned Department and College Councils recommendation, and the approval of the Council of the Deanship of Graduate Studies.
- For admission to the Master's program, the concerned department may specify that the applicant must undertake a number of complementary courses from an earlier stage, in a period not more than three semesters, taking into consideration the following:

  1. The complementary course must be first of a grade of 'Good' or better.
  2. The cumulative GPA in the complementary courses must be 'Very Good' or better.
  3. Passing the complementary courses before registering in the graduate studies program. The department may allow registration in graduate studies only if one or two complementary courses remain to be studied.
  4. The time period of the complementary courses is not included in the period specified for obtaining the degree.
  5. The complementary courses are not included in the calculation of the cumulative GPA of graduate studies.

- Deanship of Graduate Studies shall be responsible for the applicants' admission and registration in coordination with the Deanship of Admission and Registration.
- The student must not enroll in two graduate studies programs simultaneously.

4.2. Graduation Criteria

Graduation Requirements to be fulfilled

A Student graduates after successful completion of graduation requirements according to the study plan. However, the cumulative GPA should not be less than - Acceptable. The College council on the recommendation from the concerned department council hasthe right to determine the appropriate courses to be studied by the students to raise the cumulative GPA; this is in case the student succeeds the courses and fails in achieving the required GPA.

Administrative Rules of Jazan University:

1. The Student graduates after successful completion of graduation requirements according to the approved study plan provided that the cumulative GPA should not be less than (2.00) out of (5.00) with grade – Acceptable. The College council or its authorized representative determines upon a recommendation from the concerned department council, the appropriate courses to be studied by thestudent to raise the cumulative GPA and this is in event that the student succeedsin passing the courses but fails in achieving the required GPA.
2. The Student is not considered graduated unless the University council issues its approval of awarding him/her the University degree.

Graduation Periods:

1. Students who were awarded grade incomplete (L) or those who are allowed to take substitute exam in one or more courses in the final level of graduation program, or the like, an individual graduation note shall be submitted for them assoon as they complete the requirements and the final semester, the graduation semester is considered as the last study semester in student's record.
2. The students whose study plans require the completion of practical training courses, their names shall be submitted to the university council to ask for the approval of awarding them the degree upon the completion of the required courseat the end of the semester, provided that the following phrase shall be written in his/her record (work is underway to complete practical training requirements).

Issuing a replacement certificate for the lost graduation certificate according to thefollowing:

1. Student should announce the loss of the graduation certificate in the university newspaper or in one of the local newspaper and apply to issue a replacement for the lost certificate after a month of the announcement; a copy of the announcement should be attached with the application.
2. Stamp of a replacement document on each document or certificate issued as a replacement document for the lost one.

4.3. Financial Support

The financial aspects of programs in the Department of Mathematics are funded by the central budgetary division of the JU, based on the executive rules and regulations for the universities in Saudi Arabia, set by the Ministry of Finance. Budget for the colleges in the university is controlled and managed by the office of the Vice president and provides sufficient financial resources for the successful management of the programs. The

budget is allocated by the university based on the budgetary proposal submitted by the college far in advance to get approval in the institutional budgeting process. The expenditure of approved budget is then monitored by the Directorate of the office of financial controller.

Financial planning and budgeting is a centralized function at the JU and is controlled and coordinated by the Central Budgeting Department of the University. The budgeting process of the program is initiated with a letter from the President seeking budget proposals of the college for the upcoming financial year. The central budgeting department of the university requests the college or respective department to submit its requirements before finalization of the budget.

The university also circulates within the different units with the statement of information required for preparing budget proposals under different headings (Statement of Information). As and when the intimation arrives, the Dean communicates with the respective heads of departments to prepare their requirements and budget estimates for the department.

After receiving the financial requirements from the departments, the Dean finalizes the budget proposal for the forthcoming year. Before sending the budget proposal to the central budgeting department of the university through the President, the proposal gets verified and approved by the faculty board of college. When the budget for the university is finalized the Director of Budget and Planning informs the Dean of the approved budget for the college and respective departments.

The Deanship of Admission & Registration offers non-academic services to students such as Issuing Student IDs, Hostel Accommodation, Students Fund, Catering Service, Scholarships etc. which in turn make the learning and education processes more enjoyable.

4.4. Student Activities

Student Rights

According to rules and regulations, the student is entitled to:

1. Amicable learning environment and quality education in view of Jazan University vision 2020.
2. University ID card to use on and outside campus.
3. Graduation Certificate.
4. Care, safety, social security, and health care.
5. Use of facilities and services including accommodation, library, activities center, restaurants, and

parking.

6. Security and privacy of information and academic record.
7. Access to academic and administrative departments.
8. Free thinking within Islamic teachings and traditions.
9. Academic counseling with professional academic adviser.
10. Information of study plans, curricula, and time tables.
11. Easy access to course registration and learning resources.
12. Clear exam regulations, time tables, and model answers.
13. Access to all student facilities, events, and activities.
14. Promptness of teaching staff in class and office hours.
15. Special need student facilities and care.
16. Membership of student committees.
17. Access to incentives and rewards.
18. Notification of substandard academic performance.
19. Justice with disciplinary committee actions.
20. Right to defend in disciplinary hearings.

Student Duties

1. Comply with University rules and regulations.
2. Avoid misconduct on and off the campus.
3. Attendance of lectures and activities.
4. Show student ID card upon demand.
5. Adhere to proper traditional uniform on campus.
6. Avoid cheating and plagiarism.
7. Protect University property, equipment, and facilities.
8. Proper use of University computing and internet.
9. Abstain from unauthorized activities and associations.

10. Refrain from issuing unauthorized leaflets and brochures.
11. Refrain from unauthorized fund raising.
12. Kind treatment of faculty, staff, and employees.
13. Keep and maintain official email address.
14. Follow up University announcement and information.
15. Sincerity in pursuing learning activities.
16. Keep time frame for academic services.
17. Bring no dangerous material and weapons on campus.

4.5. Recreational Activities

Institute recreation programs have an impact on various health and wellness outcomes. Recreation, sports and/or fitness activities are important to students prior to enrollment at a college/university and also after graduating from a college/university. Additionally, maintaining a healthy lifestyle is important to students both prior to their enrollment and also after they leave college/university. Participating in recreation activities and programs expands interest in staying fit and healthy.

The top health and wellness benefits students attributed to their participation in Institute recreation facilities and programs:

1. Feeling of wellbeing
2. Overall health
3. Fitness level
4. Physical strength
5. Stress management
6. Athletic ability
7. Weight control
8. Self-confidence
9. Balance/coordination
10. Concentration

Institute Recreational Sport Activity

- Cardio-vascular training (e.g., treadmill, elliptical, stationary bike)
- Open recreation (e.g., pick-up basketball, volleyball, soccer)
- Weight training/lifting free weights
- Instructor-led group fitness or exercise classes
- Sport clubs
- Intramural sports
- Classes (e.g., safety, non-credit, for credit)
- Outdoor adventure activities and/or trips
- Personal training
- Wellness programs (e.g., wellness classes, wellness expo)
- Racquet sports
- Fitness assessments or testing

5. Alumni Affairs

An Institute's Alumni are the reflection of its past, representation of its present and a link to its future. An Alumni Committee was set up and charged with establishing social media relations with alumni. The Alumni committee approached alumni during an alumni conference, and social media; twitter, Facebook, and Instagram. The Alumni and community Service committee is one of important committee established at mathematics department to look after our graduates/alumni. This committee keen on continuous communication with alumni and seeks to help and support all mathematics graduates to emphasize their effectiveness as ambassadors, employees, and volunteers, through a long-term relationship, and to enhance the spirit of communication by supporting relations between the university and its alumni.

The department/program has a few steps to contact the students who graduated from the department through social media and also through their addresses and mobiles. Also the alumni of the program are participation on some activities announced by the university especially alumni forum announcements which organized by the university.

The unit is helping graduates find a suitable job, and to guide them in their career paths to ensure a long-term relationship with the university, in addition to its endeavor to hold interviews with graduates and train them in

special skills while applying for jobs, this includes preparing CVs and gaining experience. An annual plan for graduates is also prepared that contains a number of workshops and training courses that help develop the skills of graduates to success in their career path.

The Alumni Committee also writes an annual report about the graduates, including their databases, information about their careers, and all other available statistical data. A survey conduct once in a year to assess the satisfaction of the graduates on the quality of information and awareness they received about the work environment and lifelong learning, the quality of the knowledge and skills they gained from their education, their relationship with staffs and professors especially the guidance they have got in choosing their career and the facility made avail to them during their education.

Also a survey conduct every year to assess the satisfaction of the employer with the graduate of mathematics program on quality of their general knowledge and habits of work related know how, discipline and professionalism, conceptual and communication skills, and also on personal and employment related competencies.

The university has very good relationship with all its alumni. The graduate unit is one of the units affiliated to the university agency for academic affairs. It was established for the need of the university to activate programs of vocational guidance and relations of graduates at the college level in order to benefit the graduates and the community afterwards and activate university partnership with the economic and social environment. The program's student and alumni have additional activities for their development professionally; in line with the targeted learning outcomes and developments Labor market.

6. Thesis

The Department of Mathematics in Jazan University (JU) offers a number of graduate programs leading to the degrees of Master. M.Sc. in Mathematics is designed for applicants holding a bachelor degree with a major study in Mathematics, to undertake further studies in mathematics as preparation for a postgraduate research degree. This program is designed to expand and consolidate existing mathematics knowledge and to develop skills in undertaking research projects in mathematics. It is also suitable for mathematics graduate students who have worked for a few years and need to improve their skills and knowledge. The Master of Mathematics offers a substantial opportunity for independent study and research in the form of courses and thesis. The diversity of graduate courses offered in the department of mathematics gives the student an opportunity to specialize in one of the several fields of pure and applied mathematics. The thesis is undertaken under the direction of a supervisor and will typically involve examining and writing in a specific area of mathematics with the requirement of obtaining original results. A thesis gives students the opportunity to develop broader

skills in the processes of organizing, communicating and presenting their work and will prepare students well for further research.

6.1. Registration

Requirements/conditions and procedures for registration of the thesis as well as controls, responsibilities and procedures of scientific guidance are as follows:

- The graduate studies student shall submit her/his proposal, if any, to the Department after she/he fulfills the admission requirements and passes at least fifty percent of the courses with a cumulative GPS of 'Very Good' or better. Upon recommending the proposal's approval, the Department Council shall suggest the name(s) of the supervisor and co-supervisor, if any, or the names of the supervising committee members and its chairperson. The proposal shall be submitted to and approved by the College Council before the Deanship of Graduate Studies approval.
- Topics chosen for a Master's Degree should be original and authentic, while those selected for a Doctoral Degree should be creative and innovative with a noticeable contribution in enhancing the field of knowledge related to the student›s specialty.
- Master's dissertations are written in English and can be translated in other languages in some fields according to University Council resolution based on the recommendation of the Department and the Deanship of Graduate Studies Councils. The submitted dissertation should include a detailed synopsis written in Arabic.

6.2. Supervision

The regulations of the selection of the scientific supervisor and his/her responsibilities, as well as the procedures/ mechanisms of the scientific supervision and follow-up:

- Dissertations shall be supervised by Professors and Associate Professors among the University staff members. Assistant Professors can supervise a Master›s degree if two years have passed since being appointment in her/ his rank, and have written at least two refereed papers in her/his major, whether published or accepted for publication.
- Qualified and distinguished staff members from outside the University may supervise dissertations through resolution by the University Council based on recommendations by the Department and the Deanship of Graduate Studies Councils.
- A staff member from other departments may co-supervise a dissertation depending on the nature of the work, provided that the main supervisor is from the department in which the student is studying.
- A supervisor, whether solely or in collaboration with others, can concurrently supervise a maximum of four dissertations. When extremely necessary, the number shall be raised to five, based on the Department Council recommendation and approval of the College and the Deanship of Graduate Studies

Councils. Each dissertation is equivalent to one hour in the staff member›s teaching load if s/he is the only supervisor or the main.

- Upon terminating the University service of the supervisor or her/his inability to continue with the supervision of the dissertation, the Department proposes a substitute supervisor to be concurred by the College Council and approved by the Deanship of Graduate Studies Council.
- The supervisor shall submit a detailed report at the end of each semester to the Department Chairperson regarding the progress of the student›s research study. A copy of the report shall be sent to the Dean of Graduate Studies.
- Upon completing the dissertation by the student, the supervisor submits a report to the Department Chairperson in this respect in order to continue with the procedures specified by the Council of the Deanship of Graduate Studies.
- If proven that the student is not serious about her/his study, or upon violating any of the research duties based on a report submitted by the supervisor, the Department shall send her/him a warning letter. If the student does not correct the warning causes, her/his registration shall be cancelled by the Council of the Deanship of Graduate Studies based on the Department Council recommendation.

6.3. Discussion

The regulations for selection of the defense/examination committee and the requirements to proceed for thesis defense, the procedures for defense and approval of the thesis, and criteria for evaluation of the thesis.

- The examination board is formed by the resolution of the Deanship of Graduate Studies Council based on the recommendations of the Department and College Councils.
- The Master›s examination board should fulfill the following:
    1. An odd number of examiners shall be selected, provided the supervisor is the secretariat.
    2. The minimum number of examiners is three provided that the supervisor and the co-supervisor, if any, do not constitute a majority.
    3. The board members are subject to the requirements of dissertation supervision.
    4. A professor, or at least an associate professor, should be on the examination board.
    5. Resolutions are taken upon the approval of at least two thirds of the board members
- If the dissertation supervisor fails to be among the examination board due to her/his death, service termination, or on a long period mission abroad, the Department shall propose a substitute approved by the College and the Deanship of Graduate Studies Councils.
- A report signed by all examiners shall be submitted to the Department Chairperson within one week of the examination with one of the following recommendations:
    1. Accepting the dissertation and recommending the degree award.
    2. Accepting the dissertation and suggesting some changes without being re-examined. One of the

examination board members shall be assigned to award the degree provided that the corrections are made within a maximum period of three months from the examination date; the University Council is entitled to make exceptions.

3. Re-examining the dissertation after the corrections are made within a period specified by the Council of the Deanship of Graduate Studies based on the Department Council recommendation. The maximum time period is one year from the examination date.
4. Not accepting the dissertation. Each examiner is entitled to make reservations and state her/his contradictory view point in a detailed report submitted to the Department Chairperson and the Dean of Graduate Studies within two weeks form the examination date.

- The Department Chairperson shall submit the report of the examination board to the Dean of Graduate Studies within a minimum time period of three weeks from the examination date.
- Recommendation of degree award shall be submitted by the Dean of to the University Council to decide on the matter.

6.4. Important Steps Regarding Master Dissertation (Thesis):

A. Contents of Thesis/Dissertation Write-up

The following items are to be included in the bound copy of a thesis/dissertation write-up in the exact order as given below:

1. Title Page
2. Approval Page
3. Dedication
4. Acknowledgement
5. Table of Contents
6. List of Tables
7. List of Figures
8. Abstract
9. Main Body
10. Appendix
11. Nomenclature
12. References
13. Vita

The Title page indicates the thesis/dissertation title, the full name of the author, degree (Master of Science) and the date (month and year) of degree conferral. The Final Approval page is indicated by signatures of the

Thesis/Dissertation Committee members, the Department Chairman and the Dean of Graduate Studies. The date indicates the month and year of the final thesis submission.

The Dedication, which is optional, provides a means of recognizing an individual or individuals who have provided important moral and other support which has made the achievement possible. The Acknowledgements recognize the assistance of the thesis/dissertation advisor and other members of the faculty and staff. Other specific contributions by professional people or institutions, such as librarians, correspondents and research foundations, should also be acknowledges. If financial support was provided, it is appropriate to recognize such assistance.

B. Thesis Advisor Selection

Thesis/Dissertation Advisor Selection must satisfy the following requirements:

11. Nominated thesis/dissertation advisor must be from the Student's Academic Department.
12. He should be eligible to be in a thesis/ dissertation committee.
13. Student must take the verbal approval from the nominated thesis/dissertation advisor and department Chairman prior to submitting his thesis advisor selection request.
14. M.Sc. students can select thesis advisor after completing 18 credit hours

C. Thesis/Dissertation Committee Appointment

The Master's Thesis Committee must fulfill the following requirements:

1. It must comprise an odd number of members, chaired by the thesis advisor.
2. It must comprise of at least three members (including advisor and if any, co-advisor). The advisor and co-advisor (if any) should not constitute a majority in the Committee.
3. The Committee members should meet the conditions of the thesis supervision. Any Assistant Professor must have at least 02 ISI refereed journal publications. Outside-of-JU members in the committee should have strong research records.
4. At least one member of the Committee must be a Professor or an Associate Professor.
5. Decisions of the Committee should be based on a majority vote of at least two thirds of the total number of members.

D. Submission of the Thesis/Dissertation Proposal

A thesis/dissertation is a requirement for all Master of Science (M. Sc.) students regardless of the area of specialization. It is considered as primary evidence of the student's capacity for research, independent thought

and of his ability to write professionally in the language of instruction. Below is a checklist for the thesis/dissertation proposal approval. A student must fulfill all the requirements stated below prior to submission of his thesis/dissertation proposal.

1. The Admission Status of the student is "Regular": This means that a student must fulfill all the requirements for provisional admission.
2. The Degree Plan is approved: Every graduate student is required to submit his degree plan within the first semester of his admission to the graduate program.
3. An M.Sc. student must have completed 75% of the coursework at the time of submission of thesis/dissertation Proposal.
4. Thesis course is registered for in the semester the proposal is submitted.

E. Public Oral Defense

For all students enrolled in thesis-based degree programs, it is required that they successfully defend their thesis/dissertation work publically. Since the Oral Defense is meant to be a public event, students are not entitled to defend during:

(a) Registration period (usually the first week of every semester).
(b) Summer semester.
(c) Final examination period.
(d) Official breaks.

This leaves the students to defend their theses/dissertations only during the period between the second week and the 15th week of fall or spring semesters. To schedule for a public defense, a student is required to secure a formal approval from the Deanship of
Graduate Studies after his Department and thesis/dissertation committee's approval. The request for oral defense must be submitted to the DGS at least two working weeks prior to the defense date. To allow for the committee review of the thesis/dissertation, the student must submit his thesis/dissertation to his committee members at least two weeks prior to the planned public oral defense date. The following is the checklist, to be satisfied by the student before the submission of the request for Public Oral Defense:

1. The admission status of the student is regular.
2. Degree plan is approved.
3. Thesis Proposal is approved by the Dean of Graduate Studies; for M.Sc. thesis at least one semester prior to the planned public oral defense date with at least four-month period separation.
4. All course work is completed with a GPA of at least 3.00 out of 4.00, including the Seminar course is passed.
5. The student is registered for thesis/dissertation course in the term of public oral defense.

6. The final thesis/dissertation draft along with its screened for plagiarism.

Upon approval, the student, thesis/dissertation advisor and Department are notified with the "Oral Defense Announcement" via email. After the successful Public Oral Defense, the student should submit the "Report on Oral Defense" and the thesis/ dissertation committee recommend its acceptance or rejection to the Graduation Studies. Subsequently, the student should finalize the thesis/dissertation write-up, after necessary corrections/modifications/additions as recommended by the thesis/dissertation committee, to the Deanship of Graduate Studies for final review and approval before arranging for the thesis/dissertation binding.

F. Steps after Public Oral Defense

After the successful defense of the thesis/dissertation, a student is required to submit the write-up of his thesis/ dissertation to the Deanship of Graduate Studies after getting the thesis/dissertation committee's approval. This write-up is reviewed and if there are any corrections required, it is returned to the student for the needful action before the approval of the Dean of Graduate Studies. Once all the corrections are done (if any), the final thesis/dissertation is approved/signed by the Dean of Graduate Studies and returned to the student so that he can make required copies and submit to the department and DGS after the binding. How this is done, is defined below:

1. The thesis/dissertation write-up and the signature page are to be submitted to the Deanship of Graduate Studies. The signature page should be prepared by the student, and duly signed by thesis/dissertation Committee and the Department Chairman.
2. The submitted thesis/dissertation write-up will be reviewed by the Deanship of Graduate Studies for pagination, margins, diction, etc. If any corrections are required, the write-up is returned to the student for the needful action and he is asked to resubmit for final review and subsequently, the approval of the Dean of Graduate Studies.
3. After the approval of thesis/dissertation write-up, the student is required to produce the copies of the final thesis/dissertation and arrange for the binding. Following are the required number of thesis copies:
    a. (03) Bound Copies and (02) CDs containing the PDF file of the thesis/dissertation (as approved), stamped signature page (scanned in color), are to be submitted to the Deanship of Graduate Studies, to be submitted to the JU Library.
    b. (01) Bound Copy is to be submitted to the Department (unless it is waived by the department).
    c. One Copy is to be submitted to the advisor (unless it is waived by the advisor).
    d. Optional hard Copies to the Thesis/Dissertation Committee members (in case required by them individually)
    e. Softcopy of the final thesis/dissertation to be submitted to each of the Thesis/Dissertation Committee members.
    f. (01) Bound Copy is for the student himself.

g. Students will be compensated for the expenses of binding if the original receipt is submitted to the Deanship of Graduate Studies.

7. List of related Policies

A list of related program regulations, including their link to the online version: (admission, study and exams, recruitment, appeals, and complaint regulations, etc. provided through the following links given below-

law.pdf (jazanu.edu.sa)
manual.pdf (jazanu.edu.sa)
thesis.pdf (jazanu.edu.sa)