

**GOVERNMENT POST GRADUATE COLLEGE, KARAK,
KHYBER PAKHTUNKHWA, PAKISTAN**



**SELF ANALYSIS REPORT
(2024-2025)**

BS Mathematics (Hons)

Department of Mathematics

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TABLE OF CONTENTS	PAGE
Criterion 1. Program mission, objectives and outcome.....	05
Standard1-1	06
1-2	10
1-3	10
1-4	11
Criterion 2. Curriculum design and organization.....	14
Criterion 3. Laboratories and computing facilities.....	23
3-1	24
3-2	24
Criterion 4. Student support advisory.....	25
Standard 4-1	26
4-2	27
4-3	27
Criterion 5. Process control.....	28
Standard 5-1	29
5-2	31
5-3	34
5-4	35
5-5	37
Criterion 6. Faculty.....	41
Standard 6-1	42
6-2	42
6-3	43
Criterion 7. Institutional facilities.....	44
Standard 7-1	45
7-2	45
7-3	45
Criterion 8. Institutional support.....	46
Standard 8-1	47
8-2	47
8-3	48
Annaure I; Teacher Evaluation Report	49
Annexure II; Student course evaluation	53
Annexure III; Course Review By the faculty	59

Executive Summary

The Department of Mathematics was established in 2011 and is one of the pioneer departments of the Government Post Graduate College Karak. Currently, the department has nearly 105 students, with 7 full-time faculty members (Having 03 Assistant Professors of Mathematics and 04 are lecturer in Mathematics). To enhance the quality of education, the college has established a Quality Enhancement Cell (QEC) team comprising Muhammad Fiaz. The QEC team has conducted an assessment of the department against the standards and criteria provided by the HEC Quality Enhancement Cell. This assessment was carried out for the fall semester of 2023.

Major Findings

1. The department QEC team has found that the BS Mathematics program has satisfactory program objectives and outcomes, with an effective mechanism to periodically assess performance.
2. The BS Mathematics curriculum has been designed according to the HEC curriculum and has been reviewed and approved by the Board of Studies.
3. The curriculum satisfies the standard requirements laid out by the HEC QEC assessment manual.
4. The department follows the rules and regulations for admission, enrolment, and migration as provided by the HED and Khushal Khan Khattak University Karak.
5. The department has 7 regular faculty members
6. The qualifications and specializations of faculty members are insufficient to cover all courses, plan, modify, and update the curricula.
7. The majority of faculty members are not satisfied with the facilities provided by the institution and HED.
8. Institutional facilities such as the library, classrooms, offices, and e-learning resources are currently inadequate.

A detailed report of the assessment by the QEC team regarding each standard is provided in the following sections.

Mr. Muhammad Fiaz

Section 1
Criterion 1
Program Mission, Objectives and Outcome

Standard 1.1

The program must have documented measurable objectives that support Faculty/College and institution mission statements

Institution background

Government Post Graduate College Karak is lying near session court Karak. This college was established in the year 1971 as intermediate college Karak. Later on, It was given the status of degree college in the year 1973. In the year 1990, two departments were given in the subject of Mathematics and English to meet the requirement of students of this locality. With the induction and higher education amendment rules and the need of higher education of Islamabad, Pakistan, new courses in the shape of BS studies programme were started both in universities and also in affiliated colleges to improve the qualities of education and bring the Pakistani degree to the standard of foreign degree. Government Post Graduate, Karak has total eleven departments in functioning, i.e., Department of Botany, Department of English, Department of Islamiyat, Department of Economics, Department of Physics, Department of Political Science, Department of Chemistry, Department of Pashto, Department of Urdu, Department of Zoology and Department of Mathematic. This college also offers intermediate classes. In the start it was affiliated with university of science and Technology, Kohat (KUST) and now it become a part of affiliation with creation of Khushal Khan Khattak, University, Karak. This college has produced a lot of graduates, doctors and Engineers which have/are served/serving the government in different sectors/areas. The goal of this college to produce such a lot of humans which are ethically, educationally, professionally equipped to accept all challenges face to them in future.

Allah gives us courage to fulfill the purposes of this college and placed it as leading educational institute in district Karak. *Ameen*

Objectives

INSTITUTION VISION

"Competitive and conducive environment for research, discovery, and learning."

INSTITUTION MISSION

- To make the college a place emanating knowledge, exhibiting liberty of thought, and coveted seat of learning.
- To infuse the spirit of excellence, creativity, innovation, and scholarship into the life of the college and department.
- To offer competitive and nationally recognized opportunities for research, discovery, learning, and engagement to a diverse population of students in a conducive environment.

QEC MISSION

"Enhancing quality to specified standards, catering education economy by developing quality culture."

DEPARTMENT VISION

To foster excellent teaching, research, and service that develop highly skilled and educated citizens who can contribute to the uplifting of the well-being of the nation and the international community.

DEPARTMENT MISSION

To produce leaders in the fields of Mathematics who can face the ever-changing requirements of different fields of Mathematics with vision, courage, and competence. The department strives to produce the manpower that will contribute towards the development of Pakistan to make it self-sufficient in technology, finance, and other critical sectors for the productive industries.

PROGRAM MISSION

To combine the theoretical and practical aspects of Mathematics and its applications in the modern world, the program will equip students with essential skills in the fundamental nature of Mathematics and its sub-branches, work placement, and career edge in the society.

PROGRAM OBJECTIVES

The BS Mathematics program is designed to provide students with in-depth professional training in a range of Mathematics multidisciplinary subjects. To equip students with both a theoretical background and hands-on experience, preparing them for employment in education, finance, technology, and other industries.

Professional Development

To provide a solid foundation in Mathematics that supports an interdisciplinary education with a liberal arts framework and prepares students for professions in Mathematics.

Analytical Thinking Skills

To help students develop the abilities to predict, analyze, think critically, and consider alternatives to be creative problem solvers.

Academic Skills

To foster an aptitude for continuous learning and provide a sound base for graduates to pursue higher education and research with confidence.

STRATEGIC PLAN

The BS Mathematics program has certain strengths and weaknesses. The main focus is to build on our strengths and address our weaknesses. Maintaining the strengths will be a core focus in the future. Following the HEC curriculum strictly, the Department of Mathematics intends to include new theoretical and practical courses that will help students with job placements. Students will also be encouraged to pursue higher studies and engage in research work in the future.

STRATEGIC OBJECTIVES

The strategic objectives of the course are:

- Producing competent graduates in this program.
- Preparing students for job placements in the local and international market.
- Preparing students for higher studies in Mathematics multidisciplinary areas.
- After completing the four-year program, graduates will either seek job placements or pursue careers in teaching and advanced research in the field of Mathematics.

Table 1.1 Program Objectives assessment

Objectives	How measured	When measured	Improvement identified	Improvement made
Professional development	Current students Survey	Fall 2023	Focus will be made on practical work	
Analytical thinking skills	Current students Survey	Fall 2023	Focus will be on practical subjects	
Academic skills	Current students Survey	Fall 2023	Academic skills will be developed among students through the professional approach of faculty.	

Current Students identifications

- Focus should be made on practical subjects.
- The faculty should facilitate students with learning opportunities including consultation, coaching, mentoring, supervision and technical assistance.
- To improve the student development skills, lab duration should be increased.
- More multimedia and teaching assistance equipment need to be provided to faculty.
- Printers and photo copy machines should be installed in the department.
- Latest computer system with latest software should be installed.
- Wi-Fi availability must be insured.

Standard 1.2

The program must have documented outcomes for graduating students. It must be demonstrated that the outcomes support the program objectives and that graduating students are capable of performing these outcomes.

PROGRAM OUTCOMES

After completion of the BS Mathematics program, students will have the ability to:

- I. Apply the knowledge they obtained throughout their BS program to real-world scenarios.
- II. Analyze a problem and design an appropriate solution.
- III. Perform in a team of multidisciplinary functions to accomplish a common goal.
- IV. Demonstrate efficient oral and written communication skills.
- V. Achieve problem-solving and decision-making skills in Mathematics.

Table 1.2 Relationships between Program Objectives and Program Outcomes

Program Objectives	Program outcomes					
	1	2	3	4	5	6
Professional Development				√		
Analytical Thinking Skills						
Academic Skills					√	

Standard 1.3

The results of program's assessment and the extent to which they are used to improve the program must be documented

The program is assessed on the basis of survey conducted from current students.

1.1 Faculty evaluation by current students:

Table 1.3 Faculty Evaluation Report w.r.t Mean

Teacher Name	Mean
Mr. Maqsood Ur Rehman	
Mr. Akhter Saleem	
Mr. Muhammad Imtiaz	
Mr. Asif Ur Rehman	
Mr. Tahir Zaman	
Mr. Hamayat Ullah	
Mr. Muhammad Fiaz	

The detail evaluation report is enclosed in Annexure I.

Standard 1.4

The department must assess its overall performance periodically using quantifiable measures

The performance of the department can be evaluated through performance of current students and Satisfaction of Faculty.

Current Student's Performance:

The semester wise performance is given below.

S #	Course Name	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	F	Total Students
1	Numerical Analysis-II	03	01	02	02	02	01	00	00	00	00	00	00	11

2	Real Analysis-I	02	00	03	01	02	02	00	01	00	00	00	00	11
3	Basic Topology	00	03	01	02	02	02	01	00	00	00	00	00	11
4	Linear Algebra	02	02	02	02	02	01	00	00	00	00	00	00	11
5	PDE	02	03	01	01	02	02	00	00	00	00	00	00	11

Semester: 5th

Grading Policy

Marks % age	Letter grades	Grade point
90 – 100	A+	4.00
85 – 89	A	4.00
80 – 84	A-	3.66 – 3.93
75 – 79	B+	3.33 – 3.55
70 – 74	B	3.00 – 3.26
65 – 69	B-	2.66 – 2.93
60 – 64	C+	2.33 – 2.59
56 – 59	C	2.00 – 2.25
54 – 55	C-	1.66 – 1.83
52 – 53	D+	1.30 – 1.48
50 – 51	D	1.00 – 1.15
49 and below	F	0.0

1.3 Faculty Survey

“Faculty Survey” was conducted and summary of faculty members’ feedback is given in

Annexure III

Table 1.5: Student-faculty ratio

Number of Students currently enrolled	Total full-time Faculty members	Ratio
140	7	20:1

Section 2

Criterion 2

Curriculum Design and Organization

1. Introduction of the Department

Mathematics, is the language used to express laws of nature and many phenomena in various subjects, including Medicine Psychology, Sociology, Biology, Economics, Computer Science, Physics and Engineering etc.

The Department of Mathematics at Khushal Khan Khattak University Karak Khyber Pakhtunkhwa was established in 2019. Initially, BS program was launched with the vision to import quality education in Mathematics to serve the community in more positive and fruitful way. We have a very active and involved faculty, diverse courses and a broad seminar schedule, with a variety of research projects that strengths in Algebra, Analysis, Geometry, Topology, Logic, Probability and Mathematical Physics. Our advanced courses are in order to equip our students with allied subjects such as Economics, Statistics, Physics and other general and compulsory courses. The overall goal of these courses is to provide the students with a thorough Mathematical education that will prepare them either for graduate and a research career or for a variety of opportunities in business and industries where high level Mathematics can be applied.

We have a supportive atmosphere, with personal attention from the faculty and extensive interaction among students. The University Library is equipped with latest and relevant books in almost all important branches of Mathematics. The Department possesses its own computers as well as Internet facilities to cater the needs of the students and faculty members engaged in study. The department organizes Seminars, Workshops etc. Furthermore, for character building and civic grooming of the students, a student society named as “Mathematics Students Club (MSC)” has been established. We are looking for interested, mathematically talented and dedicated students to be a part of our group of excellent future mathematicians.

1.1. Vision

To act as a leader in the advancement of mathematics and promotion of science and technology in Khyber Pakhtunkhwa in particular and in the country in general.

1.2. Mission

The Department of Mathematics’ mission is to provide an environment where students can learn and become competent users of mathematics. Moreover, the Department will contribute to the development of students as mathematical thinkers, enabling them to become lifelong learners, to continue to grow in their chosen professions, and to function as productive citizens.

1.3. Objectives

- To engage in goal-oriented higher-level teaching and research.
- To promote cooperation and inter-disciplinary relationships with other teaching and research organizations of the country and abroad.
- To arrange conferences, seminars and refresher courses for the promotion of Mathematics education and research. To provide a platform to the student so that to exploit their academic potentials and teaching skills.

2. ELIGIBILITY CRITERIA FOR BS MATHEMATICS

- FA with Mathematics/F.Sc Pre-Engineering/DAE or Equivalent with Mathematics having at least 45% Marks.
- Associate Degree in Science with a minimum CGPA of 2.00 out 4.00 or equivalent.

Provided that the candidates, if admitted shall be placed in 5th Semester of BS Mathematics.

Provided further that they shall be offered bridging courses of 15-18 Credit Hours, if needed, to be determined by the Equivalence Committee, on case-to-case basis.

- BA/BSc with mathematics and a minimum 2nd Division (45% marks).

Provided that the candidates, if admitted shall be placed in 5th Semester of BS Mathematics.

Provided that they shall be offered bridging courses of 15-18 Credit Hours, if needed, to be determined by the Equivalence Committee, on case-to-case basis.

3. Scheme of Studies for BS Mathematics

3.1. Program Structure/Courses Requirement

Every student of BS Mathematics will have to complete a minimum of 130 Credit Hours (40 Courses) comprising of 13 courses (39 Credit Hours) in General Education (Gen Ed).

3.1.1. General Education (Gen Ed)

General Education courses are divided into:

3.1.1.1. Breadth Courses

These courses cover the three domains of knowledge i.e.

3.1.1.1.1. Arts and Humanities

3.1.1.1.2. Social Sciences

3.1.1.1.3. Natural Sciences

3.1.1.2. Foundational Skills Courses

These courses include:

3.1.1.2.1 Expository writing

3.1.1.2.2 Quantitative reasoning

3.1.1.3. Civilizational Courses:

Civilizational Courses include:

3.1.1.3.1. Pakistan Studies

3.1.1.3.2. Islamic Studies

N.B.: The courses falling in these three domains are distributed as per following:

Knowledge Domain	Discipline	Number of Course(s)
Breadth Courses	Arts and Humanities	02 Courses
	Social Sciences	02 Courses
	Natural Sciences	02 Courses
Foundational Skills	Expository Writing	03 Courses
	Quantitative Reasoning	02 Courses
Civilizational Courses	Pakistan Studies	01 course
	Islamic Studies	01 course

Total	Number of Courses	13 Courses
	Credit Hours	39 Credit Hours

3.1.1.4.Consolidated List of General Courses:

General courses shall be taken from the respective category as assigned to them in the table given hereunder:

Domain	Nomenclature/ Course Abbreviations	Course Code	Course Title	Credit Hours
Arts & Humanities (A&H)	AH – I	GC204	Human Rights & Citizenship	3(3-0)
		ISL415	Islamic Morals	3(3-0)
		GEN201	Personality Development	3(3-0)
		GC101	Study Skills	3(3-0)
		URDU101	Urdu	3(3-0)
		URDU352	اردو زبان - قواعد اور املا Zuban qawaed aur Imla)	3(3-0)
		ISL 103	Arabic Language I (Al-Sarf)	3(3-0)
	AH – II	GEND101	Introduction to Gender Studies	3(3-0)
		GC202	Islamic History & Culture	3(3-0)
		ISL430	Study of Tasawuf	3(3-0)
		POL 330	Introduction to Local Government	3(3-0)
		POL 414	Conflict and Conflict Resolution	3(3-0)
		LAW 101	I.H.L in Islamic and International Law: A Comparative Study	3(3-0)
		URDU111	اردو زبان : تشکیل و ارتقاء Zuban: Tashkil-o-irteqa)	3(3-0)
Social Sciences (SS)	SS – I	CMS 101	Introduction to Communication	3(3-0)
		CMS233	Basic Sociology	3(3-0)
		POL 101	Political Science	3(3-0)
		History101	History	3(3-0)
		ECO 101	Principles of Economics	3(3-0)
		LAW 101	Law	3(3-0)
	SS – II	PSY 101	Psychology	3(3-0)
		POL 229	Introduction to International Relations	3(3-0)
		ECON102	Principles of Macro Economics	3(3-0)
		EDU 101	Education	3(3-0)
		PHI 101	Introduction to Philosophy	3(3-0)
		ECON 426	Islamic Economics	3(3-0)
		POL 216	Community Organization & Development	3(3-0)
		HIS 101	History of Indo-Pak Sub-Continent	3(3-0)
		CMS 102	Introduction to Mass Media	3(3-0)
		CMS231	Public Relations	3(3-0)
Natural Sciences (NS)	NS – I	BI101	Introduction to Biology	3(2-1)
		PHY101	Physics	3(3-0)
		BI102	Elementary Chemistry	3(2-1)
		BOT-101	Diversity of Plants	3(3-0)

	NS – II	PHY-111	Mechanics	3 (3-0)
		Geol116	General Geology	3(3-0)
		GEO 101	Geography	3(3-0)
		ZOO-101	Principles of animals life-I	3(2-1)
		CHEM324	Biochemistry – I	3(3-0)
		PHY-112	Electricity and Magnetism	3 (3-0)
Domain	Nomenclature/Course Abbreviations	Course Code	Course Title	Credit Hours
Expository Writing (EW)	EW – I	ELL101	English I: Reading and Writing Skills	3(3-0)
	EW – II	ELL104	English II: Composition Writing	3(3-0)
	EW – III	ELL202	English III: Communication and Presentation Skills	3(3-0)
Quantitative Reasoning (QR)	QR – I	CS101	Introduction to Computing	3(2-1)
		STAT105	Statistics and Probability	3(3-0)
	QR – II	Maths101	Introduction to Mathematics	3(3-0)
Civilizational	Civ – I	IS 101	Islamic Studies	3(3-0)
	Civ – II	PS 101	Pakistan Studies	3(3-0)

Elective Courses for BS Mathematics

S. No.	Course Code	Course Title	Credit Hours
1	Math-451	Mathematical Modeling	3(3-0)
2	MATH-452	Advanced Group Theory	3(3-0)
3	Math-411	Galois Theory	3(3-0)
4	Math-421	Differential Geometry	3(3-0)
5	Math-441	Affine and Euclidean Geometry	3(3-0)
6	Math-422	Graph Theory	3(3-0)
7	Math-414	Riemannian Geometry	3(3-0)
8	Math-412	Fluid Mechanics	3(3-0)
9	Math-431	General Relativity	3(3-0)
10	Math-432	Modeling and Simulations	3(3-0)
11	Math-433	Dynamical Systems	3(3-0)
12	Math-401	History of Mathematics	3(3-0)
13	Math-423	Pointless Topology	3(3-0)
14	Math-403	Convex Analysis	3(3-0)
15	Math-404	Mathematical Biology	3(3-0)
16	Math-434	Numerical solution for ODE's	3(3-0)
17	Math-444	Numerical solution for PDE's	3(3-0)
18	MATH-452	Fuzzy Set Theory	3(3-0)
19	MATH413	Theory of Modules	3(3-0)

20	MATH-454	Introduction to Fixed Point Theory	3(3-0)
21	MATH-332	Operations Research	3(3-0)

**Semester-wise Break up
FIRST YEAR**

Semester-I			
S. No.	Course code	Course Title	Credit Hours
1	MATH-101	Calculus-I	3(3-0)
2	*	NS – I*	3(3-0)
3	*	SS – I*	3(3-0)
4	*	AH – I*	3(3-0)
5	ELL-101	English I: Reading and Writing Skills	3(3-0)
6	CS-101	Introduction to Computer	3(3-0)
Total			18

Semester-II			
S. No.	Course code	Course Title	Credit Hours
1	MATH-102	Calculus-II	3(3-0)
2	*	NS – II*	3(3-0)
3	*	QR – II*	3(3-0)
4	*	AH – II*	3(3-0)
5	ELL-104	English II: Composition Writing	3(3-0)
6	PSY-101	Psychology	3(3-0)
Total			18

SECOND YEAR

Semester-III			
S. No.	Course code	Course Title	Credit Hours
1	MATH-211	Calculus III	3(3-0)
2	MATH-202	Set theory and Mathematical logic	3(3-0)
3	MATH-231	Computing Tools	3(2+1)
4	PS -101	Pak Studies	3(3-0)
5	IS-101	Islamic Studies	3(3-0)
6	ELL-201	English III: Communication and Presentation Skills	3(3-0)
Total			18

*Respective course shall be selected from a particular set of courses from General Education category as enlisted under sections 3.1.1.1 to 3.1.1.4.

Semester-IV			
S. No.	Course code	Course Title	Credit Hours
1	MATH-221	Vector and Tensor Analysis	3(3-0)
2	MATH-222	Ordinary differential equation	3(3-0)
3	MATH-243	Group theory	3(3-0)
4	MATH-244	Discrete mathematics	3(3-0)
5	MATH-245	Number theory	3(3-0)
6	MATH-246	Numerical analysis-I	3(3-0)
Total			18

THIRD YEAR

Semester-V			
S. No.	Course code	Course Title	Credit Hours
1	MATH-351	Basic Topology	3(3-0)
2	MATH-352	Partial differential equation	3(3-0)
3	MATH-353	Numerical Analysis-II	3(3-0)
4	MATH-354	Real Analysis- I	3(3-0)
5	MATH-355	Linear Algebra	3(3-0)
Total			15

Semester-VI			
S. No.	Course code	Course Title	Credit Hours
1	Math-361	Rings and field	3(3-0)
2	Math-362	Advanced topology	3(3-0)
3	Math-363	Complex Analysis	3(3-0)
4	Math-364	Real Analysis-II	3(3-0)
5	Math-365	Measure theory	3(3-0)
		Entrepreneurship/Youth Club/ Sports (04 Hours per week)	Non-Credit
Total			15

FOURTH YEAR**Semester-VII**

S. No.	Course code	Course Title	Credit Hours
1	Math-471	Functional Analysis –I	3(3-0)
2	Math-472	Mathematical Statistics	3(3-0)
3	XXXX	E-1	3(3-0)
4	XXXX	E-2	3(3-0)
5	Math-473	Mathematical Methods/Project	3(3-0)
		Internship	Non-Credit
Total			15

Semester-VIII

S. No.	Course code	Course Title	Credit Hours
1	Math-481	Integral Equations/Project	3(3-0)
2	Math-482	Functional Analysis –II	3(3-0)
3	Math-483	Optimization Theory	3(3-0)
4	XXXX	E-3	3(3-0)
5	XXXX	E-4	3(3-0)
Total			15

Section 3

Criterion 3

Laboratories and computing facilities

Laboratories and Computing Facilities

Existing Facilities

The Department of Mathematics does not require traditional laboratories. However, it relies on computing facilities to support its curriculum. The department currently has a single computer lab, which is insufficiently equipped and was originally designed for B.S and intermediate classes. Mathematics students often depend on the computing resources from the adjacent departments while accessing knowledge from the main library and digital library. The management is working to enhance these facilities by securing funds through the Directorate of Higher Education.

STANDARD 3.1

Computing manuals/documentation/instructions for software and tools must be available and readily accessible to faculty and students. The Department of Mathematics has not developed comprehensive manuals for all the software and tools used in practical-oriented courses.

STANDARD 3.2

There must be adequate support personnel for instruction and maintaining the computing facilities.

Section 4

Criterion 4

Student Support and Advising

The Department of Mathematics ensures timely completion of the student program by offering approved subjects each semester, as regulated by HEC. Students' requests regarding elective subjects are considered through academic counseling, and efforts are made to improve the program by taking important measures based on these consultations. Students receive support for academic and personal career matters on a weekly basis through direct interaction with their instructors. Additionally, an Academic Coordinator is available in the college for students' guidance.

In order to meet Criterion 4, the following standards are discussed:

Standard 4.1

Courses must be offered with sufficient frequency and number for students to complete the program in a timely manner

The Department of Mathematics follows the curriculum provided by the HEC.

One (1) semester: 18 weeks (Inclusive two (2) weeks for mid & final examinations)

Total Semesters: 8 Semesters

Total Credit Hours: 130 (one hundred and thirty)

BS Mathematics program comprises of fifty four (54) courses as per HEC equal distribution criteria.

Definition of Credit Hours

Theory Credit Hours	Computer Lab. Credit hours	Total Credit hours
Number of theory classes in week for the duration 1 hours	Number of lab classes in week for duration 1 hours, Three classes of one (1) hours will be consider one credit hours	Theory Credit Hours + Computer Lab. credits hours
e.g.		
3	0	3
2	1	3

Standard 4.2

Courses in the major area of study must be structured to ensure effective interaction between students, faculty and teaching assistants

The Department of Mathematics has fully qualified faculty members specializing in different areas of Mathematics. They are highly enthusiastic about fulfilling the teaching requirements for all approved courses by the academic council, according to the syllabus provided by the Higher Education Commission (HEC). The department ensures effective interaction between students and faculty members for counseling on a weekly basis.

Detailed of the faculty w.r.t classes are attached as annexure iv

Standard 4.3

Guidance on how to complete the program must be available to all students and access to academic advising must be available to make course decisions and career choices.

When the student gets admission at the college, all program requirements are communicated to them through prospectus. For full time students' affairs and matters, a coordinator is present at the department to facilitate their issues. Further, it is ensured by the coordinator that students' enrollment is made properly according to program's requirements.

Additionally, tutorial classes have been started on weekly basis to provide academic advising for the students.

Section 5

Criterion 5

Process Control

The important rules, policies and regulations which address the standard 5 are provided in the sections below.

Standard 5.1

The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives

5.1

- A candidate interested in admission for a degree program shall make an application for admission in response to advertisement by the HIMES Directorate of Higher Education Peshawar, through online system within the specified dates. Attested copies of certificates / testimonials and other required documents should be attached to the application form.
- The admission to BS program will be on merit to be based on academic performance in intermediate examination and other factors as may be prescribed by the competent authority.
- The admission to a degree program is normally in the month of September for Fall Semester, admission for spring semester is directly through the coordinator.
- The candidates seeking admission for the first time in any of the degree courses must complete all admission/enrolment requirements within specified dates, failing which may lead to cancellation of Admission.
- Any candidate who was punished (major penalty) by his parent institution/university, for the act of indiscipline and objectionable activities, will not be allowed admission in the University.
- A student at the time of first admission/enrolment with any communicable disease or mental or physical disability which may stand in the way of his selected field of study may be denied admission.
- The Admission Committee may refuse admission to any student who in their (members) opinion has a background not conducive to learning.

- The candidates and their parents have to give an undertaking to the effect that they will abide by the Rules and Regulations of the college and such other instructions as may be issued by the competent authority from time-to-time.
- Each student has to submit an affidavit not to take part in political activities detrimental to the academic environment of the University.
- The final authority of admission is with the respective Head of the Department. The admission committee is a recommendatory body.
- The admission of candidates will remain provisional unless all fees are paid and testimonials / documents verified.

5.2

A minimum of 12 years of education:

Intermediate Pre Engineering, A-Levels or equivalent (minimum 45% marks)

5.3

- Matric DMC & provisional certificate /secondary school certificate
- Intermediate DMC & provisional certificate/Higher secondary school certificate
- Copy of computerized national identity card is mandatory
- Four recent passport size-coloured photographs

5.4

A student from other educational institution, who intends to migrate to University, shall meet the following requirements:

- A genuine and plausible reason for migration.
- Production of a certificate of good character from his/her parent institution.
- Production of detailed marks certificate and syllabi of courses he/she studied for equivalence purposes.

Standard 5.2

The process by which students are registered in the program and monitoring of students' progress to ensure timely completion of the program must be documented. This process must be periodically evaluated to ensure that it is meeting its objectives

5.5

Regarding monitoring, at the end of the semester, each teacher shall award letter grades for semester and provide master award list to the Controller of Examinations, who shall prepare copies of the award list, retaining a copy himself and sending one each to the concerned college.

Examination and Evaluation

Each subject shall carry 100 marks during a semester. Students shall be assessed for 50 % of the grade during the semester and 50% at the end of the semester. Distribution of Marks will be as under:

S.No.	Component	Marks
A	Attendance	05
B	Test, Quiz, Time-constraint, Assignments, Group Assignments, Class participation	15
C	Mid Term	30
D	Final Term	50
Total		100

5.6

- All students shall fill the prescribed Registration Form at the beginning of each semester for the courses they will study during that semester and submit the form to the office concerned.
- At the beginning of each semester, students shall be offered courses of full load (12 or more Credit Hours) but they have the choice to select less courses than the

full load. A student registering for less than 12 Credit hours will be a part time student.

- The enrolment shall be considered incomplete if a student does not make full payment of prescribed fees and submit the prescribed form in the Admission Office.
- Enrolment and fee payment shall be completed within notified dates unless authority concerned may, under special circumstances, permit a student with late fee to enroll.
- A student shall enroll himself each semester unless he has completed all the requirements for the degree. In case of non-enrolment in any semester his admission shall stand suspended. The authority may remove suspension from him if he/she applies for regularization. In case, if one fails to enroll for two consecutive semesters, his admission shall be cancelled. Re-admission of such student shall be considered as a fresh admission.
- When a course, for which a student is enrolled, cannot be offered according to the announced program he/she may take an alternative course. However, this must be done not later than 15 days after the date of enrolment.
- A student shall be allowed to:
 - a. change a course within 7 days of the commencement of a semester, and
 - b. Withdraw from a course within 4 weeks of the commencement of semester. Withdrawn courses will appear on transcript with letter grade “W”.

5.7

- The educational process at the college depends, to a large extent, on regular classes, make-up classes, laboratory work, in-semester tests, and examinations. Failure to attend any of these can influence academic record, or even lead to dropping from the course, award of “F” grade, or expulsion from the college. A student has to fulfill the following requirements:
- Students must meet the attendance criterion in every course. Students with less than 75% attendance in theory or practical separately of any course, shall not be allowed to sit in the final examination of that particular course in a semester,

provided that the period of absence in the case of participation in co-curricular/sports activities outside Karak and performing Umra/Hajj, with the permission of the Competent Authority, may not be counted.

- The Principal/Coordinator may condone absence from classes up to 40% of the total lectures delivered.
- Attendance counting shall start from the date of resumption of classes.
- If a student remains absent for one week continuously from all classes without any intimation, his/her admission would be suspended by the department concerned.
- If a student fails to pay registration renewal fee, his/her name may be deleted from attendance list and will not be allowed to attend classes.
- Students shall take the required number of quizzes/examinations, complete assignments/projects and fulfill other evaluation criteria set by the University, In case a student joins a course after it has started, he/she will be responsible for any missed quizzes, assignments, and lectures. The marks in missed quizzes will be zero while makeup tests, assignments, projects, and labs can be arranged in consultation with the teacher/Head of department.
- Leave up to seven days in all degree programs shall be granted by the Head of Department on the recommendation of concerned teachers and 15 days by the Principal in verifiable exceptional cases. Maximum leave shall not exceed 22 days per semester. The production of a medical certificate, in support of leave, shall be compulsory for an ailing student. The student will have to satisfy the Head of Department about the genuineness of his/her request.
- It is the responsibility of the students to be aware of their attendance status at any given time. Attendance status can be checked from course teacher/HOD and coordinator.
- The following marks on the basis of attendance percentage above 75% and class participation may be awarded to a student in the Internal Evaluation result:

Attendance/Participation	Marks
91-100%	5
81-90%	4
76-80%	3
Below 76 %	0

5.8

At the beginning of the semester the subjects are identified from Prospectus for each respective semesters which are enlisted on the subject list and verified by the Head of the Department. The policy for number of subjects to be taken by the student is six (18 Credit Hours).

5.9

Summer Semester is mostly not observed at the colleges.

5.10

Student Progress Monitoring is carried out by quantifying the final GPA. The department takes different measures if a student failed to achieve the desired CGPA.

Standard 5.3

The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institution mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives

Recruitment Policy

In Khyber Pakhtunkhwa, staff for government colleges is recruited by KP Public Service Commission. The recruited staff is Lecturer in BPS-17, Assistant Professor in BPS-18 and Associate Professor in BPS-19.

Hiring Staff

Each college in Khyber pakhtunkhwa hired lecturers in all decipline by advertising the posts in News papers and Social media through the concerned JMC.

Promotion Policy

In colleges, promotion is based on seniority/fitness through PER submitted each year by the Principal of the concerned college.

Standard 5.4

The process and procedures used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives

5.11

- A list of courses is approved by the Board of Studies as per HEC criteria.
- It is ensured each faculty member is assigned the workload approximately evenly.
- A file containing the course objectives and outlines is provided to the faculty member.
- Each faculty member prepares the course folder which contains Attendance Record, Time Table, Course Contents, Record of Assignments, Record of Quizzes, and Record of Examination
- The Head of Department also keep an eye on attendance of students on monthly basis.
- He makes sure that a Make Up class must be announced and taken in case of absence of a faculty member.
- A list of short attendance is also prepared by each faculty member and communicated to program HoD each month.
- The HoD announces the short attendance students through notice board.

- The students who fail to improve the attendance are barred from sitting in exam of respective course.

5.12

Faculty members prepare a course file comprises of course plan. The course plan includes weekly breakup, lab/teaching tools, grading policy, Quizzes and assignments.

5.13

In very first lecture, the course introduction is provided to students. Introduction comprises of course objectives, course contents, marks distribution, credit hours, and schedule for mid and final exam.

5.14

Students are evaluated through attendance, assignments, quizzes, class presentations, class tests, mid-semester and final semester examinations. The weight-age of each module is communicated to students by the teacher in the first class.

- For theory based course weight-age of marks is 50% final exam, 20% sessional, and 30% mid-term.
- For lab based course weight-age of marks is 50% final exam, 20% sessional, and 30% mid-term.

5.15

The quality of delivering course material is maintained using the latest technologies within classrooms such as multimedia, computer animations etc.

Standard 5.5

The process that ensures that graduates have completed the requirements of the program must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives

5.16

Currently semester 6th is running in the department and thesis will start from the upcoming semester for which the basis are as follow.

- Both synopsis and thesis/project report shall have approval of the departmental committee.
- The thesis/project report shall be evaluated by an External Examiner(s) and Supervisor(s).
- The student shall give a seminar on his/her thesis/project report before viva-voce examination, where required.
- The date, time, and venue of examination shall be notified at least one week before the commencement and the faculty and students interested to participate in the oral presentation may be allowed. The notification to this effect may be made by the Head of Department/Chairman/Director of Institute/Controller of Examinations.
- The Controller of Examinations shall get the thesis/project report evaluated within two months after the date of submission/resubmission of thesis/project report in his Office. Any delay beyond two months shall be brought to the notice of the Vice Chancellor.
- The thesis/project report shall be evaluated according to the following numerical and letter grades:
 - a. The thesis shall be graded in percentage of marks.
 - b. The marks so awarded shall be converted into letter grades by the prescribed formula, which shall be A+, A, B+, B, C+, C or F (fail), as the case may be. Average grade on the basis of course work and thesis shall then be worked out to calculate the final CGPA.

- c. Both the Examiner/Supervisor shall sign the thesis/project report after the Viva Voce Examination, after making necessary corrections and incorporating therein, any suggestions by the Examiners/Supervisor.
- d. Both the Examiner / Supervisor shall sign the result sheet prescribed for this purpose at the end of the examination. The supervisor will submit the result to the Controller of Examinations.
- e. In case of disagreement among the Examiner/Supervisor regarding the acceptance of the thesis/project report, it shall be referred to a third External Examiner, appointed by the Vice Chancellor, whose decision shall be final.
- f. Thesis/project evaluation fee will be paid by each student.

5.17

- The synopsis approved for thesis/project research shall remain valid only for two semesters. The Vice Chancellor/Principal/head of the department may extend this period on case to case basis.
- A student admitted to the course in partial residence shall undertake research/project work in a laboratory or institute approved by the Board of Advance Studies and Research.

5.18

- If a candidate fails in the thesis/project report examination, he/she may enroll again and submit a revised thesis/project report on payment of the prescribed examination fee but he/she shall not be entitled to resubmit his thesis/project report before the expiry of six months after the date of declaration of the result of the last thesis/project report examination. He/she can avail of this chance only once.
- If a student fails to submit his project / thesis on or before prescribed date, he/she shall be granted incomplete grade (I).
- A student who gets an “I” grade in the project/thesis shall register himself again in the next semester by paying the registration fee until the project/thesis is completed.

5.19

- It is the responsibility of each student to fulfill the following graduation requirements:
- The student has earned the requisite credit hours of the degree program.
- The student's CGPA on the scale of 4.0 is not less than:
Bachelor/Master = 2.0
- The student has passed all the core, supporting and compulsory courses of the degree program.
- The student has met his financial and material obligations towards the university and there is nothing outstanding against him.
- The student produces clearance certificates from all concerned departments and sections.

5.20

- A candidate who passes all the examinations with the prescribed CGPA shall be awarded degree which shall be conferred on him at the subsequent convocation, which is normally held annually.
- It is mandatory for all students to pay convocation fee and be present at the occasion.
- The Controller of Examinations will issue Provisional Certificate till issuance of final degree.
- The character certificate to students will be issued by the Head of the concerned department.

5.21

- The synopsis approved for thesis/project research shall remain valid only for two semesters. The Vice Chancellor may extend this period on case to case basis.
- A student admitted to the course in partial residence shall undertake research/project work in a laboratory or institute approved by the Board of Advance Studies and Research.

5.22

- If a candidate fails in the thesis/project report examination, he/she may enroll again and submit a revised thesis/project report on payment of the prescribed examination fee but he/she shall not be entitled to resubmit his thesis/project report before the expiry of six months after the date of declaration of the result of the last thesis/project report examination. He/she can avail of this chance only once.
- If a student fails to submit his project / thesis on or before prescribed date, he/she shall be granted incomplete grade (I).
- A student who gets an “I” grade in the project/thesis shall register himself again in the next semester by paying the registration fee until the project/thesis is completed.

Section 6

Criterion 6

Faculty

Faculty

Faculty members of the Department of Mathematics at GPGC Karak, are actively engaged in teaching activities and possess the necessary technical depth to support the program's mission and objectives. They are also involved in teaching supporting classes in other departments of the college. The faculty members strive to cover the curriculum adequately and arrange extra classes if needed to ensure comprehensive learning.

Standard 6.1

There must be enough full-time faculty who are committed to the program to provide adequate coverage of the program areas/courses with continuity and stability. The interest of all faculty members must be sufficient to teach all courses, plan, modify and update courses. The majority must hold a PhD degree in the discipline.

There are five full time faculty members, and three visiting faculty members in the Department of Chemistry who can meet the needs of current requirement. Though we have PhD holder scholars in Botany, Chemistry and M.phil in Zoology and English, but the interest and qualifications of faculty members are not sufficient to plan, teach, modify, and update all offered courses and curriculum. Resumes of all the Faculty members the department have been submitted online to Directorate of Quality Assurance of the University. Following is a brief detail of the permanent faculty members of the Department:

1. Mr. Maqsood Ur Rehman	Assistant professor
2. Mr. Akhtar Saleem	Assistant professor
3. Mr. Muhammad Imtiaz	Assistant professor
4. Mr. Asif Ur Rehman	Lecturer
5. Mr. Tahir Zaman	Lecturer
6. Mr. Hamayat Ullah	Lecturer
7. Mr. Muhammad Fiaz	Lecturer

Standard 6.2

All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place

Faculty members of the Department of Mathematics, GPGC Karak are considered updated in the discipline based on the following criteria:

- All Faculty members meet the HEC criteria for appointment in their respective cadre.
- Faculty members generally participate in seminars, conferences at the college, JMC University and provincial level.
- Faculty members take interest in teaching and involve themselves in practical activities.
- A 40-days training is must for all cadre promotion at HEART Peshawar.

Standard 6.3

All faculty members should be motivated and have job satisfaction to excel in their profession

It is noted that majority of faculty of permanent staff show satisfaction with their pay protection but the hired staff is not satisfied with the pay and incentives on contract basis.

Annexure III

Section 7

Criterion 7

Institutional Facilities

This criterion describes the facilities provided by institution such as library, classrooms and offices. Several standards are discussed to meet the program objectives through these facilities.

STANDARD 7.1

The institution must have the infrastructure to support new trends in learning such as e-learning

GPGC Karak has a single library. This facility is not available to the students and department.

Standard 7.2

The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel

A well-managed library has been setup at the college to keep updated the students and faculty members with the latest trends in different discipline. A qualified librarian with supporting staff is responsible to manage the library in an efficient manner. Approximately 4000 books have been stocked in library.

Library provides support in enhancing the technical knowledge of the students.

Standard 7.3

Class rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities

Classrooms are not equipped with multimedia facilities. Additionally, the faculty offices are not equipped with adequate resources to accomplish their job responsibilities in efficient manner.

Section 8

Criterion 8

Institutional Support

GPGC, Karak is making best efforts to provide adequate resources to the faculty, library, and laboratories and computing facilities. The following standards explain these resources.

Standard 8.1

There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teachers and scholars

Already discussed in Sections 5-3 and 6-3

Adequate budget is sanctioned each year for research and development, faculty development program, books and research journals for library, to enhance the teachers' and scholars' competency as mentioned below.

Standard 8.2

There must be an adequate number of high quality graduate students, research assistants and Ph.D. Students

Semester	No. of Students			
	BS	M.S	Research Assistant	PhD
1 st	14	00	-	-
3 rd	10	-	-	-
5 th	11			
7 th	10			
Total	45	00		

Standard 8.3

Financial resources must be provided to acquire and maintain library holdings, laboratories and computing facilities

Library

Describe the resources available for the library.

- A single library is present in the college which is deficit in books related to BS Mathematics and other departments. An order is placed by the management to purchase the related books to keep updated the students and faculty members.

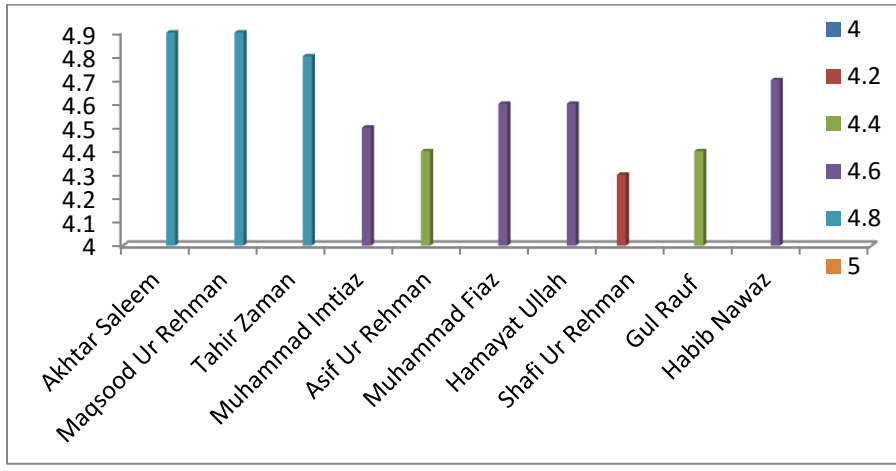
Computing Facilities

Describe the resources available for computing facilities.

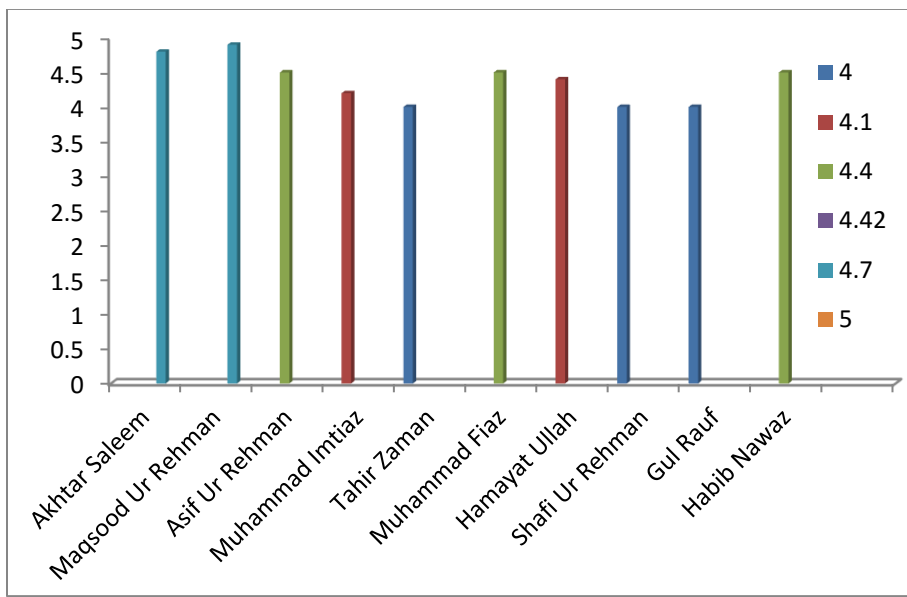
- Mathematics lab is facilitated by a single laptop, printer provided in the current budget allocation.

Teacher Evaluation Report

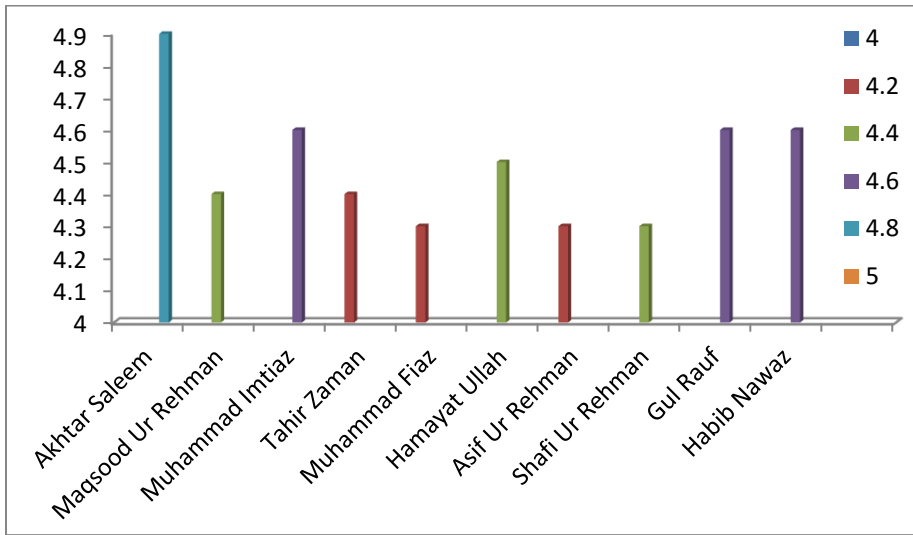
1. Instructor Preparation



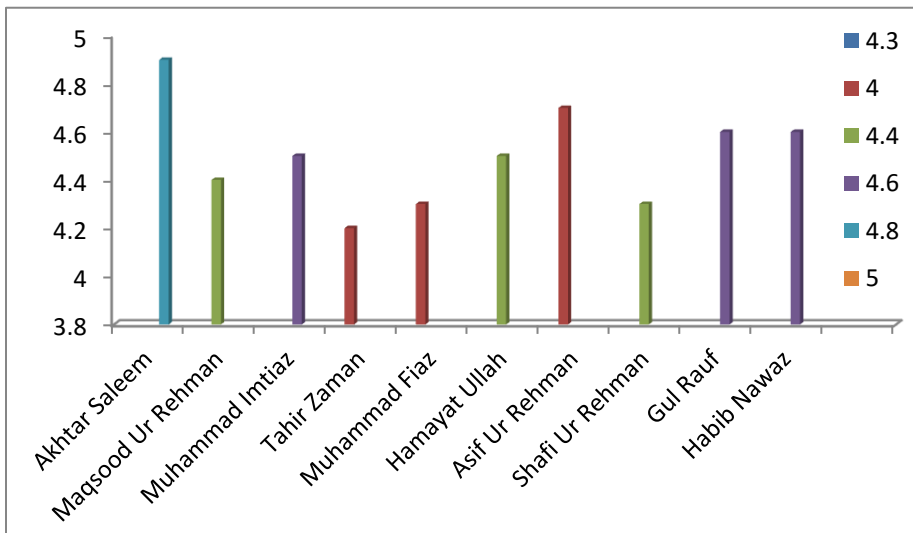
2. Course Completion



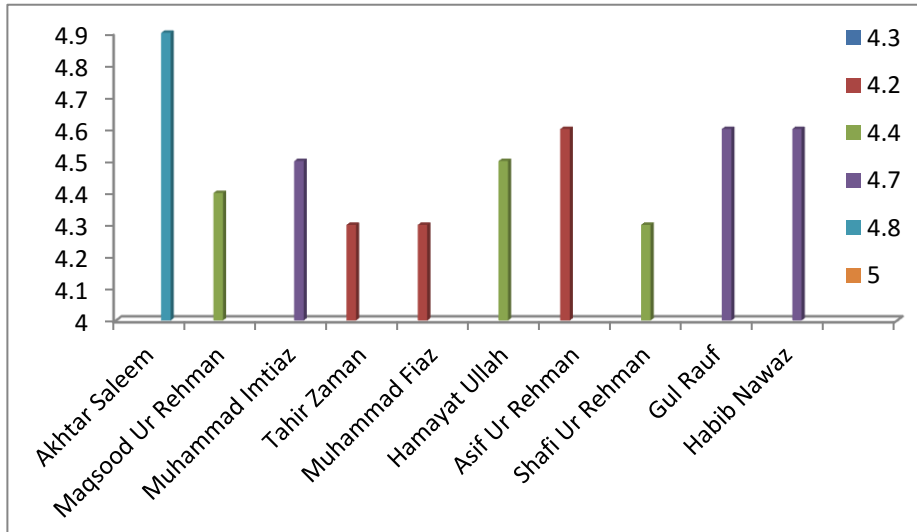
3. The Instructor communicate the subject matter effectively



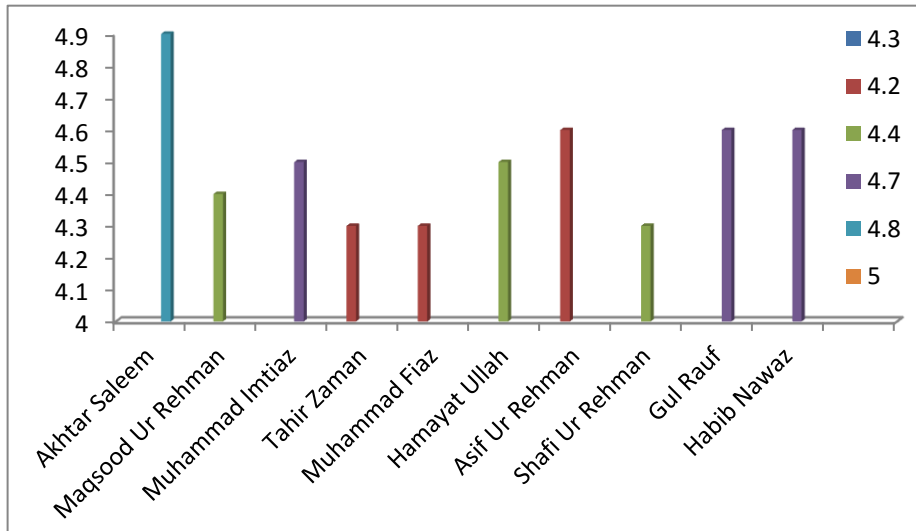
4. Environment conducive to learning



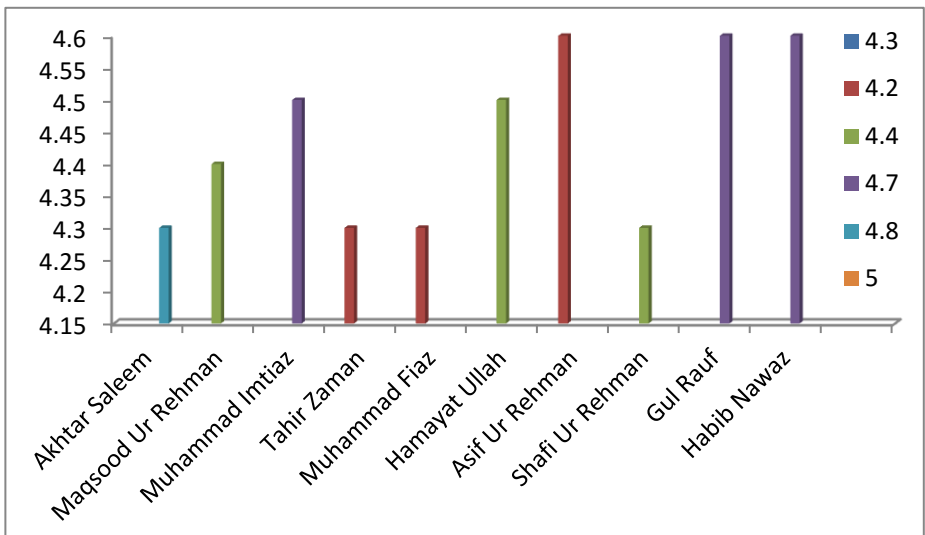
5. Teachers arrives on time



6. The instructor is fair in examination

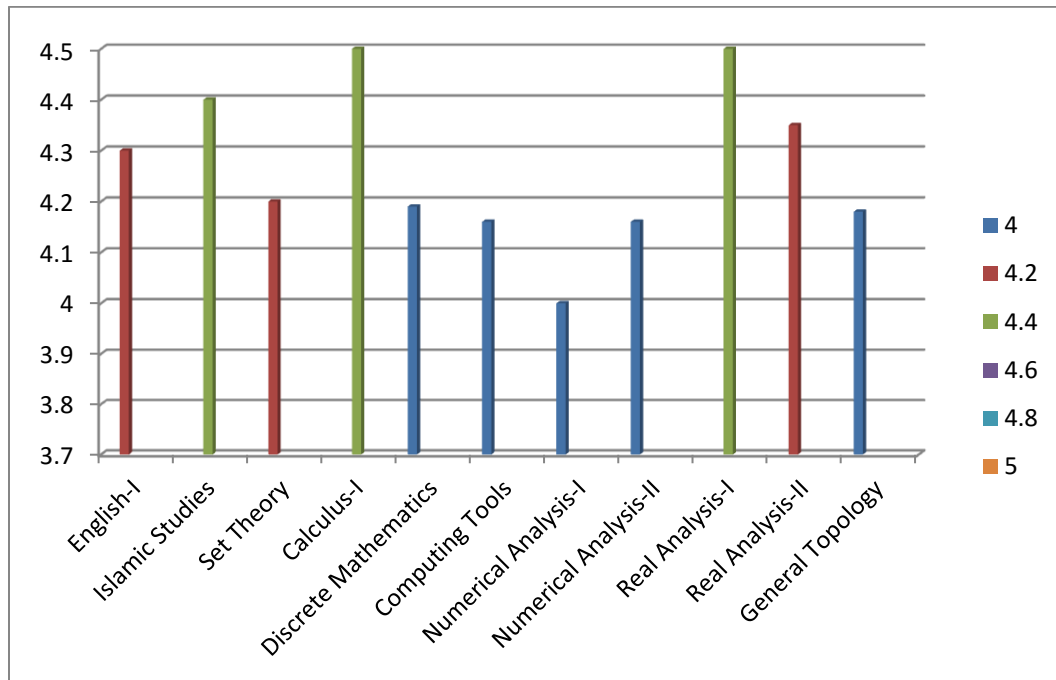


7. The instructor was available during the specified office hours and for class consultation

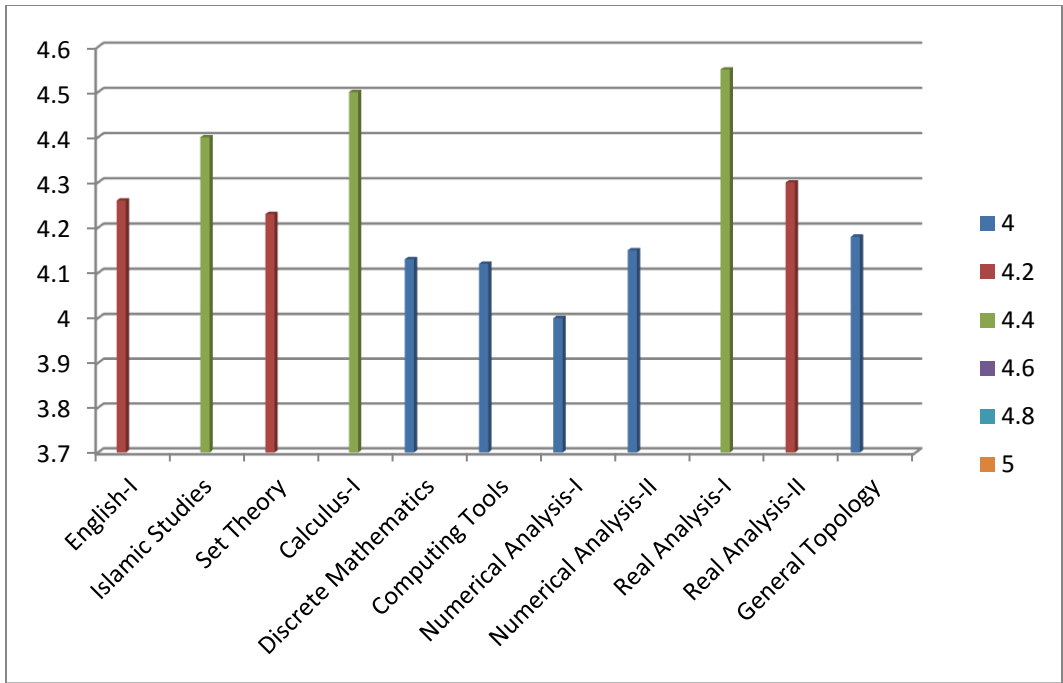


Student course evaluation

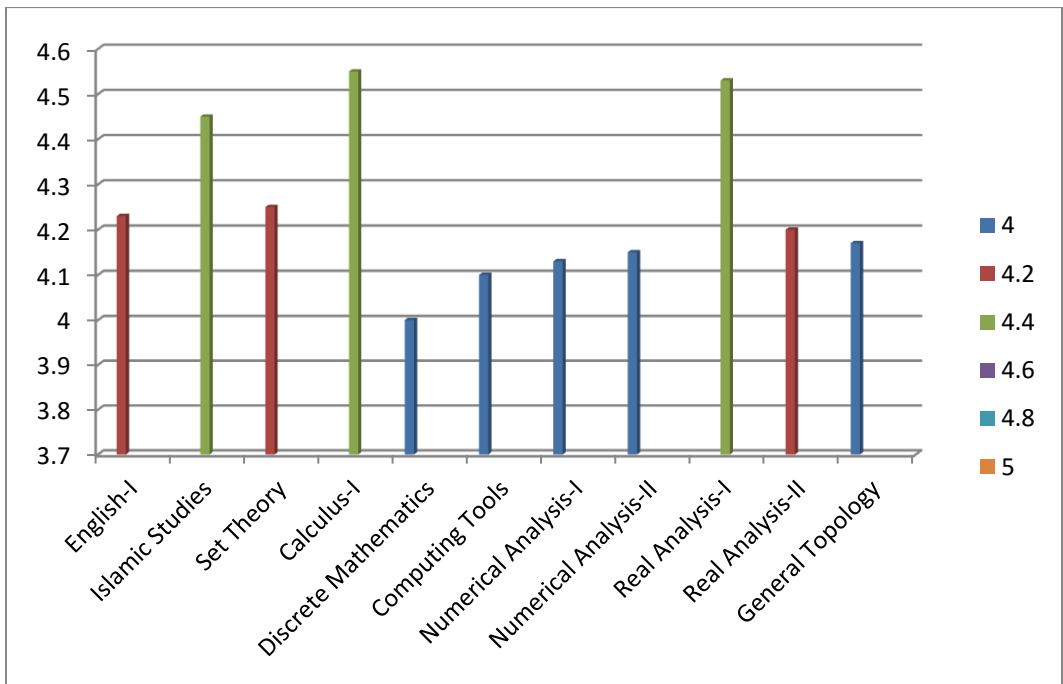
1. Course objectives were clear



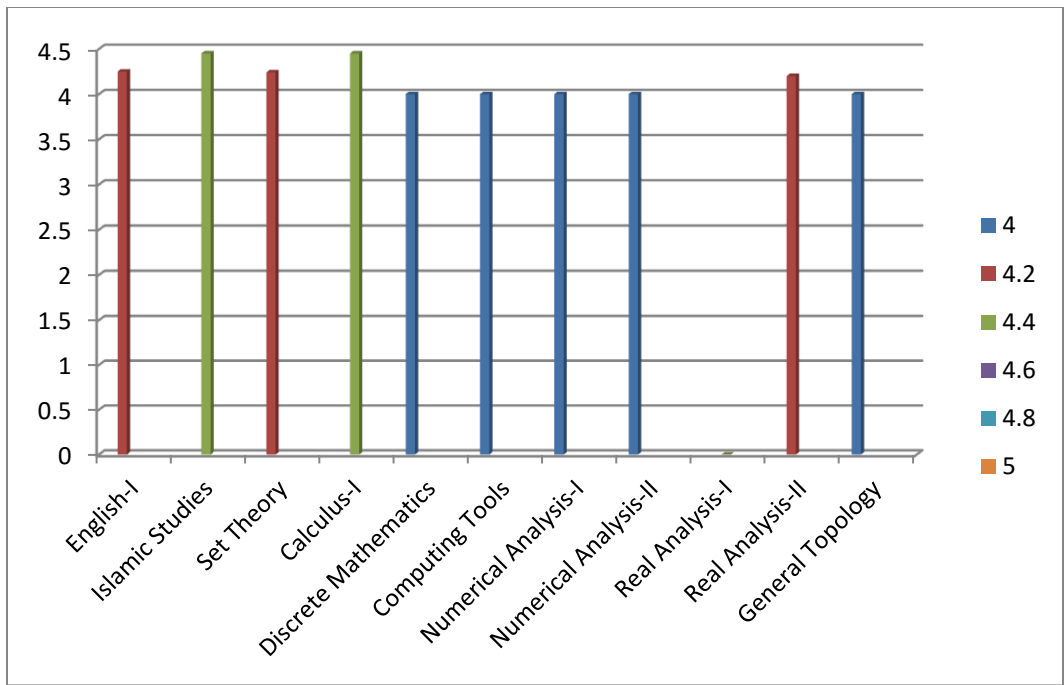
2. The course material is modern and updated



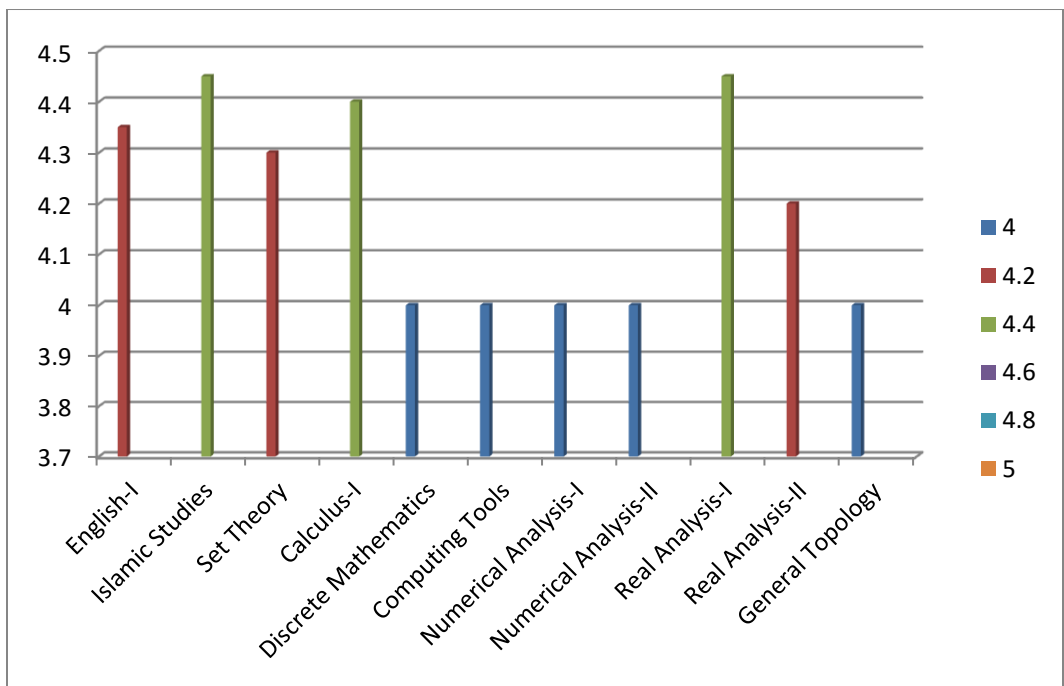
3. The course was manageable



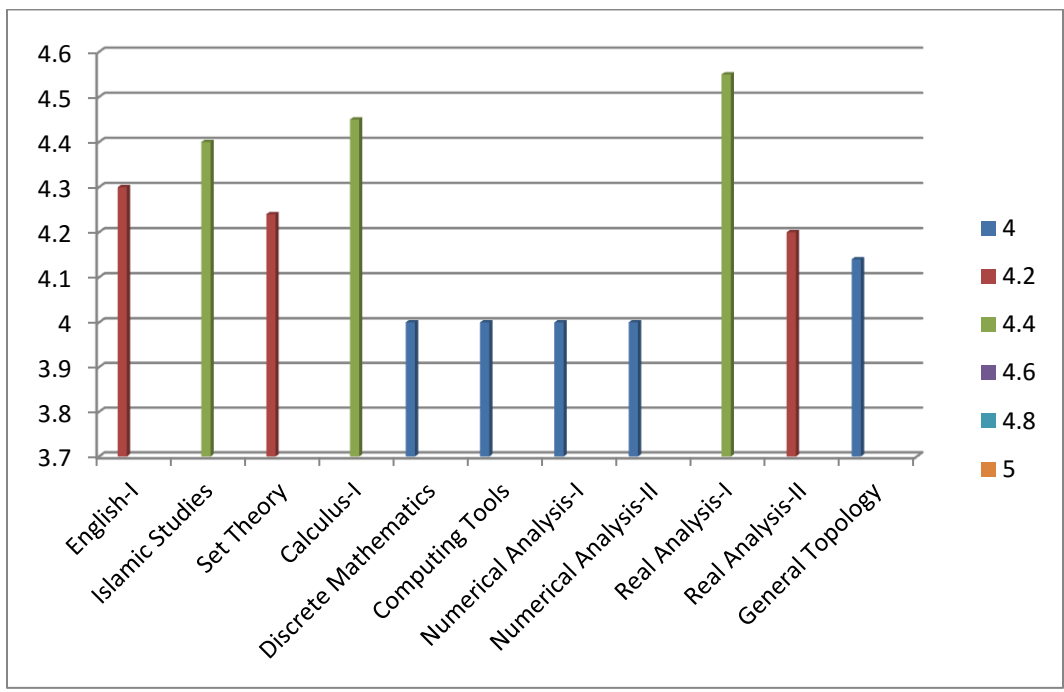
4. Students own attendance



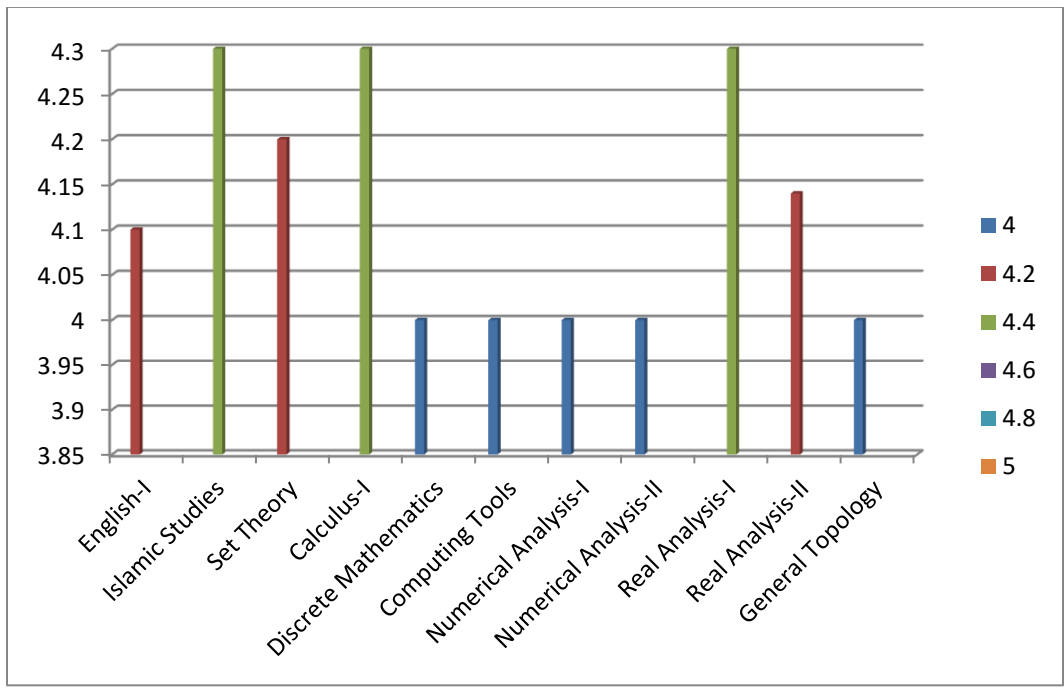
5. Student participation in course



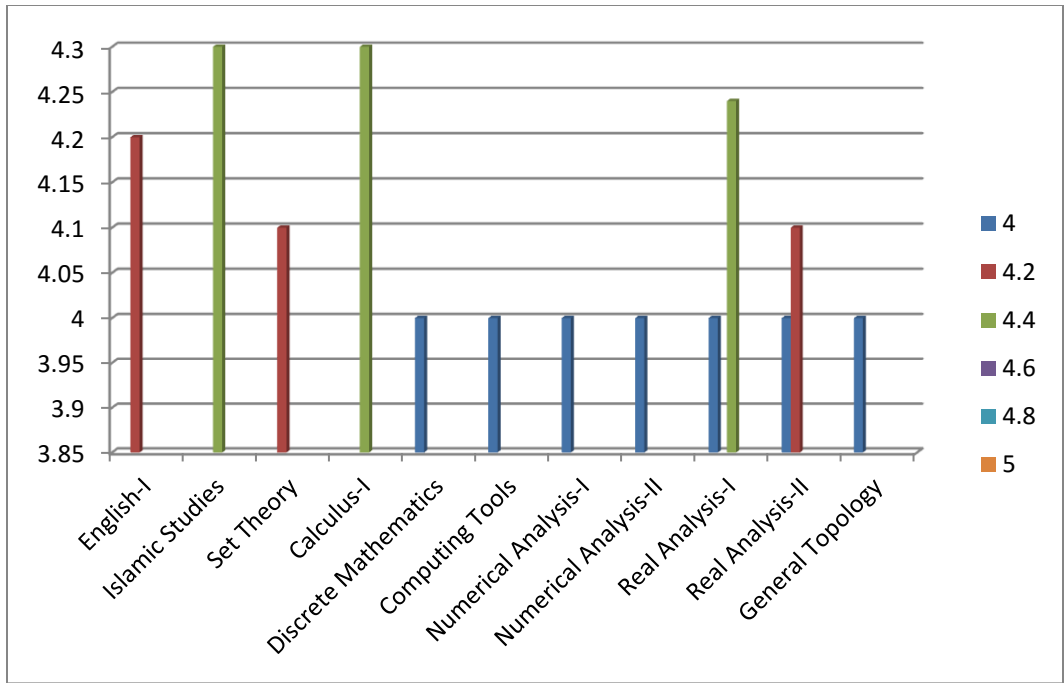
6. Student progress in course



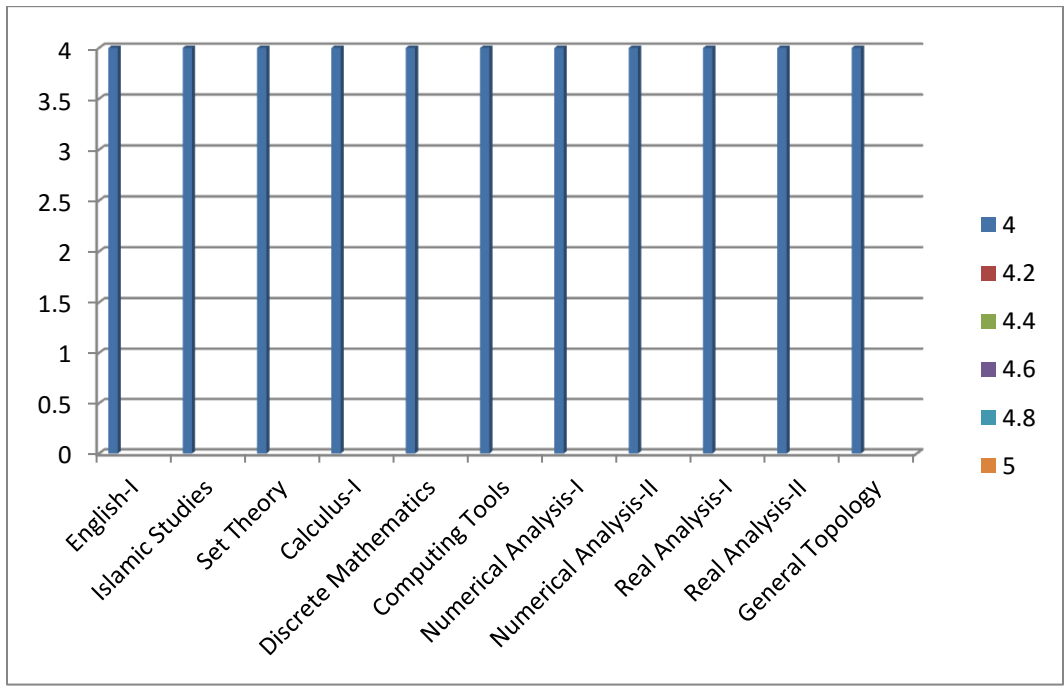
7. Balance of lectures, tutorial, practical's etc.



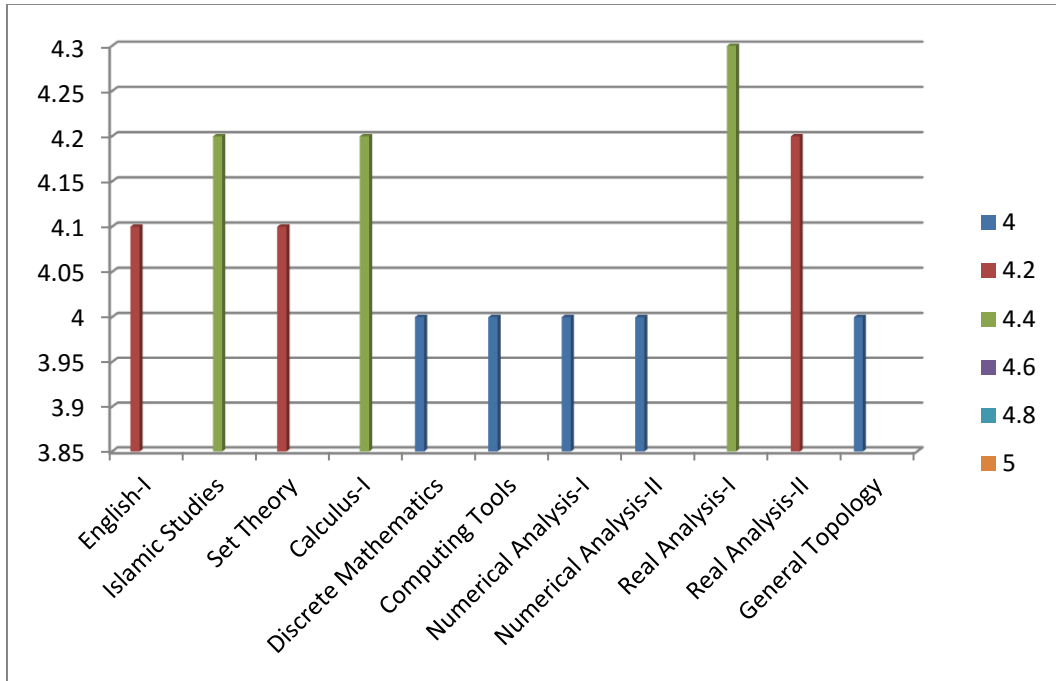
8. Learning materials relevant and useful



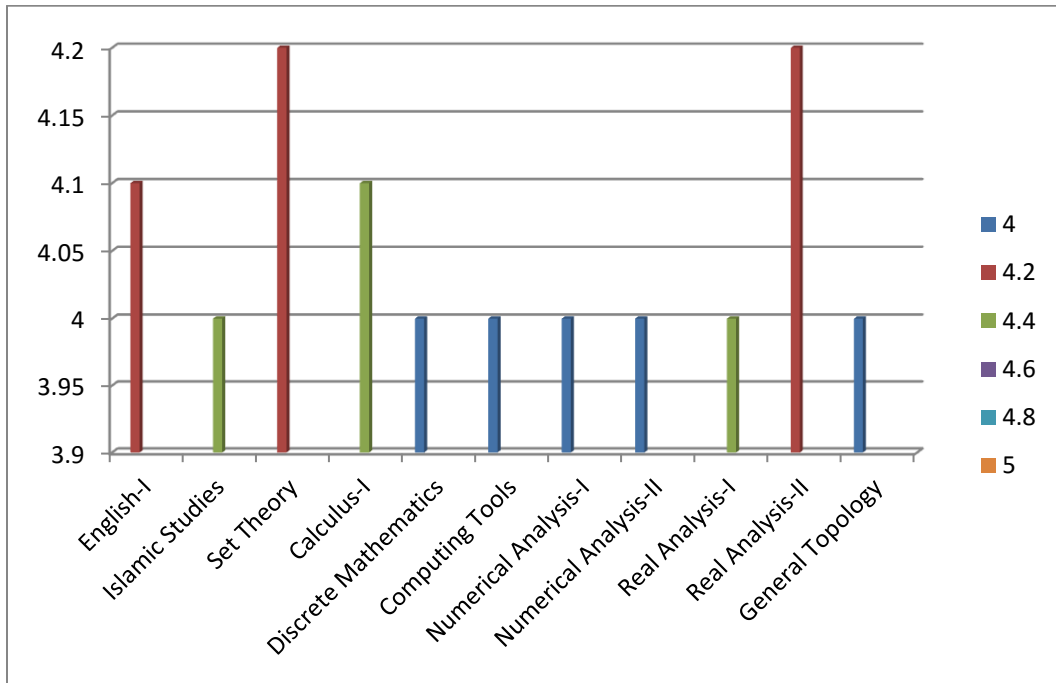
9. Classrooms are satisfactory



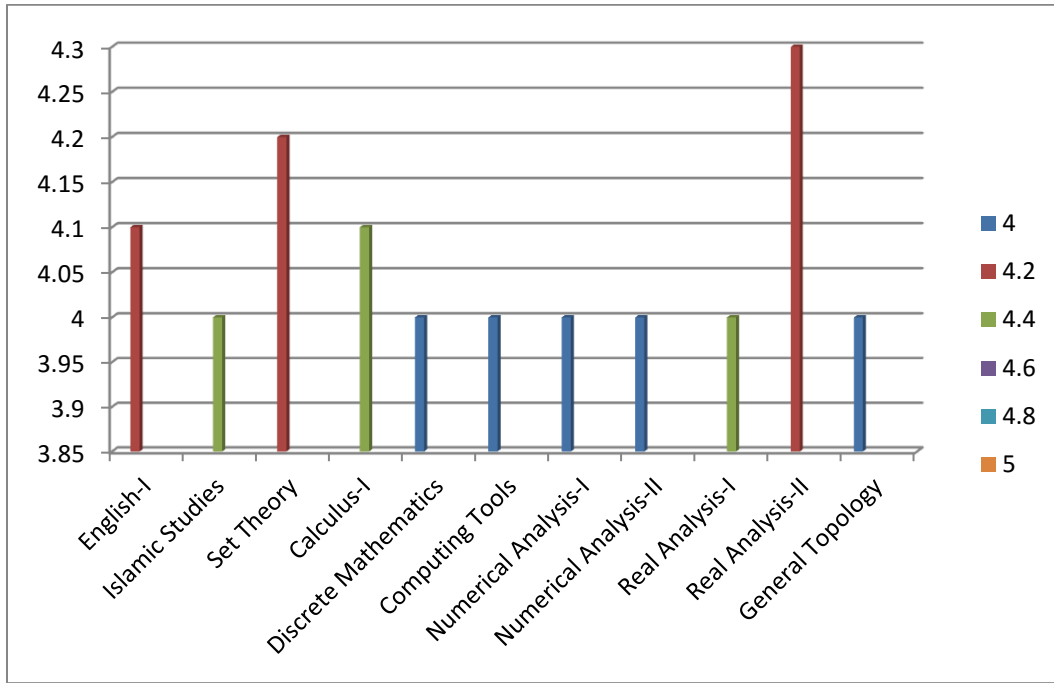
10. Course stimulate my interest



11. Method of assessment was reasonable



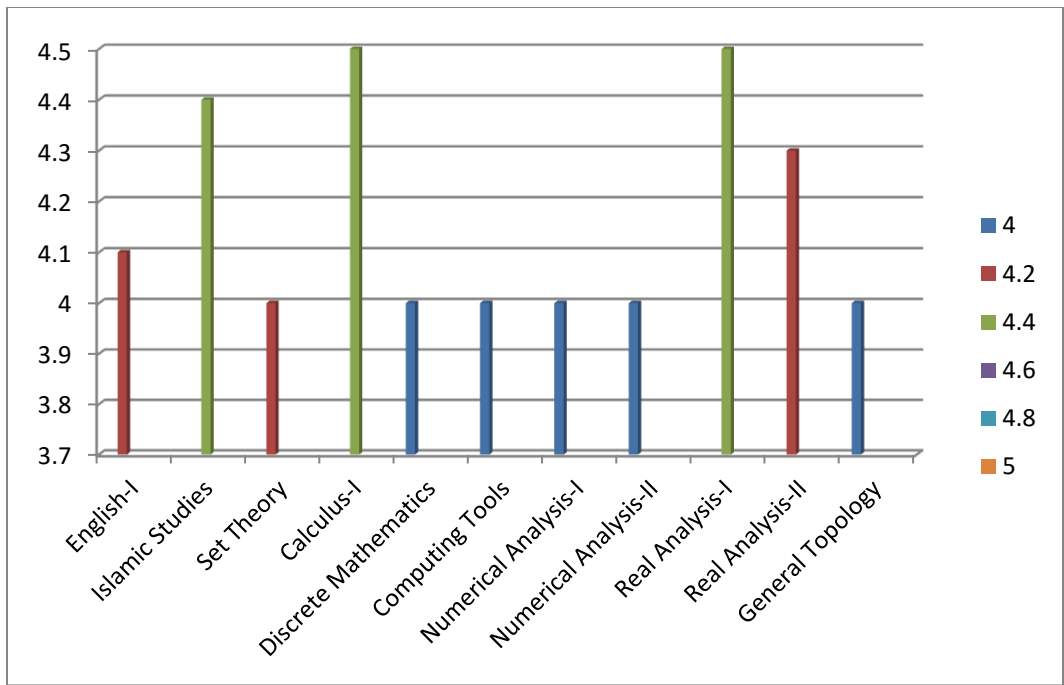
12. The material in the practical's/practice such as assignments, labs, etc. was useful.



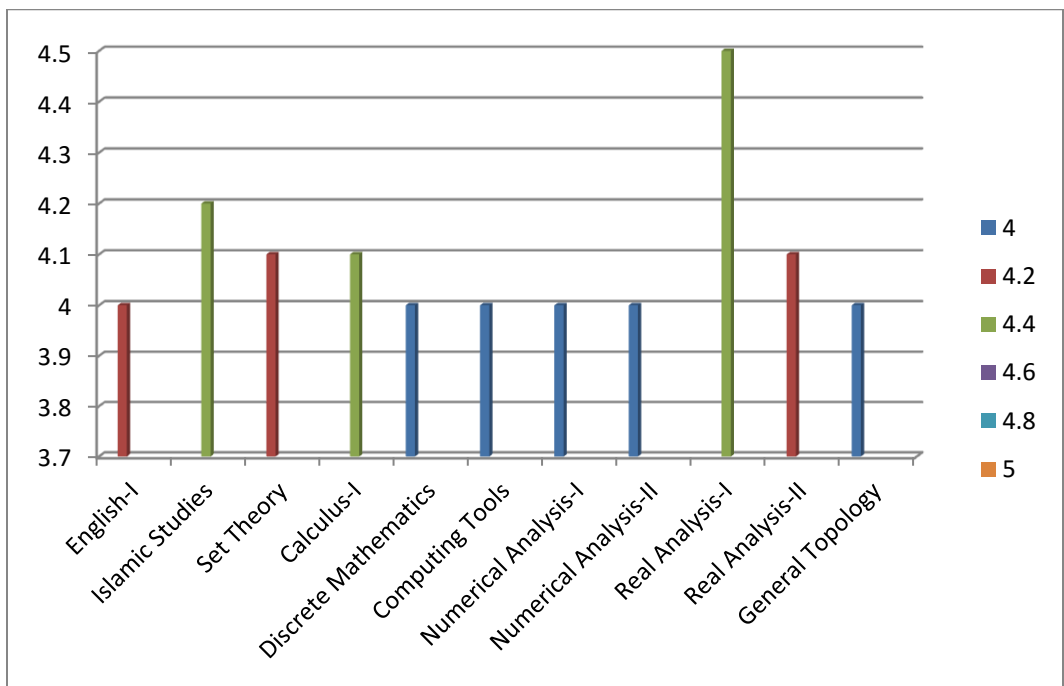
Annexure III

Course Review By the faculty

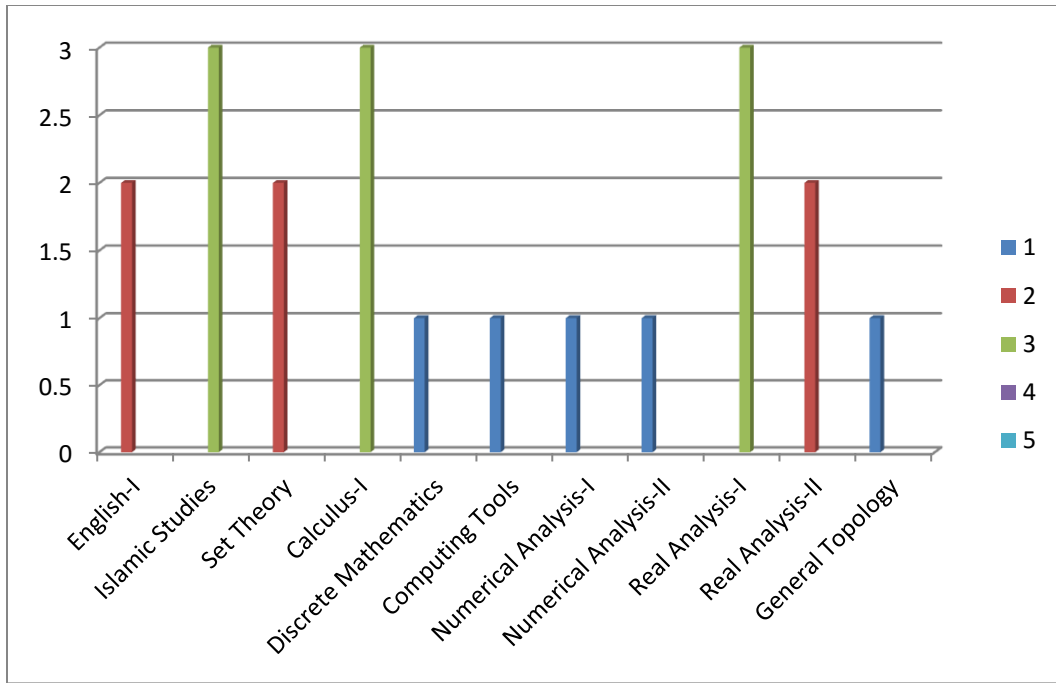
1. Student course evaluation process was appropriate



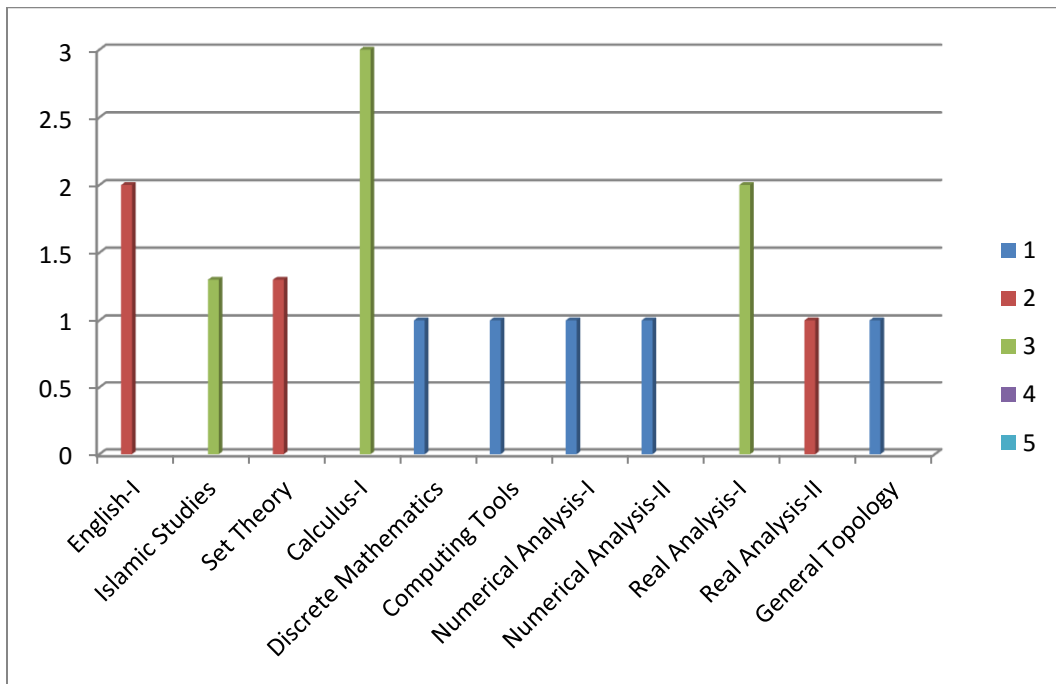
2. Student staff consultant committee



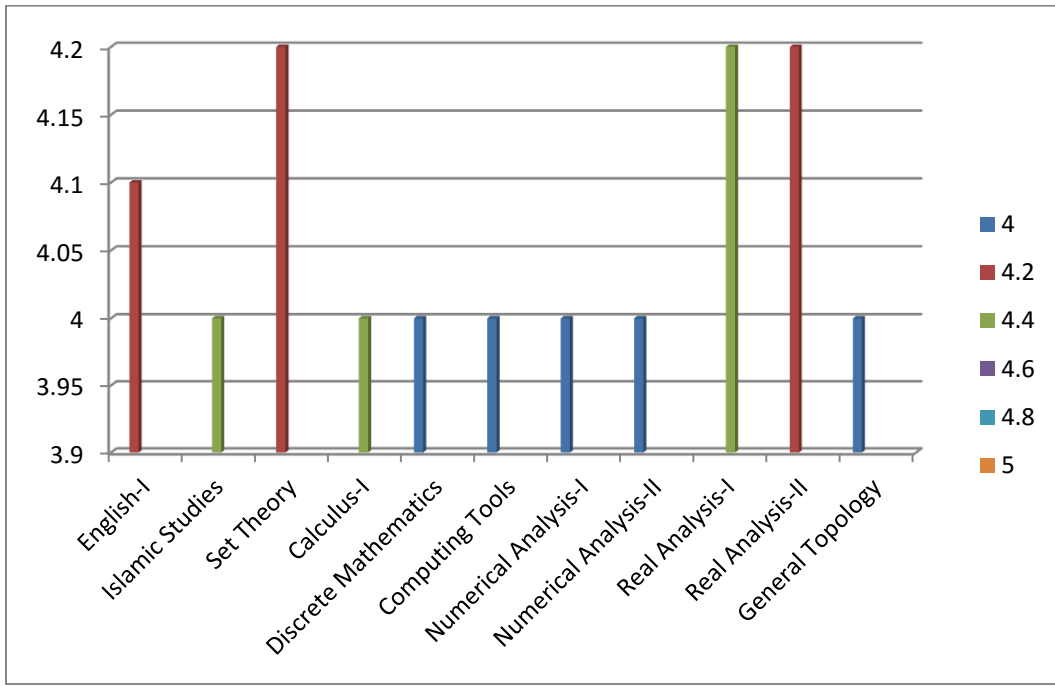
3. Course contents do not match with course objectives



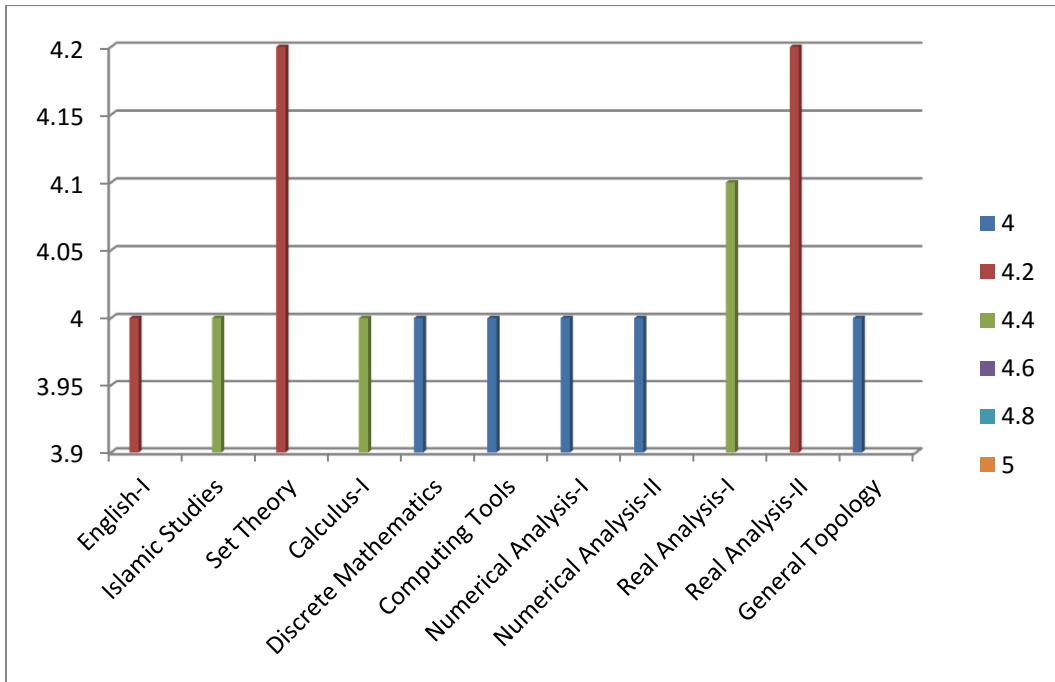
4. Course contents do not comply with HEC curriculum guidelines



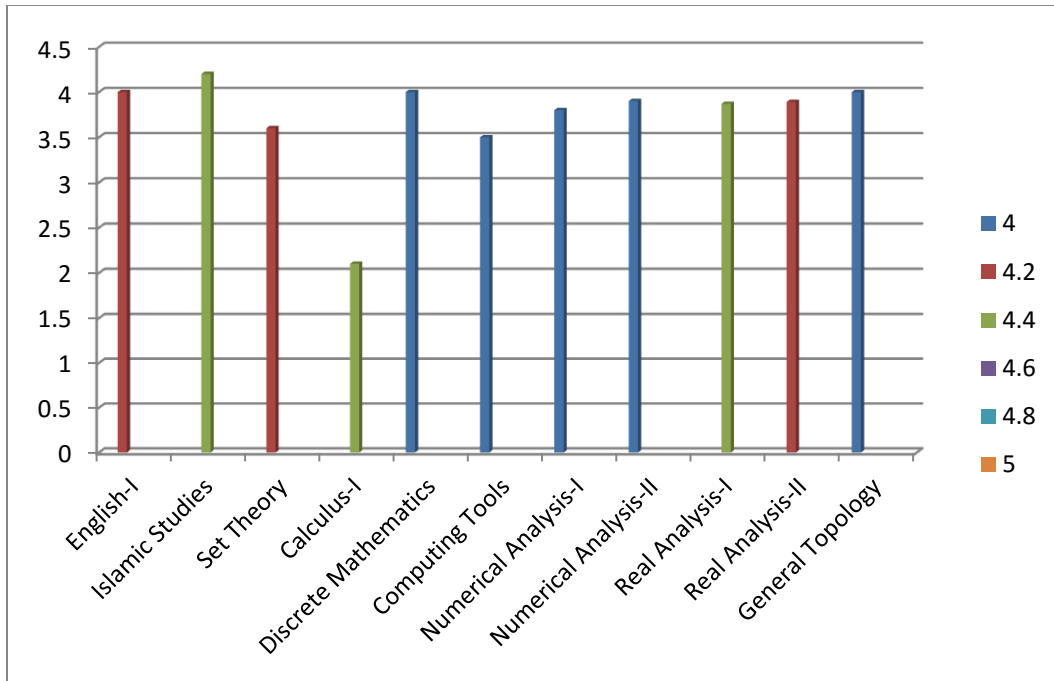
5. Sessional work assessment method is effective and appropriate



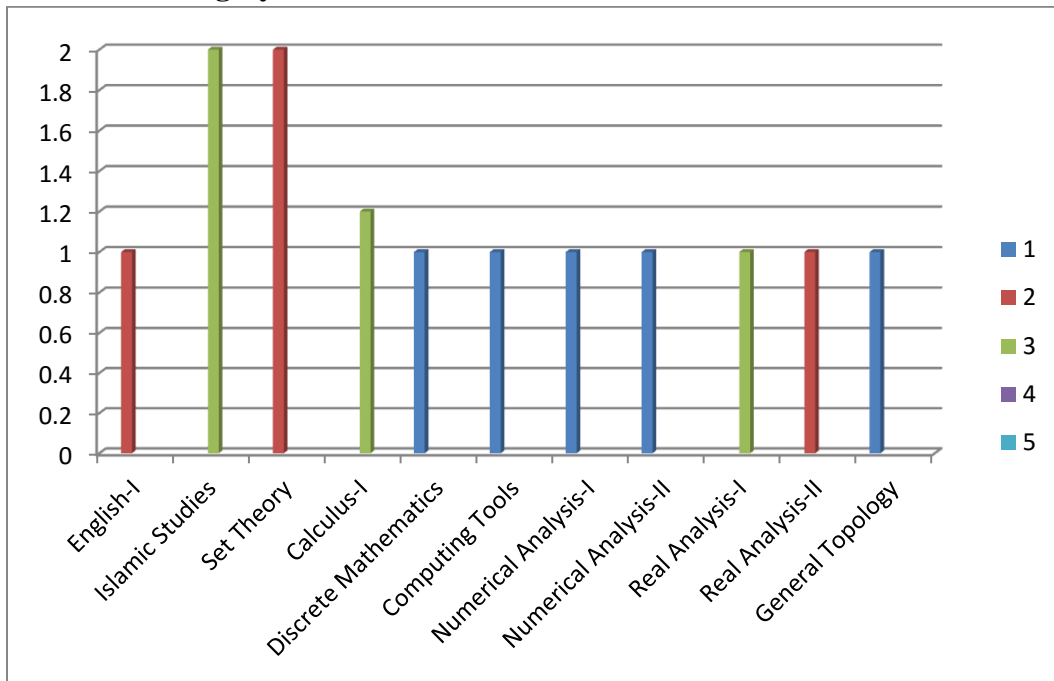
6. Time duration of mid and final term exam is adequate



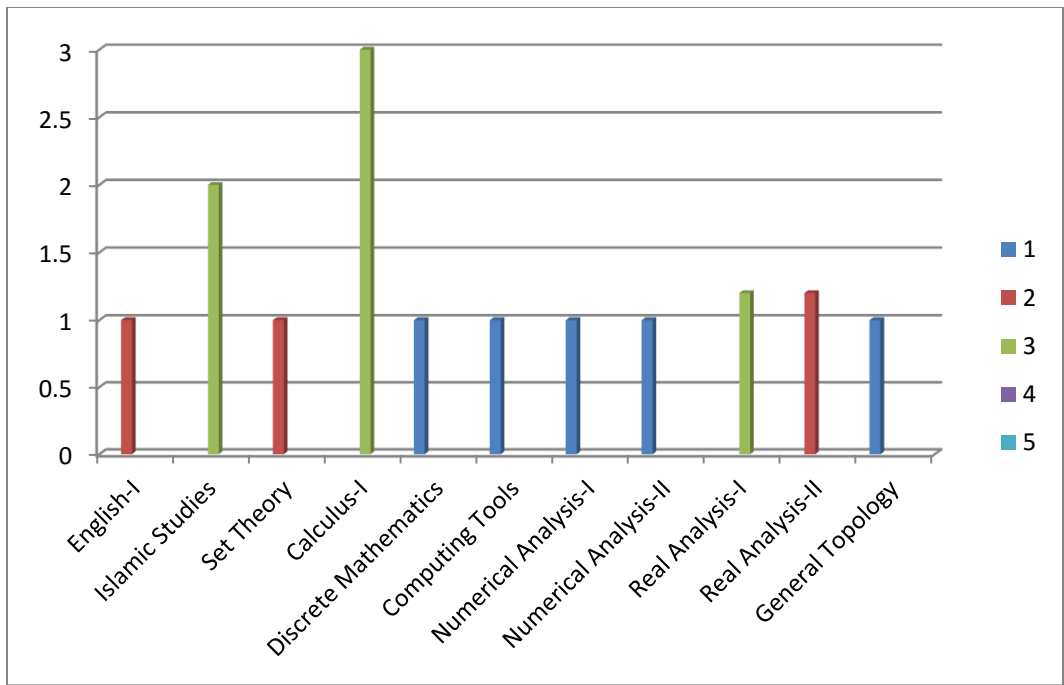
7. Point values of different questions adequate in measuring the student learning



8. Course is lengthy



9. Course contents need major revision



10. The course should be replaced with market oriented course

