Gujrat Institute of Management Sciences

Pir Mehr Ali Shah

Arid Agriculture University, Rawalpindi

Self-Assessment Report

Bachelor of Computer Sciences

(Fall 2018- Fall 2020)

Prepared By:

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Preface

The Gujrat Institute of Management Sciences (GIMS) located in Gujrat, Punjab, is established with the premise of providing affordable quality education to the youth. As an affiliated institute of Pir Mehr Ali Shah Arid Agriculture University Rawalpindi (PMAS-AAUR) ranked at 8th among all Pakistani Universities and 1001+ among the world universities, GIMS aspires to excel in the field of Management Sciences, Computer Sciences, Economics and Statistics. In order to realize our mission, GIMS is committed to providing quality education through highly qualified and motivated faculty, excellent infrastructure and state-of-the-art facilities. This is a young, innovative, and enterprising business school enroots to compete with the foremost management schools of the country as well as to compete with international business schools. The Institute is dedicated to its unique approach (at least in the region) of providing management education based on cutting-edge research and comprehensive training. Unlike conventional academic institutes, GIMS broadens its educational focus in response to new trends in the developing field of management. Based on the social values of integrity, honesty, professional excellence and a broader vision of life, the Institute aims to provide an educational experience that transforms its students into business leaders at par with international managers, executives, and entrepreneurs.

GIMS Vision and Mission

Vision

To become a nationally recognized institute by providing an affordable, high-quality research and sustainable learning environment, while propelling the country's economy forward through professionals.

Mission

Gujrat Institute of Management Sciences aims to inspire, prepare and empower students by providing advanced educational experience to foster critical thinking and promote modern technology to transform individuals into competent professionals with compassionate minds and moral values.

Organizational Structure

The Department of Computer science is a part of the Department of Computer and Information technology whereas, GIMS is one of the affiliated institutes of Arid Agricultural University Rawalpindi. The overall organizational structure is shown in Figure 1.

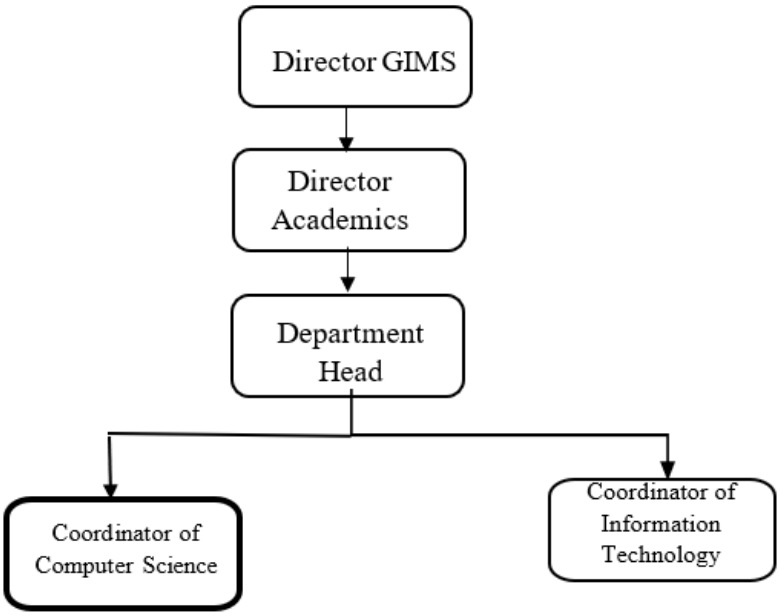


Figure 1: Organization Overall Flow

Program Delivery Mode and Location

The Department of Computer Science offers the BSCS program courses during the weekdays between the hours of 08:30 am and 04:30 pm at the campus, Gujrat. Courses are generally offered in the fall and spring semesters. Selected courses are offered during the summer semester. Most of the courses are delivered in the lecture format and there is a computing component to some core courses. In addition to the lectures, project work is also part of many courses, allowing students to solve complex and open-ended computing problems. A dedicated, six credit hour final year project, is carried out by students during the seventh and eighth semesters.

Quality Enhancement Department (QED)

GIMS, as an affiliated institute, believes in high quality of education and has a stringent system of quality management in place. Several layers of quality enhancement are part of this overall system. The authorities and responsibilities of all layers of the quality enhancement department are covered in GIMS statutes and policies. A Quality Assurance (QA) directorate is functioning at the AAUR level and is responsible for overlooking and ensuring the quality of all programs offered at GIMS. GIMS has established the internal Quality Enhancement Department (QED) in 2015 to carry out periodic audits of degree programs to ensure that they meet the highest standards of quality. The Institute Curriculum Review Committee (ICRC) also function at the institute level and send their reports to AAUR respective Department Board of Studies (DBS) who are responsible for discussing and finalising matters regarding a program's quality, necessary support and data is provided by Academics Branch of the department as well as by the Examination Cell.

Institute Curriculum Review Committee (ICRC)

The ICRC is chaired by Director Academics, GIMS. Its members include Department Head and department faculty members. ICRC is responsible for reviewing the suggested curriculum changes and may approve up to 50% of changes in the curriculum of a program.

CRITERION 1 PROGRAM MISSION, OBJECTIVES AND OUTCOMES

1 Program Mission, Objectives and Outcomes

1.1 Program's Vision and Mission

BSCS Program's Vision

We strive for excellence in teaching and research in the essential and applied aspects of computer science to address a wide range of challenging scientific and societal problems.

BSCS Program's Mission

To foster a culture that invites, develops, and sustains the best existing scientific and technological thinkers by providing them with a world-class education that takes advantage of available resources to inculcate advanced technical knowledge. The department also strives to improve students' verbal and written communication abilities in order to prepare them for successful careers in industry and academia.

Standard 1-1: The program must have documented measurable objectives that support faculty and institution vision mission statements.

1.2 BSCS Program Educational Objectives (PEOs)

Department's main focus of is to develop potential workers to cope with any challenging environment, to develop field values and skillset in our students which is the core demand of the computing market and to take innovative initiatives that lead towards growth of the market as well. Mastering in any discipline requires the ability to think critically, analyze data, make recommendations, and communicate effectively. It demands not only knowledge but also the ability to apply it and idea generation to grow differently with an upward table trend.

The Computer Science program aims at developing the student's intellectual ability, analytical thinking and managerial skills through an appropriate blend of theory and practice. The program assists the students in understanding and developing unique leadership qualities required for a changing and dynamic business environment. The four program educational objectives (PEOs), as given below, form the basis of the Department of the BSCS at GIMS. Within few years of graduation, the students with a bachelor's in computer science are expected to attain the following.

1. To develop critical thinking, problem-solving abilities and competence in computer science resulting in a successful career.
    - To demonstrate an understanding of the core areas of algorithms, theory of computation, operating systems, linguistics of programming languages, and architecture.
    - To demonstrate proficiency in software development, including computational analysis, software designing and the use of tools to apply programming language routines.
    - To apply practical basis theories and practices to a variety of problem-centered solutions, both standard and some unconventional.
2. To develop written and oral communication skills participating in efforts to address societal and technical / business challenges.
3. To develop global awareness and appreciation for cultural diversity and decision-making skills.
4. To enhance their professional development and technical knowledge through continuing education.

Strategic Plan to Achieve Program Objectives

- Develop and deliver a much broader and up-to-date teaching material that is interactive, understandable and reasonable for the award of the degree.
- Formulation and consistent revision of curriculum involving core subjects, elective subjects, specialized areas, technical labs and study tours.
- The conductance of general and specialized lab-work for achieving competence with industrial experience.
- Faculty development programs to affect the learning process of students as well as faculty itself and quality of education.
- Industry and academia collaborate to introduce our students to the practical implementation of various technologies.

1.3 Consistency of Program Educational Objectives with Vision and Mission of GIMS, Vision and Mission of BSCS Program

The Program Educational Objectives (PEOs) of the BS computer science are consistent with the vision and mission of GIMS and the mission of the BS Program.

Table 1: Consistency of PEOs with Vision and Mission of GIMS, Mission of BSCS

PEO	GIMS Vision	GIMS Mission	Program Vision	Program Mission
1 (Computer Science knowledge and competence)	✓	✓	✓	✓
2 (Interpersonal and technical competence)	✓	✓	✓	✓
3 (Environment, society, individual and teamwork)	✓	✓	✓	✓
4 (Research and continuous learning)	✓	✓	✓	✓

1.4 Assessment of Program Educational Objectives (PEO)

A minimum attainment level for each PEO has been defined along with its method of measurement. The measurement of PEO is carried out using indirect assessment tools. A single PEO has multiple performance indicators. The details of performance indicators and their measurement methods are listed in Annexure A and B. In case, multiple survey questions are attributed to the calculation of a single KPI, equal weightage is given to each question. All KPIs related to a PEO must be attained to achieve the relevant PEO.

Table 2: Assessment of Program Educational Objectives

Program Educational Objective		How Measured	When to Measured	Key Performance Indicators (KPI)	Improvement Needed
PEO 1	Develop critical thinking, problem-solving abilities and competence in computer science resulting in a successful career.	Alumni Survey (Q1) Employers Survey (Q1)	End of every academic session After 2 year of student graduation	60% or more of the graduates are employed within one year of graduation. 40% of students are self-employed or seeking higher education within one year of graduation. 60% or more of the employers are in agreement with PEO 1	Industrial linkage and career placement office should be established to increase students' employment ratio.
PEO 2	Develop written and oral communication skills participating in efforts to address societal and technical / business challenges.	Alumni Survey (Q1, Q2, Q8) Employers Survey (Q1)	End of every academic session After 1 year of student graduation	25% or more of the graduates are at middle-level management a few years after graduation 40% or more of the graduates are involved in a project related to societal, technical / business issues. 60% or more employers in agreement with PEO 2.	Quantifiable steps needed to enhance the students technical and critical writing skills.
PEO 3	Develop global awareness and appreciation for cultural diversity and decision-making skills.	Alumni Survey (Q3, Q6) Employers Survey (Q3)	End of every academic session After 1 year of student graduation	30% or more graduates are working with international companies and clients within a few years of graduation. 70% or more employers agreed students are good team players in decision markers in their work field.	Collaboration with international institutes for semester exchange is needed to enhance student's international exposure and working in diverse team.

PEO 4	Enhancing their professional development and technical knowledge through continuing education.	Alumni Survey (Q2, Q3, Q4) Employers Survey (Q3, Q4)	End of every academic session After 1 year of student graduation	50% or more graduates are pursuing higher education in local and international universities. 70% or more of the employers are in agreement with PEO 4	Expect the regular semester and courses, competition, conferences and seminars are needed for students learning outside the classroom.

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.

1.5 Review Process of PEOs

Measurement of the defined PEOs will be carried out by indirect assessment methods after 1-3 years of graduation. Surveys from employers/industry and alumni will be conducted periodically. Graduating student surveys and faculty feedback are being collected. However, the alumni and employers survey will be conducted after 1-3 years of graduation from a computer science class. Since the first class of students passed out in the year 2018, this data will be compiled in the year 2017. Once this process starts, it will be carried out every year as a class of students is graduating every year.

The surveys will be carried out and their results will be compiled by the QED and program's coordinator. An analysis report will be presented by the Director and Director Academics to the review committee comprising the Head of Department, Faculty, QED member and program coordinators. The review committee will recommend improvements/modifications/enhancements (if required) and implementation will be carried out by the department. Figure 2 depicts this process in the form of a flow chart.

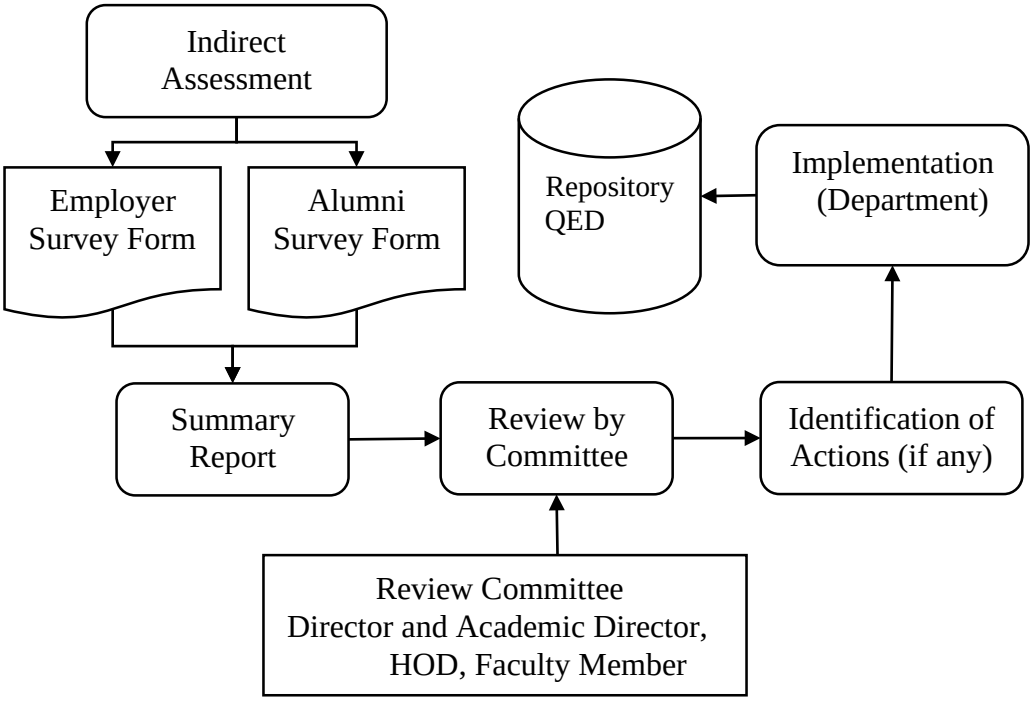


Figure 2: Flowchart of Processes Involved in Establishing and Reviewing PEOs

Table 3: Relationship of Program Outcomes and Objectives

Program Objectives	**Program Outcomes**					
	1	**2**	**3**	**4**	**5**	**6**
1	+++	+++	+++	+++	++	+++
2	++	++	++	+	++	+
3	++	++	++	+++	+++	++
4	+++	++	++	+++	+++	+++

Rating Scale

+ = Moderately Satisfactory

++= Satisfactory

+++= Highly Satisfactory

1.5.1 Graduating Survey

The program's coordinator surveys graduating students about the quality of the program. A survey is also conducted by the department to obtain feedback from the graduates regarding the adequacy of the computer science program. The graduating students survey results are given in Annexure C. The results of alumni survey shows that the 80-90 percent of graduates are fully satisfied with their learning Outcomes.

1.5.2 Alumni Survey

An Alumni survey is also conducted by the department to obtain feedback from the graduates regarding the adequacy of the computer science program. The alumni feedback form is given at Annexure A.

The results of alumni survey shows that the 75 to 85 percent of alumni are fully satisfied with their learning Outcomes. 50 to 55% percent alumni of doing their jobs in various private sectors and 25 percent of alumni are pursing higher education in local and international universities. 20 to 15 percent alumni are looking for employment.

1.5.3 Employer Survey

The program's coordinator conducts a survey of employers for GIMS graduates and to get knowledge about their performance in the field. The employer survey helps to reevaluate the redevelop the program learning objectives. The employer's feedback form is given in Annexure B.

Standard 1-3: The results of program's assessment and the extent to which they are used to improve the program must be documented

1.6 Define and Publish Program Learning Outcomes (PLOs)

Six PLOs have been defined for the bachelor's in mechanical engineering program by keeping in mind the PEOs of the program.

1.6.1 Program Learning Outcomes

At the successful completion of a BSCS degree, the students will be equipped with the following.

1. **Be competent in theoretical and mathematical foundations of computer science and be able to**

    a) Apply fundamental concepts of discrete mathematics such as logic, proofs, set theory, relations, functions, and combinatorics to model computational problems.
    b) Demonstrate the application of abstract structures such as graphs, finite state machines, and recurrence relations to the solution of computer science problems.
    c) Analyze and evaluate the comparative performance of algorithms and data structures appropriate to solving computer science problems.
    d) Apply concepts related to data structures such as lists, stacks, queues, arrays, graphs, trees, heaps, and hashing to design and create algorithms.

2. **Be proficient in one programming language and have a basic knowledge of several others and be able to**

    a) Write efficient solutions to specific problems using an object-oriented programming language.
    b) Write programs in assembly language.
    c) Write programs in a procedural programming language.

3. **Understand the hardware and software architecture of computer systems and be able to**

    a) Explain the function and interaction of computer processing units, memories, and input/output devices.
    b) Define and explain elements of operating systems such as memory management, process scheduling, synchronization and interaction, and input/output devices.
    c) Distinguish computer network elements and understand issues related to computer security.

4. **Demonstrate the ability to participate in professional practices related to software engineering and be able to**

    a) Negotiate, clarify, and document customer requirements.
    b) Apply knowledge of fundamental algorithms, programming language concepts, and design patterns to determine an overall design for a software system Implement a fully specified system.
    c) Test a fully specified system.
    d) Plan and monitor the progress of software projects to ensure on time delivery of a high-quality system.

5. **Be able to communicate effectively about computer science-related topics and be able to**

    a) Deliver an audience-sensitive oral technical presentation.
    b) Write an audience-sensitive technical document.
    c) Contribute effectively to software-based system development teams.

6. **Demonstrate the ability to be responsible practitioners of computer science and understand the social and ethical implications of computing and be able to**

    a) Demonstrate ways in which computers pose new ethical questions or pose new versions of standards, moral problems and dilemmas.
    b) Recognize and, when appropriate, resolve ethical problems or dilemmas related to the computing profession.

1.7 Mapping of PLOs to PEOs

The twelve PLOs, defined for the mechanical engineering program, are mapped to the four PEOs. Mapping of the PLOs to PEOs is given in Table 3.

Table 4: Mapping of Program Learning Objectives and Program Educational Objectives

PLO No	Program Learning Outcome	PEO 1	PEO 2	PEO 3	PEO 4
1	Be competent in theoretical and mathematical foundations of computer science	✓			

2	Be proficient in one programming language and have a basic knowledge of several others		✓		
3	Understand the hardware and software architecture of computer systems		✓		
4	Demonstrate the ability to participate in professional practices related to software engineering		✓		✓
5	Be able to communicate effectively about computer science-related topics	✓			
6	Demonstrate the ability to be responsible practitioners of computer science and understand the social and ethical implications of computing			✓	

1.8 Process of Data Gathering and Results of Assessment of PLOs

PLOs of the mechanical engineering program are evaluated for two purposes.

1. Each student has to pass all six PLOs during the four-year degree program. This requirement is in addition to the GPA requirements of the program. This assessment is referred to as the Student PLO assessment.
2. Each PLO is also assessed to ensure the quality of the computer science program. This assessment is referred to as Program PLO assessment.

1.8.1 Direct Assessment

Direct assessment of PLOs is carried out from the assessment of Course Learning Objectives (CLOs) pertaining to a particular PLO.

1.8.2 Indirect Assessment

Indirect assessment is carried out using graduating student survey, which is collected at the time of graduation. Detail of Annexure C. The graduating student survey results are only used in Program PLO assessments. KPIs for student and program PLO assessment are given in Table 6.

Table 5: Key Performance Indicators for Program Learning Objective Assessment

Program Learning Outcomes 1 to 6	Measurement Tool	Key Performance Indicator	Measurement time
Program PLO assessment	Graduating student survey form *(Indirect)*	Obtained at least 60% of the average score in the graduating student survey based on a score of 3 and greater on the scale of 1 to 5	At the time of graduation
	Attainment via course assessments (CLOs, FYP) *(Direct)*	60% of every cohort attains at least 50% in each PLO	At the end of each academic year and semester
Student PLO assessment	Attainment via course assessments, projects, assignments, etc. *(Direct)*	At least obtain 50% in each PLO upon graduation	At the end of each Semester

1.9 Application of Assessment Results to Develop and Improve the Program Learning Objectives (PLO)

1.9.1 Results of PLO Attainment Obtained Through Direct Assessment

1.9.1.1 PLO 1: Be Competent in Theoretical and Mathematical Foundations of Computer Science.

PLO 1: Be Competent in Theoretical and Mathematical Foundations of Computer Science	
Assessment Method	**Minimum Level of Achievement**
Attainment via direct assessments	60% of the students attain at least 50% of marks
Graduating student survey	Obtained at least 60% of the average score in the PO assessment survey based on a score of 3 and greater on the scale of 1 to 5

Table 6: Courses in Which Student Performance on PLO 1 is Assessed

S No	Semester No.	Course Code	Course Title
1	1	MTH-310	Calculus & Analytical Geometry
2	3	MTH-435	Linear Algebra
3	2	STT-500	Statistics & Probability
4	1	ELE-401	Basic Electronics
5	2	MTH-315	Multivariable Calculus
6	4	MTH-415	Differential Equations
7	7	CS-572	Numerical Analysis

Table 7: Summary of Assessment Results for PLO1.

S No	Cohort	Fall 2018 (%age attainment)	Spring 2019 (%age attainment)	Fall 2019 (%age attainment)	Spring 2020 (%age attainment)	Overall Average (%age attainment)
1	MTH-310	100	83.8	77.7	92	
2	MTH-315	81.2	78.9	71.7	100	
3	MTH-415	95	100	93.0	100	

1.9.1.2 PLO 2: Be Proficient in One Programming Language and Have a Basic Knowledge of Several Others.

PLO 2: Be Proficient in One Programming Language and Have a Basic Knowledge of Several Others	
Assessment Method	**Minimum Level of Achievement**
Attainment via direct assessments	60% of the students attain at least 50% of marks
Graduating student survey	Obtained at least 60% of the average score in the PO assessment survey based on a score of 3 and greater on the scale of 1 to 5

Table 8: Courses in Which Student Performance on PLO 2 is Assessed.

S No	Semester No.	Course Code	Course Title
1	1	CS-323	Programming Fundamentals
2	1	CS-323	Object Oreinted Programming
3	5	CS-432	Modern Programming Languages
4	4	CS-566	Web Technologies
5	4	CS-692	Visual Programming
6	5	CS-666	Web Engineering
7	6	CS-693	Mobile Application Development
8	7	CS-698	Final Year Project-I
9	8	CS-699	Final Year Project-II

Table 9: Summary of Assessment Results for PLO 2

S No	Cohort	Fall 2018 (%age attainment)	Spring 2019 (%age attainment)	Fall 2019 (%age attainment)	Spring 2020 (%age attainment)	Overall Average (%age attainment)
1	CS-323	100	83.8	90.4	83.3	60
2	CS-566	95	95	76.6	100	87.8
3	CS-692	73.6	100	50	70	91.5

1.9.1.3 PLO 3: Understand the Hardware and Software Architecture of Computer Systems.

PLO 3: Understand the Hardware and Software Architecture of Computer Systems	
Assessment Method	**Minimum Level of Achievement**
Attainment via direct assessments	60% of the students attain at least 50% of marks

Graduating student survey	Obtained at least 60% of the average score in the PO assessment survey based on a score of 3 and greater on the scale of 1 to 5

Table 10: Courses in Which Student Performance on PLO 3 is Assessed

S No	Semester No.	Course Code	Course Title
1	2	CS-430	Digital Logic Design
2	3	CS-530	Computer Oraganization & Assembly Language
3	4	CS-542	Analysis of Algorithms
4	5	CS-536	Theory of Automata & Formal Languages
5	7	CS-636	Compiler Construction
6	6	CS-687	Parallel & Distributed Computing
7	3	CS-532	Computer Architecture

Table 11: Summary of Assessment Results for PLO 2

S No	Cohort	Fall 2018 (%age attainment)	Spring 2019 (%age attainment)	Fall 2019 (%age attainment)	Spring 2020 (%age attainment)	Overall Average (%age attainment)
1	CS-542	100	100	26	100	60
2	CS-536	90	83.3	91.7	95	87.8
3	CS-636	90	95	--	85	91.5

1.9.1.4 PLO 4: Demonstrate the Ability to Participate in Professional Practices Related to Software Engineering

PLO 4: Demonstrate the Ability to Participate in Professional Practices Related to Software Engineering	
Assessment Method	**Minimum Level of Achievement**
Attainment via direct assessments	60% of the students attain at least 50% of marks

Graduating student survey	Obtained at least 60% of the average score in the PO assessment survey based on a score of 3 and greater on the scale of 1 to 5

Table 12: Courses in Which Student Performance on PLO 4 is Assessed

S No	Semester No.	Course Code	Course Title
1	3	CS-453	Software Engineering
2	7	CS-553	Object Oriented Analysis & Design
3	6	CS-685	Human Computer Interaction

Table 13: Summary of Assessment Results for PLO 4.

S No	Cohort	Fall 2018 (%age attainment)	Spring 2019 (%age attainment)	Fall 2019 (%age attainment)	Spring 2020 (%age attainment)	Overall Average (%age attainment)
1	CS-453	95	65.7	70	85	60
2	CS-553	96.7	84	--	80	87.8
3	CS-685	-	84	80	100	91.5

1.9.1.5 PLO 5: Be Able to Communicate Effectively About Computer Science-related Topics

PLO 5: Be Able to Communicate Effectively About Computer Science-related Topics.	
Assessment Method	**Minimum Level of Achievement**
Attainment via direct assessments	60% of the students attain at least 50% of marks
Graduating student survey	Obtained at least 60% of the average score in the PO assessment survey based on a score of 3 and greater on the scale of 1 to 5

Table 14: Courses in Which Student Performance on PLO 5 is Assessed

S No	Semester No.	Course Code	Course Title
1	1	CS-583	Operating System
2	2	CS-400	Database Systems
3	5	CS-497	Computer Networks
4	7	CS-497	Information Security
5	7	CS-632	Artificial Intelligence

Table 15: Summary of Assessment Results for PLO 5.

S No	Cohort	Fall 2018 (%age attainment)	Spring 2019 (%age attainment)	Fall 2019 (%age attainment)	Spring 2020 (%age attainment)	Overall Average (%age attainment)
1	CS-583	100	95	70	100	60
2	CS-497	100	95	100	95	87.8
3	CS-497	100	--	93	91	91.5

1.9.1.6 PLO 6: Demonstrate the Ability to be Responsible Practitioners of Computer Science and Understand the Social and Ethical Implications of Computing.

PLO 6: Demonstrate the Ability to be Responsible Practitioners of Computer Science and Understand the Social and Ethical Implications of Computing.	
Assessment Method	**Minimum Level of Achievement**
Attainment via direct assessments	60% of the students attain at least 50% of marks
Graduating student survey	Obtained at least 60% of the average score in the PO assessment survey based on a score of 3 and greater on the scale of 1 to 5

Table 16: Courses in Which Student Performance on PLO 6 is Assessed

S No	Semester No.	Course Code	Course Title
1	2	ENG-325	Communication & Presentation Skills
2	7	SSH-307	Professional Practices
3	3	MGT-322	Financial Accounting
4	4	MGT-351	Introduction to Marketing
5	5	MGT-411	Introduction to Management
6	7	MGT-515	Introduction to Human Resource Management
7	3	PSY-600	Psychology

Table 17: Summary of Assessment Results for PLO 6

S No	Cohort	Fall 2018 (%age attainment)	Spring 2019 (%age attainment)	Fall 2019 (%age attainment)	Spring 2020 (%age attainment)	Overall Average (%age attainment)
1	SSH-307	95	--	86	90	60
2	MGT-322	95	95	100	100	87.8
3	MGT-351	--	100	90	100	91.5

Standard 1-4: The department must access its overall performance periodically using quantifiable measures.

1.10 Admission Response and Percentage Admitted

Student's response towards Computer science at GIMS has been encouraging as can be seen from the final merit list is given in Table 18.

Table 18: Student Admissions and Enrolments

Sr. No.	Intake Batch	Total Admissions offered	Total Students Admitted	Present Strength	No. of Section(s)
1	Fall 2018	100	82		2
2	Spring 2019	50	31		1
3	Fall 2019	100	83		2
4	Spring 2020	50	21		1

1.10.1 Intake

The student intake for the mechanical engineering program is shown in Table 20.

Table 19: Student Intake for Computer Science Program

Batch	Sections	No. of Students
Fall 2018 Entry	Section A	40
	Section B	42
Spring 2019 Entry	Section A	31
Fall 2019 Entry	Section A	42
	Section B	41
Spring 2020 Entry	Section A	50
Total		**246**

Table 20: Number of Students Enrolled in BSCS in Last 5 Years

Year	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Students	46	125	142	257	400	379

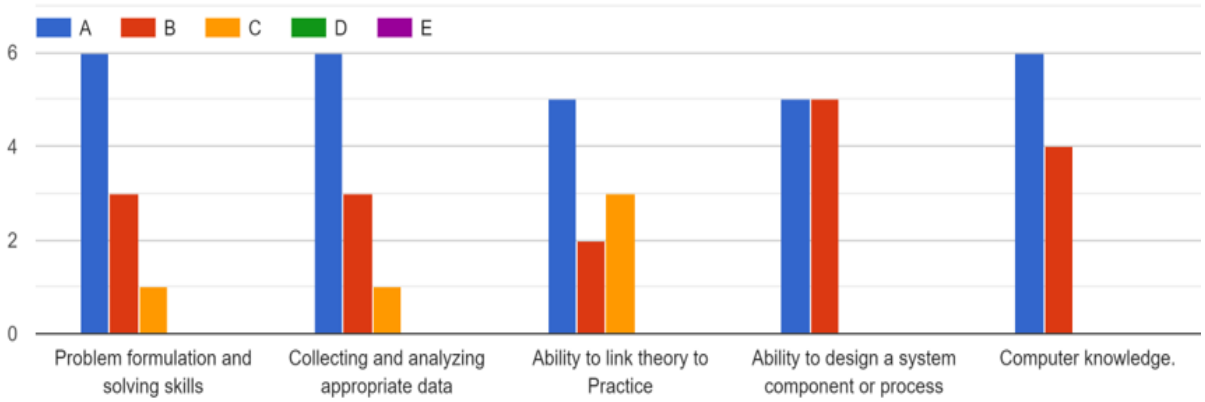
1.11 Alumni Survey

A survey has been conducted and feedback has been collected on Performa 8 from the employees where students have BSCS from GIMS are working. The results are summarized in figure given below

Performa: 8 Employer Survey
(Batch: 2015-2019)

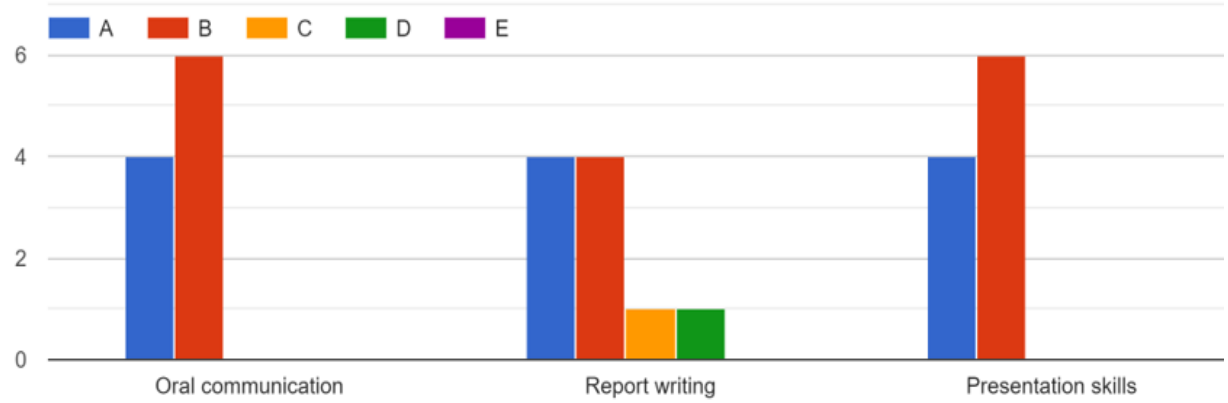
1. Rank Employee's Knowledge

A: Excellent B: Very good C: Good D: Fair E: Poor



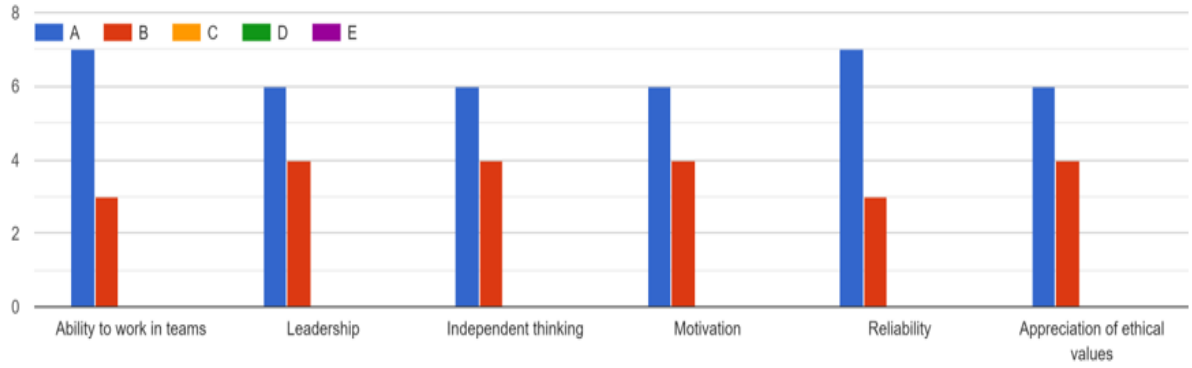
2. **Rank Employee's Communication Skills**

A: Excellent B: Very good C: Good D: Fair E: Poor



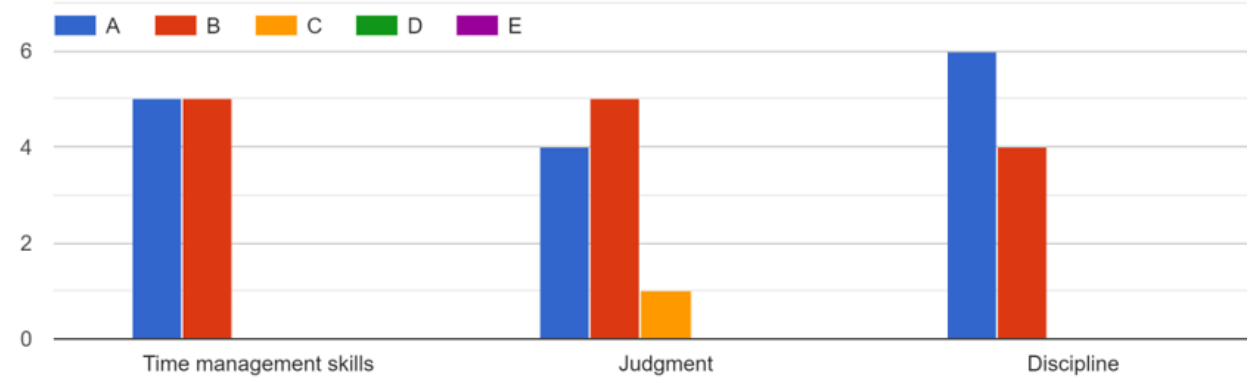
3. Rank Employee's Interpersonal Skills

A: Excellent B: Very good C: Good D: Fair E: Poor



4. Rank Employee's Work skills

A: Excellent B: Very good C: Good D: Fair E: Poor



1.12 Teacher and Course Assessment

1.12.1 Teacher Evaluation

At the end of every semester teacher evaluation is conducted from the students to assess the teacher/ instructor performance and instructor attitude towards the student and classroom learning from students' perspective. Some of the teacher evaluation results are presented here. The results of teacher evaluation are shared with teacher and get feedback from teachers. In some case where QED and Department found unusual result and significant comment that shows the teacher and student had serious conflict regarding the fair assessment, classroom learning and teacher attitude towards students. QED had meeting with concerned teacher to address the issues.

1.12.2 Course Evaluation

At the end of every semester course evaluation is conducted from the students to assess the learning outcomes of course. Some of the course evaluation results are presented here. The results of course evaluation is shared with teacher and get feedback from teachers. The results of course evaluations help to identify how much the course learning objectives were achieved.

Instructor Name: Mr. Bilal Mazhar
Course: CS-692 Visual Programming

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	97%	3%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	97%	3%	0%	0%	0%
The instructor has completed the whole course.	100%	0%	0%	0%	0%
The instructor provides additional material apart from the textbook.	100%	0%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistan's context.	97%	3%	0%	0%	0%
The instructor communicates the subject matter effectively.	97%	3%	0%	0%	0%
The instructor shows respect toward students and encourages class participation.	97%	0%	3%	0%	0%
The instructor maintains an environment that is conducive to learning.	93%	7%	0%	0%	0%
The instructor arrives on time in class.	93%	7%	0%	0%	0%
The instructor leaves on time.	90%	10%	0%	0%	0%
The instructor returns the graded scripts in a reasonable amount of time.	97%	3%	0%	0%	0%
The instructor was available during the specified office hours after class for consultations.	97%	3%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	97%	3%	0%	0%	0%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	93%	7%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	93%	7%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	93%	7%	0%	0%	0%
The course material is modern and updated.	90%	10%	0%	0%	0%

Instructor Name: Mr. Gul Sher Ali

Course: CS-536 Theory of Automata and Formal Languages

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	76%	18%	6%	0%	0%
The instructor demonstrates knowledge of the subject.	76%	18%	6%	0%	0%
The instructor has completed the whole course.	82%	18%	0%	0%	0%
The instructor provides additional material apart from the textbook.	82%	18%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistan's context.	76%	18%	6%	0%	0%
The instructor communicates the subject matter effectively.	88%	12%	0%	0%	0%
The instructor shows respect toward students and encourages class participation.	82%	18%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	76%	18%	6%	0%	0%
The instructor arrives on time in class.	88%	6%	0%	6%	0%
The instructor leaves on time.	94%	6%	0%	0%	0%
The instructor returns the graded scripts in a reasonable amount of time.	76%	18%	6%	0%	0%
The instructor was available during the specified office hours after class for consultations.	82%	18%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	88%	12%	0%	0%	0%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	82%	18%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	82%	18%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	88%	12%	0%	0%	0%
The course material is modern and updated.	82%	18%	0%	0%	0%

Instructor Name: Ms. Mehwashma Amir
Course: CS-582 Operating System Concepts

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	100%	0%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	100%	0%	0%	0%	0%
The instructor has completed the whole course.	100%	0%	0%	0%	0%
The instructor provides additional material apart from the textbook.	100%	0%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistan's context.	97%	3%	0%	0%	0%
The instructor communicates the subject matter effectively.	97%	3%	0%	0%	0%
The instructor shows respect toward students and encourages class participation.	97%	3%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	97%	3%	0%	0%	0%
The instructor arrives on time in class.	97%	3%	0%	0%	0%
The instructor leaves on time.	100%	0%	0%	0%	0%
The instructor returns the graded scripts in a reasonable amount of time.	94%	6%	0%	0%	0%
The instructor was available during the specified office hours after class for consultations.	91%	9%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	97%	3%	0%	0%	0%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	94%	6%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	97%	3%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	100%	0%	0%	0%	0%
The course material is modern and updated.	94%	6%	0%	0%	0%

Instructor Name: Mr. Shahan Arif
Course: CS-432 Modern Programming Languages

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	75%	18%	0%	0%	8%
The instructor demonstrates knowledge of the subject.	70%	13%	10%	0%	8%
The instructor has completed the whole course.	78%	15%	0%	0%	8%
The instructor provides additional material apart from the textbook.	70%	18%	5%	0%	8%
The instructor gives citations regarding current situations with reference to Pakistan's context.	68%	10%	13%	0%	10%
The instructor communicates the subject matter effectively.	75%	15%	3%	0%	8%
The instructor shows respect toward students and encourages class participation.	65%	15%	5%	5%	10%
The instructor maintains an environment that is conducive to learning.	70%	15%	5%	3%	8%
The instructor arrives on time in class.	75%	15%	0%	3%	8%
The instructor leaves on time.	78%	13%	0%	0%	10%
The instructor returns the graded scripts in a reasonable amount of time.	70%	15%	5%	3%	8%
The instructor was available during the specified office hours after class for consultations.	73%	15%	3%	0%	10%
The Subject matter presented in the course has increased your knowledge of the subject.	68%	13%	5%	5%	10%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	73%	13%	3%	3%	10%
The course integrates theoretical course concepts with real-world applications.	75%	10%	8%	0%	8%
The assignments and exams covered the materials presented in the course.	75%	10%	5%	3%	8%
The course material is modern and updated.	70%	15%	5%	0%	10%

Instructor Name: Mr. Abdul Sittar
Course: CS-542 Analysis of Algorithms

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	87%	10%	0%	0%	3%
The instructor demonstrates knowledge of the subject.	81%	16%	0%	3%	0%
The instructor has completed the whole course.	84%	10%	3%	3%	0%
The instructor provides additional material apart from the textbook.	74%	16%	3%	3%	3%
The instructor gives citations regarding current situations with reference to Pakistan's context.	87%	10%	0%	3%	0%
The instructor communicates the subject matter effectively.	81%	13%	3%	3%	0%
The instructor shows respect toward students and encourages class participation.	94%	6%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	81%	13%	0%	3%	3%
The instructor arrives on time in class.	90%	3%	3%	0%	3%
The instructor leaves on time.	87%	10%	0%	0%	3%
The instructor returns the graded scripts in a reasonable amount of time.	84%	16%	0%	0%	0%
The instructor was available during the specified office hours after class for consultations.	90%	6%	0%	3%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	84%	10%	3%	0%	3%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	81%	13%	3%	3%	0%
The course integrates theoretical course concepts with real-world applications.	87%	10%	0%	3%	0%
The assignments and exams covered the materials presented in the course.	84%	13%	3%	0%	0%
The course material is modern and updated.	81%	16%	0%	3%	0%

Instructor Name: Mr. Ch. Nauman Bin Nasir
Course: CS-733 Artificial Intelligence

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	73%	18%	0%	9%	0%
The instructor demonstrates knowledge of the subject.	73%	18%	0%	9%	0%
The instructor has completed the whole course.	73%	9%	9%	9%	0%
The instructor provides additional material apart from the textbook.	73%	9%	0%	9%	9%
The instructor gives citations regarding current situations with reference to Pakistani context.	73%	9%	0%	9%	9%
The instructor communicates the subject matter effectively.	73%	18%	0%	9%	0%
The instructor shows respect towards students and encourages class participation.	73%	18%	0%	9%	0%
The instructor maintains an environment that is conducive to learning.	73%	18%	0%	9%	0%
The instructor start zoom lecture/class on time.	73%	18%	0%	9%	0%
The instructor ends the zoom lecture/class on time.	73%	18%	0%	9%	0%
The instructor has completed all classes regularly.	73%	9%	9%	9%	0%
The instructor posts the assignments/quizzes on time and give reasonable time to complete the assigned assignments/quizzes.	73%	9%	9%	9%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	73%	18%	0%	9%	0%
The instructor was available during the specified hours on WhatsApp/Zoom/LMS/Google classroom for consultation.	73%	18%	0%	9%	0%
The course integrates theoretical course concepts with real-world applications.	73%	9%	0%	9%	9%
The assignments and exams covered the materials presented in the course.	73%	9%	9%	9%	0%
The course material is modern and updated	73%	18%	0%	9%	0%

Instructor Name: Mr. Bilal Mazhar
Course: CS-323 Programming Fundamentals

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	88%	12%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	96%	4%	0%	0%	0%
The instructor has completed the whole course.	96%	4%	0%	0%	0%
The instructor provides additional material apart from the textbook.	88%	8%	4%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistani context.	84%	16%	0%	0%	0%
The instructor communicates the subject matter effectively.	92%	8%	0%	0%	0%
The instructor shows respect towards students and encourages class participation.	100%	0%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	92%	8%	0%	0%	0%
The instructor start zoom lecture/class on time.	88%	4%	8%	0%	0%
The instructor ends the zoom lecture/class on time.	88%	8%	4%	0%	0%
The instructor has completed all classes regularly.	92%	8%	0%	0%	0%
The instructor posts the assignments/quizzes on time and give reasonable time to complete the assigned assignments/quizzes.	88%	12%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	92%	8%	0%	0%	0%
The instructor was available during the specified hours on WhatsApp/Zoom/LMS/Google classroom for consultation.	88%	12%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	92%	8%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	92%	8%	0%	0%	0%
The course material is modern and updated	92%	8%	0%	0%	0%

Instructor Name: Mr. Faizan Ul Mustafa
Course: CS-565 Web Design and Development

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	100%	0%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	100%	0%	0%	0%	0%
The instructor has completed the whole course.	100%	0%	0%	0%	0%
The instructor provides additional material apart from the textbook.	100%	0%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistani context.	100%	0%	0%	0%	0%
The instructor communicates the subject matter effectively.	100%	0%	0%	0%	0%
The instructor shows respect towards students and encourages class participation.	100%	0%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	100%	0%	0%	0%	0%
The instructor start zoom lecture/class on time.	100%	0%	0%	0%	0%
The instructor ends the zoom lecture/class on time.	100%	0%	0%	0%	0%
The instructor has completed all classes regularly.	100%	0%	0%	0%	0%
The instructor posts the assignments/quizzes on time and give reasonable time to complete the assigned assignments/quizzes.	88%	0%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	100%	0%	0%	0%	0%
The instructor was available during the specified hours on WhatsApp/Zoom/LMS/Google classroom for consultation.	100%	0%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	100%	0%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	100%	0%	0%	0%	0%
The course material is modern and updated	100%	0%	0%	0%	0%

Instructor Name: Mr. Farhat Mehmood
Course: CS-684 Network Management and Security

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	94%	6%	0%	0%	0%
The course workload was manageable.	94%	6%	0%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	94%	6%	0%	0%	0%
The approximate level of your attendance during the whole course.	94%	6%	0%	0%	0%
I participated actively in the course.	94%	6%	0%	0%	0%
I think I have made progress in this course	94%	6%	0%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	94%	6%	0%	0%	0%
The learning and teaching methods encouraged participation.	94%	6%	0%	0%	0%
The overall environment in the class was conducive to learning.	94%	6%	0%	0%	0%
The classrooms were satisfactory.	94%	6%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	94%	3%	3%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	94%	3%	3%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	94%	6%	0%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	94%	6%	0%	0%	0%
The course stimulated my interest and thought about the subject area.	94%	6%	0%	0%	0%
The course was appropriate with reference to current technologies.	94%	6%	0%	0%	0%
Ideas and concepts were presented clearly.	94%	6%	0%	0%	0%
The method of assessment were reasonable.	97%	3%	0%	0%	0%
Feedback on assessment was timely.	94%	3%	3%	0%	0%

Feedback on assessment was helpful	94%	3%	3%	0%	0%
I understood the lectures.	97%	3%	0%	0%	0%
The material was well organized and presented.	97%	3%	0%	0%	0%
The instructor was responsive to student needs and problems.	94%	6%	0%	0%	0%
Had The instructor been regular throughout the course?	94%	6%	0%	0%	0%
The material in the tutorials was useful.	97%	3%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	97%	3%	0%	0%	0%

Instructor Name: Mr. Shoaib Nazir

Course: CS-737 Computer organization and Assembly Language

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	94%	6%	0%	0%	0%
The course workload was manageable.	84%	10%	6%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	94%	6%	0%	0%	0%
The approximate level of your attendance during the whole course.	87%	10%	3%	0%	0%
I participated actively in the course.	87%	10%	3%	0%	0%
I think I have made progress in this course	87%	10%	3%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	84%	16%	0%	0%	0%
The learning and teaching methods encouraged participation.	94%	6%	0%	0%	0%
The overall environment in the class was conducive to learning.	90%	10%	0%	0%	0%
The classrooms were satisfactory.	90%	10%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	94%	6%	0%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	90%	10%	0%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	94%	6%	0%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	90%	10%	0%	0%	0%
The course stimulated my interest and thought about the subject area.	97%	3%	0%	0%	0%
The course was appropriate with reference to current technologies.	90%	10%	0%	0%	0%
Ideas and concepts were presented clearly.	90%	6%	3%	0%	0%
The method of assessment were reasonable.	87%	10%	3%	0%	0%
Feedback on assessment was timely.	90%	10%	0%	0%	0%

Feedback on assessment was helpful	87%	13%	0%	0%	0%
I understood the lectures.	87%	13%	0%	0%	0%
The material was well organized and presented.	87%	13%	0%	0%	0%
The instructor was responsive to student needs and problems.	90%	10%	0%	0%	0%
Had The instructor been regular throughout the course?	90%	10%	0%	0%	0%
The material in the tutorials was useful.	90%	10%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	87%	10%	3%	0%	0%

Instructor Name: Ms. Zainab Mahmood
Course: CS-685 Human Computer Interaction

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	89%	11%	0%	0%	0%
The course workload was manageable.	78%	17%	6%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	83%	11%	6%	0%	0%
The approximate level of your attendance during the whole course.	78%	17%	6%	0%	0%
I participated actively in the course.	89%	11%	0%	0%	0%
I think I have made progress in this course	83%	11%	6%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	78%	22%	0%	0%	0%
The learning and teaching methods encouraged participation.	78%	11%	11%	0%	0%
The overall environment in the class was conducive to learning.	89%	11%	0%	0%	0%
The classrooms were satisfactory.	78%	22%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	89%	11%	0%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	83%	11%	6%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	83%	11%	6%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	78%	17%	6%	0%	0%
The course stimulated my interest and thought about the subject area.	89%	11%	0%	0%	0%
The course was appropriate with reference to current technologies.	83%	11%	6%	0%	0%
Ideas and concepts were presented clearly.	89%	6%	6%	0%	0%
The method of assessment were reasonable.	83%	17%	0%	0%	0%
Feedback on assessment was timely.	78%	11%	11%	0%	0%

Feedback on assessment was helpful	83%	17%	0%	0%	0%
I understood the lectures.	89%	11%	0%	0%	0%
The material was well organized and presented.	83%	17%	0%	0%	0%
The instructor was responsive to student needs and problems.	89%	6%	6%	0%	0%
Had The instructor been regular throughout the course?	83%	11%	6%	0%	0%
The material in the tutorials was useful.	89%	11%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	72%	28%	0%	0%	0%

Instructor Name: Mr. Usman Ahmad
Course: CS-723 Web Engineering

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	80%	10%	7%	3%	0%
The course workload was manageable.	77%	10%	3%	10%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	87%	10%	0%	3%	0%
The approximate level of your attendance during the whole course.	87%	10%	3%	0%	0%
I participated actively in the course.	80%	10%	10%	0%	0%
I think I have made progress in this course	77%	10%	10%	3%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	70%	13%	13%	3%	0%
The learning and teaching methods encouraged participation.	77%	13%	7%	3%	0%
The overall environment in the class was conducive to learning.	77%	10%	13%	0%	0%
The classrooms were satisfactory.	80%	10%	10%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	83%	7%	10%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	77%	13%	7%	3%	0%
The provision of learning resources in the library was adequate and appropriate.	80%	7%	10%	3%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	80%	10%	7%	3%	0%
The course stimulated my interest and thought about the subject area.	77%	10%	10%	3%	0%
The course was appropriate with reference to current technologies.	80%	10%	10%	0%	0%
Ideas and concepts were presented clearly.	80%	10%	10%	0%	0%
The method of assessment were reasonable.	77%	13%	7%	0%	3%
Feedback on assessment was timely.	73%	17%	7%	0%	3%

Feedback on assessment was helpful	77%	13%	10%	0%	0%
I understood the lectures.	83%	7%	10%	0%	0%
The material was well organized and presented.	80%	13%	7%	0%	0%
The instructor was responsive to student needs and problems.	73%	20%	7%	0%	0%
Had The instructor been regular throughout the course?	87%	7%	7%	0%	0%
The material in the tutorials was useful.	77%	13%	10%	0%	0%
I was happy with the amount of work needed for assignments and projects.	80%	7%	13%	0%	0%

Instructor Name: Mr. Waqas Tariq Dar
Course: CS-565 Web Design and Development

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	100%	0%	0%	0%	0%
The course workload was manageable.	77%	0%	0%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	100%	0%	0%	0%	0%
The approximate level of your attendance during the whole course.	100%	0%	0%	0%	0%
I participated actively in the course.	96%	4%	0%	0%	0%
I think I have made progress in this course	96%	4%	0%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	100%	0%	0%	0%	0%
The learning and teaching methods encouraged participation.	100%	0%	0%	0%	0%
The overall environment in the class was conducive to learning.	100%	0%	0%	0%	0%
The classrooms were satisfactory.	100%	0%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	100%	0%	0%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	100%	0%	0%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	100%	0%	0%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	100%	0%	0%	0%	0%
The course stimulated my interest and thought about the subject area.	100%	0%	0%	0%	0%
The course was appropriate with reference to current technologies.	100%	0%	0%	0%	0%
Ideas and concepts were presented clearly.	80%	0%	0%	0%	0%
The method of assessment were reasonable.	77%	0%	0%	0%	0%
Feedback on assessment was timely.	73%	0%	0%	0%	0%

Feedback on assessment was helpful	77%	0%	0%	0%	0%
I understood the lectures.	83%	0%	0%	0%	0%
The material was well organized and presented.	80%	0%	0%	0%	0%
The instructor was responsive to student needs and problems.	100%	0%	0%	0%	0%
Had The instructor been regular throughout the course?	100%	0%	0%	0%	0%
The material in the tutorials was useful.	100%	0%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	100%	0%	0%	0%	0%

Instructor Name: Mr. Shahzad Ali
Course: CS-430 Digital Logic and Design

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	96%	0%	4%	0%	0%
The course workload was manageable.	91%	4%	4%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	96%	0%	4%	0%	0%
The approximate level of your attendance during the whole course.	96%	0%	4%	0%	0%
I participated actively in the course.	91%	4%	4%	0%	0%
I think I have made progress in this course	91%	4%	4%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	91%	4%	4%	0%	0%
The learning and teaching methods encouraged participation.	96%	0%	4%	0%	0%
The overall environment in the class was conducive to learning.	96%	0%	4%	0%	0%
The classrooms were satisfactory.	96%	0%	4%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	96%	0%	4%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	96%	0%	4%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	91%	4%	4%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	96%	0%	4%	0%	0%
The course stimulated my interest and thought about the subject area.	87%	9%	4%	0%	0%
The course was appropriate with reference to current technologies.	91%	4%	4%	0%	0%
Ideas and concepts were presented clearly.	96%	0%	4%	0%	0%
The method of assessment were reasonable.	91%	4%	4%	0%	0%
Feedback on assessment was timely.	96%	0%	4%	0%	0%

Feedback on assessment was helpful	96%	0%	4%	0%	0%
I understood the lectures.	96%	0%	4%	0%	0%
The material was well organized and presented.	96%	0%	4%	0%	0%
The instructor was responsive to student needs and problems.	91%	4%	4%	0%	0%
Had The instructor been regular throughout the course?	96%	0%	4%	0%	0%
The material in the tutorials was useful.	96%	0%	4%	0%	0%
I was happy with the amount of work needed for assignments and projects.	91%	4%	4%	0%	0%

CRITERION 2 CARRICULUM DESIGN AND ORGANIZATION

2 Curriculum Design and Organization

2.1 Curriculum and Learning Process

The curricula of the Computer Science program was developed keeping in view the guidelines provided by HEC.

2.1.1 Consistency of Program Structure and Course Contents in Development of Intellectual and Practical Skills and Attainment of PLOs

The computer sciences program curriculum is designed to fulfill the program learning outcomes and course learning outcomes. Each semester is of approximately 18 weeks duration. The computer science program duration is four years and is offered on a full-time basis in the morning session. The minimum duration for completing the course of the degree is 8 semesters (4 years) and maximum of 12 semesters (7 years). The course requirements for 134 credit hours. A fulltime student is required to take courses not less than 13 credit hours if he/she qualifies the prerequisite of offered course.

2.2 Curriculum Design

The curriculum of the BS Computer Science program was devised based on the needs of all stakeholders. The curriculum is broadly divided into computer science and social science courses. The computer science domain includes programming fundamentals, computer architecture, modern programming languages, digital design and logics, analysis of algorithms. A comprehensive final year project is also part of the curriculum. The contents of breadth and depth courses are selected to provide students with knowledge of overall as well as specialised areas of computer science. A number of courses include artificial intelligence, web engineering that allows the students to apply their knowledge and critical thinking and gain an in depth understanding of theory. The social science domain contains courses are related to humanities, natural sciences, and management sciences. These courses develop skills of project management, teamwork, communication, entrepreneurship, ethical and moral responsibilities, and sustainable development. The mix of computer science and social science courses is in accordance with the national guidelines provided by the HEC.

A summary of the curriculum of computer science is given in Table 33. The comparison shows that the engineering fundamentals and computing credit hours are in line with the benchmarked universities, whereas the credit hours of breadth and depth engineering courses are on the higher side.

Table 21: Curriculum Design

Domain	Knowledge Area	HEC Guidelines		BS Computer Science Program	
		Total Credits	Overall %	Total Credits	Overall %
Non-Computing	General Education	19	33.1%	43	31.4
	University Electives	12			
	Math & Science Foundation	12			
	Sub Total	43			
Computer Science	Computing-core	39	66.9%	39	68.6
	Domain Core	24		24	
	Domain Elective	15		21	
	Domain Supporting	9		9	
	Sub Total	87		93	
Total		**130**	**100**	**136**	**100**

Standard 2-1:The curriculum must be consistent and support the program's documented objectives.

2.3 Mapping of Courses to Program Learning Objectives (PLO)

Program. Semester-wise mapping of courses to PLOs is given in Table 21. The course to PLO mapping is only shown for the courses that are used for assessing a particular PLO.

Table 22: Mapping of Semester-wise Courses to Program Learning Objectives

Semester No	Course Code	Course Title	Theoretical and mathematical foundations	Be proficient in a programming language	The hardware and software architecture	Professional practices of software engineering	Communicate effectively Computing Subject, matter	Social and ethical implications of computing
			1	2	3	4	5	6
1	CS-300	Introduction to Information & Communication Technologies					✓	
	CS-323	Programming Fundamentals		✓				
	ENG-305	English Comprehension						✓
	MTH-310	Calculus & Analytical Geometry	✓					
	ELE-401	Basic Electronics			✓			
	IS-302	Islamic Studies/ Ethics						✓
2	CS-423	Object Oriented Programming		✓				
	ENG-325	Communication & Presentation Skills					✓	
	CS-430	Digital Logic Design			✓			
	STT-500	Statistics & Probability	✓					
		University Elective-1		✓				
		CS Supporting 1						✓
3	CS-443	Data Structures & Algorithms		✓				
	CS-335	Discrete Structures	✓					
	SSH-307	Professional Practices						✓
	CS-530	Computer Organization & Assembly Language			✓			
		University Elective -2		✓				
		CS Supporting 2					✓	
4	CS-400	Database Systems		✓				
	MTH-435	Linear Algebra	✓					
	CS-542	Analysis of Algorithms		✓				

	CS-536	Theory of Automata & Formal Languages			✓			
	CS-583	Operating Systems			✓			
		CS-Elective -1					✓	
5	ENG-315	Technical & Business Writing				✓		
	CS-453	Software Engineering			✓			
	CS-636	Compiler Construction		✓				
		CS-Elective -2		✓				
		University Elective -3	✓				✓	
		CS Supporting 3		✓				
6	CS-577	Computer Networks					✓	
	CS-632	Artificial Intelligence				✓		
	SSH-302	Pakistan Studies					✓	
		CS-Elective 3		✓				
		CS-Elective 4						
		University Elective -4						✓
7	CS-698	Final Year Project I		✓				
	CS-687	Parallel & Distributed Computing					✓	
		CS-Elective 5		✓				
		CS-Elective 6			✓			
		CS-Elective 7			✓			
8		Information Security					✓	
		Final Year Project II		✓				

Standard 2-2: Theoretical backgrounds, problem analysis and solution design must be stressed within the program's core material.

Table 23: Computing Core Course

Computing Core Courses (39/136)				
S#	**Code**	**Pre-req**	**Course Title**	**Cr. Hrs**
1	CS-323		Programming Fundamentals	4 (3-2)
2	CS-423	CS-323	Object Oriented Programming	4 (3-2)
3	CS-443	CS-323	Data Structures and Algorithms	4 (3-2)
4	CS-335		Discrete Structures	3(3-0)

5	CS-583		Operating System	4(3-2)
6	CS-400		Database Systems	4(3-2)
7	CS-453		Software Engineering	3 (3-0)
8	CS-577		Computer Networks	4(3-2)
9	CS-497		Information Security	3(3-0)
10	CS-698		Final Year Project-I	2(0-04)
11	CS-699	CS-698	Final Year Project-II	4(0-08)
			Total	**39**

Standard 2-3: The curriculum must satisfy the major requirements for the program as specified by the accreditation body.

Program	Math and Science	Engineering Topics	General Education	Others
BSCS	12	87	19	12

Standard 2-4: The curriculum must satisfy the core requirements for the program as specified by the accreditation body.

Table 24: Domain Core Course

Domain Courses for BS-CS				
Computer Science -CORE (Compulsory) Courses (24/136)				
S#	**Code**	**Pre-req**	**Course Title**	**Cr. Hrs**
33	CS-430		Digital Logic Design	4(3-2)
34	CS-530	CS-430	Computer Organization & Assembly Language	4(3-2)
35	CS-536	CS-335	Theory of Automata & Formal Languages	3 (3-0)
36	CS-542	CS-443	Analysis of Algorithms	3 (3-0)
37	CS-632		Artificial Intelligence	4(3-2)
38	CS-636	CS-536	Compiler Construction	3(2-2)
39	CS-687		Parallel & Distributed Computing	3(2-2)
			Total	**24**

Standard 2-5: The curriculum must satisfy general education, arts, professional and other discipline requirements of program.

Table 25: University Elective Course

University Elective Courses (12/136)				
S#	**Code**	**Pre-req**	**Course Title**	**Cr. Hrs**
19	MGT-322		Financial Accounting	3 (3-0)
20	MGT-351		Introduction to Marketing	3 (3-0)
21	MGT-411		Introduction to Management	3(3-0)
22	MGT-515		Introduction to Human Resource Management	3(3-0)
23	ECON-301		Introduction to Economics	3(3-0)
24	SSH-305		Foreign Languages	3(3-0)
25	PSY-600		Psychology	3(3-0)
26	SSH-304		International Relations	3(3-0)
27	SSH-308		Personal Grooming & Character Development	2(2-0)
28	SSH-309		Social Service	1(1-0)
			Total (Any Four of the above)	**12**

Standard 2-6: The information technology component of the curriculum must be integrated throughout the degree program.

Table 26: Domain Elective Course

Computer Science Elective Courses (21/136)				
S#	**Code**	**Pre-req**	**Course Title**	**Cr. Hrs**
43	CS-432		Modern Programming Languages	3 (2-2)
44	CS-532		Computer Architecture	3(3-0)
45	CS-553	CS-453	Object Oriented Analysis & Design	3 (3-0)
46	CS-566		Web Technologies	3(2-2)
47	CS-575	CS-323	Computer Graphics	3(2-2)
48	CS-597		Cyber Security	3 (3-0)

49	CS-601	CS-400	Data Base Administration & Management	4(3-2)
50	CS-666	CS-566	Web Engineering	3 (2-2)
51	CS-685		Human Computer Interaction	3(2-2)
52	CS-682		System Programming	3 (2-2)
53	CS-692	CS-423	Visual Programming	3 (2-2)
54	CS-693		Mobile Application Development	3(2-2)
55	CS-695	CS-423	Theory of Programming Language	3(2-2)
			Total (Any Seven of the Above)	**21**

Standard 2-7: Oral and written communication skills of the student must be developed and applied in a program.

Table 27: General Education Course

General Education Courses (19/136)				
S#	**Code**	**Pre-req**	**Course Title**	**Cr. Hrs**
12	CS-300		Introduction to Information & Communication Technologies	3(2-2)
13	ENG-305		English Comprehension	3 (3-0)
14	ENG-315		Technical & Business Writing	3 (3-0)
15	ENG-325		Communication & Presentation Skills	3(3-0)
16	SSH-307		Professional Practices	3 (3-0)
17	SSH-302		Pakistan Studies	2(2-0)
18	IS-302		Islamic Studies/ Ethics	2(2-0)
			Total	**19**

Table 28: Mathematics and Science Foundation Course

Mathematics and Science Foundation Courses (12/136)				
S#	**Code**	**Pre-req**	**Course Title**	**Cr. Hrs**
29	MTH-310		Calculus & Analytical Geometry	3 (3-0)
30	MTH-435		Linear Algebra	3 (3-0)
31	STT-500		Statistics & Probability	3(3-0)
32	ELE-401		Basic Electronics	3(2-2)
			Total	**12**

Table 29: Domain Supporting Course

Computer Science -SUPPORTING Courses (09/136)				
S #	**Code**	**Pre-req**	**Course Title**	**Cr. Hrs**
40	MTH-315	MTH-310	Multivariable Calculus	3 (3-0)
41	MTH-415	MTH-315	Differential Equations	3 (3-0)
42	CS-572	MTH-310	Numerical Analysis	3(2-2)
			Total (Any Three of the above)	**9**

2.4 Course Offerings

The offered courses belong to various domains of knowledge. The details of offered courses are provided in Table 26.

Table 30: Course Offering

Sem No.	Sr. No.	Course Code	Course Title	Credit Hours	Knowledge Area	Pre-requisite Courses
1	1	CS-323	Programming Fundamentals	4(3-2)	Computing Core	Nil **(if any)**
	2	CS-300	Intro to Information & Com. Tech.	3(2-2)	General Education	Nil
	3	IS-302	Islamic Studies	2(2-0)	General Education	Nil
	4	MTH-310	Calculus and Analytical Geometry	3(3-0)	Mathematics and Science Foundation	Nil
	5	ELE-401	Basic Electronics	3(2-2)	Mathematics and Science Foundation	Nil
	6	ENG-305	English Comprehension	3(3-0)	General Education	Nil
			Total Credit Hours	**18(15-6)**		

2	1	CS-423	Object Oriented Programming	4(3-2)	Computing Core	CS-323
	2	ENG-325	Comm.& Presentation Skills	3(3-0)	General Education	Nil
	3	CS-430	Digital Logic Design	4(3-2)	Computing Core	Nil
	4	STT-500	Statistics & Probability	3(3-0)	Mathematics and Science Foundation	Nil
	5	PSY-600	Psychology	3(3-0)	University Elective	Nil
	6	MTH-315	Multivariable Calculus	3(3-0)	Computing Science Supporting	MTH-310
			Total Credit Hours	**20(18-4)**		
3	1	CS-443	Data Structures & Algorithm	4(3-2)	Computing Core	CS-323
	2	CS-335	Discrete Structures	3(3-0)	Computing Core	Nil
	3	SSH-307	Professional Practices	3(3-0)	General Education	Nil
	4	CS-530	Computer Org. & Assembly Lang.	4(3-2)	Computing Core	CS-430
	5	MGT-322	Financial Accounting	3(3-0)	University elective	Nil
	6	MTH-415	Differential Equation	3(3-0)	Computing Science Supporting	MTH-315
			Total Credit Hours	**20(18-4)**		
4	1	CS-400	Database System	4(3-2)	Computer Science Core	Nil
	2	MTH-435	Linear Algebra	3(3-0)	Mathematics and Science Foundation	Nil
	3	CS-542	Analysis of Algorithms	3(3-0)	Computer Science Core	CS-443
	4	CS-536	Theory of Automata & Formal Lang	3(3-0)	Computer Science Core	CS-335
	5	CS-583	Operating Systems	4(3-2)	Computer Science Core	Nil
	6	CS-566	Web Technologies	3(2-2)	Computer Science Elective	Nil
			Total Credit Hours	**20(17-6)**		

5	1	ENG-315	Technical & Business Writing	3(3-0)	General Education	Nil
	2	CS-453	Software Engineering	3(3-0)	Computer Science Core	Nil
	3	CS-636	Compiler Construction	3(2-2)	Computer Science Core	CS-536
	4	CS-692	Visual Programming	3(2-2)	Computer Science Elective	CS-423
	5	CS-572	Numerical Analysis	3(2-2)	Computer Science Supporting	MTH-310
	6	MGT-411	Introduction to Management	3(3-0)	University elective	Nil
			Total Credit Hours	**18(14-6)**		
6	1	CS-577	Computer Networks	4(3-2)	Computer Science Core	Nil
	2	CS-632	Artificial Intelligence	4(3-2)	Computer Science Core	Nil
	3	SSH-302	Pakistan Studies	2(2-0)	General Education	Nil
	4	CS-666	Web Engineering	3(2-2)	Computing Elective	CS-566
	5	CS-532	Computer Architecture	3(3-0)	Computing University Elective	Nil
	6	MGT-351	Introduction to Marketing	3(3-0)	University Elective	Nil
			Total Credit Hours	**19 (13-6)**		
7	1	CS-698	Final Year Project-1	2(0-4)	Computer Science Core	Nil
	2	CS-687	Parallel & Distributed Computing	3(2-2)	Computer Science Core	Nil
	3	CS-553	Object Oriented Analysis & Design	3(3-0)	Computer Science Elective	CS-453
	4	CS-693	Mobile Application Development	3(2-2)	Computer Science Elective	Nil
	5	CS-685	Human Computer Interaction	3(2-2)	Computer Science Elective	Nil
			Total Credit Hours	**14(9-10)**		
8	1	CS-497	Information Security	3(3-0)	Computer Science Core	Nil

	2	CS-699	Final Year Project-II	4(0-8)	Computer Science Core	CS-698
			Total Credit Hours	**7(3-8)**		

2.5 Course Contents

Course contents are defined in teaching/lesson plans. Lesson plans contain detailed course contents, CLOs, teaching and assessment methods and other necessary details. Lesson plans of CS-453 Software Engineering, CS-400 Database System, CS-536 Theory of Automata & Formal Language and CS-323 Programming fundamentals are provided as samples in Annexure D

2.6 Consistency of Program Delivery and Assessment Methods and their Support in PLO Attainment

The academic calendar is prepared by the Academics Branch AAUR at the start of the semester and is forwarded to all concerned. Concerned faculty prepares the teaching/lesson plans, which are forwarded to the Academics Branch and are uploaded on the Learning Management System (LMS) before the start of the semester. A course folder is maintained during the semester for each course. Updating the course folder is the responsibility of the concerned faculty member.

2.6.1 Teaching Methods

Teaching methods are made an integral part of the teaching/lesson plan. Faculty members select an appropriate teaching method according to the learning level and desired outcomes. The teaching methods include presentations, lectures, videos, assignments, term projects. Sample lesson plans are attached as Annexure 'D'. To access the effectiveness of the teaching method we QED conduct the number of surveys to access the quality of education. The sample survey is attached in Annexure E.

2.6.2 Assessment Methods

In theory paper, students' evaluation is done by mid-term examination, assignments/ quizzes and final examination. Both the mid-term and final examinations are compulsory. A student who misses the mid-term examination is not allowed a make-up examination and is awarded zero marks in that

examination. In case a student does not appear in the final examination of a course, he/she will be deemed to have failed in that course. In theory, weightage to each component of the examination is as prescribed hereunder:

Table 31: Examination Weight

Credit Hours	Quiz-Assignment	Mid-Examination	Final Examination	Practical
3(3-0)	20%	30%	50%	N/A
3(2-2)	13.33%	20%	33.33%	33.33%
4(3-2)	15%	22.5%	37.50%	25.0%

The student must pass the practical final examination separately. A student is eligible to sit for the examination provided that he/she has attended not less than 75% of the classes in theory and practical, separately. The minimum pass marks for each course are 40% for undergraduates.

2.6.3 Final Year Project

The final year project is assigned to provide computing solutions for social issues/ business issues based on the knowledge and skills achieved while studying the computer science program. A comprehensive policy has been prepared to assign, track, evaluate and assess the final. The purpose of the policy is to provide a uniform system of guidelines to students and supervising faculty to realize their Bachelor of Science (BS) Final Year Projects (FYP). The FYP aims to allow each student to experience the software engineering design process in the context of a topic related to any social issue and independently experience engineering software from initial idea to requirement process and software development to software testing. The projects can be undertaken individually or in small teams of three members. In the latter case, the student must still fulfill the requirements laid out by the departmental policy. The Academic Supervisor is a faculty member of the Department of Computer Science and Information Technology.

CLOs for the final year project are defined as part of the FYP policy. The progress of FYP is monitored in various steps throughout the project duration by Project Management Office (PMO). The FYP is offered in the seventh semester and continues in the eighth semesters. PMO is responsible for

schedule and monitors all FYP activities. Each group is required to prepare a project proposal report and deliver a presentation to the department evaluation team for approval towards the mid/end of the seventh semester. In the eight-semester department conduct the midterm evaluation, each group is also required to make a presentation of their project and submit it to the project management office for evaluation. At the end of the eight-semester the final project evaluation is conducted and the evaluation committee accepts either the project or rejects it. The students are required to submit four hardbound copies of the FYP report. A standardised template has been prepared for the FYP report and shared with respective students and supervisors. A project CD is also required which must contain the following items:

- FYP report
- Software developed (if any, along with the code)
- Final defense Presentation
- All other material consulted/utilized
- Project submission certification (Annex F)

The assessment criteria is given in Table 29.

Table 32: Assessment Criteria for Final Year Project

Criteria	Weightage	Assessment Method
Project proposal		Rubric
Semester – VII Presentation		
Semester – VIII Mid Evaluation Report	20%	Rubric
Semester – II Final Presentation/Defense		
Semester – II Final Report	80%	Rubric
Semester – II Outcome Evaluation		Rubric

Rubrics required for FYP assessment were developed and are included in the FYP policy are given in Annexure F.

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CRITERION 3 LABORATORIES AND COMPUTING FACILITIES

3 Laboratories and Facilities

Standard 3-1: Laboratory manuals/documentation/instructions for experiments must be available and daily accessible to faculty and students

3.1 Computing Lab

The details of the computing lab including staff, related course work, type of workstations, are provided in Table 36.

- Number of total core/elective/Supporting computing Courses= 32
- Number of Lab courses = 23
- Number of Lab = 2

Standard 3-2: There must be support personal for instruction and marinating the laboratories.

Standard 3-3: The university computing infrastructure and facilities must be adequate to support the program's objectives.

Table 33: Computing Labs Details

Sr. No.	Name of Laboratory (Staff Names--Qualifications)	Lab(s) of Course(s) Conducted in the Lab.	Type(s) of Workstations (No. of each type)	Nature of Experiments	No. of Students per Workstation
2	Lab A (Muhamad Waqas BSCS, Lab Admin)	CS-572 Numerical Analysis,CS-693 Mobile Application Development CS-323 Programming Fundamental, CS-577 Computer Networks CS-530 Computer Org. & Assembly Lang. CS-423 Object Oriented Programming, CS-632 Artificial Intelligence, CS-583 Operating Systems	Number of PCs-50 Multimedia-1 White Board-1 Internet Access	Hands-on / Demonstrat ion	1:1

1	Lab B (Muhamad Farooq, MCS, Lab Tech	CS-687 Parallel & Distributed Computing, CS-CS-553 Object Oriented Analysis & Design, CS566 Web Technologies, CS-692 Visual Programming CS-363 Compiler Construction, CS-400 Database System, CS-666 Web Engineering, CS-685 Human-Computer Interaction, CS-443 Data Structures & Algorithm	Number of PCs-50 Multimedia-1 White Board-1 Internet Access	Hands-on / Demonstration	1:1

CRITERION 4 STUDENTS SUPPORT AND ADVISING

4 Students Support and Advising

University administration has formulated centralized support and advising statues. These statues provide information regarding admission, scholarships, financial matters etc. GIMS arranges orientation to the newly admitted student in its capacity that is in addition to the central orientation session held for all students of the university. GIMS arranges curricular and extracurricular activities/events such as sports week, technical workshops and annual dinner.

Standard 4-1: Courses must be offered with sufficient frequency and number for students to complete the program in a timely manner.

Courses are taught as per HEC criteria.

- At the undergraduate level subjects/courses are offered as per the scheme of study provided by the HEC and approved by the Academic Council.
- Elective courses are offered as per the policy of HEC and the University.
- No course is offered consecutively in any two semesters.

Standard 4-2: Courses in the major area of study must be structured to ensure effective interaction between students, faculty teaching assistants.

Contents of all major courses at BS (CS) contain an application development part. This part is assigned in the early weeks of the course. Students keep close interaction throughout the course with course instructor to accomplish the development of the said application. Assignments also increase interaction between student and teacher. The teaching methodology followed for BS(CS) is both instructional and constructive, where students are taught and concepts and also guided to explore additional concepts of the course domain. This exploration binds students with the teacher for assistance and progression. Meetings of the Institutional Board of Studies design and improves the BS (CS) courses. Course instructors of any major course normally invites other sibling faculty members for evaluation of student's presentation or software applications at the end of the course. This provides interaction of students to other faculty members as well. Institute always encourages the interaction between each section of BS (CS) classes through software competitions held during student’s week.

Standard 4-3: Guidance on how to complete the program must be available to all students and access to qualified advising must be available to make course decisions and career choices.

Several steps have been taken to guide students by different ways such as:

- Students are informed about the program requirement through the director's office.
- Through the personal communication of the teachers with the students.
- Meetings are organized by the director of the Institute for counseling of the students. Besides, students can also contact with the relevant teachers whenever they face any problem.
- Students can meet the director of the institute whenever they feel the need to meet on any serious issue.
- Realizing the need for exploring job opportunities for university graduates, the Directorate of Placement Bureau has been established.

4.1 The Mechanism for Providing Guidance to Students on Academic, Career and Aspects Pertaining to Wellness

4.1.1 Academic Counselling

Several steps have been taken to guide students in different ways such as:

- Students are informed about the program requirement through the director's office.
- Through the personal communication of the teachers with the students.
- Meetings are organized by the director of the Institute for counseling of the students. In addition, students can also contact the relevant teachers whenever they face any problem.
- Students can meet the director of the institute whenever they feel the need to meet on any serious issue.
- Realizing the need for exploring job opportunities for university graduates, the Directorate of Placement Bureau has been established.

Table 34: Student Teacher Ratio

2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2020-2021
1:11-1:14	1:16-1:17	1:32-1:34	1:28	1:26-1:29	1:32

4.2 Students Workload, Class Sizes for Theory as well as Laboratory Sessions and Completion of Courses

4.2.1 Class Size

There are 40-45 students on average per section in each batch of 85-90 students. During lab work each, students have a separate system to perform tasks effectively.

4.2.2 Semester Academic Load

Academic load in a semester is in the range of 17-19 credit hours except for the final semester where 12 credit hours are taught. This has been done intentionally to provide students with maximum free time, as they have to move in the market for completion of their final year projects. Students also have to appear for the interviews conducted by the employers.

4.2.3 Completion of Course and Student Feedback

Course files are prepared for each course and are available with the academic department. instructors are required to submit a course teaching/lesson plan. HOD ensures completion and conduct of the course as per schedule. Student feedback is taken twice every semester on the learning management system (LMS). Sample teacher and Course evaluation are provided in Annexure G. Faculty is consulted and corrective actions are taken where required see Annexure H.

4.3 Student Activities and Involvement in Activities Providing Experience in Management and Governance, Representation in Education and Social Activities

4.3.1 Participation in Competitions

Students are encouraged to participate in extracurricular activities. Such activities are held within GIMS as well as outside GIMS. Students are facilitated by providing them transportation. Competitions held/participated in the recent past are given in the following sections.

4.3.2 Competitions/Events Held

Details of recent completions held in SMME are given in Table 35.

Table 35: Recent Events Held in GIMS

List of Events- Fall 2018		
Sr. No	**Event**	**Date**
1	Farewell Party	July 16, 2018
2	Plantation Campaign	August 01, 2018
3	Independence Day	August 14, 2018
4	Study Trip of Department of Computer Science	October 08, 2018
5	Orientation	October 09, 2018
6	Rescue 1122 Training	October 23, 2018
7	Transform your Life -Seminar	October 31, 2018
8	Digital and Freelancing Seminar	November 9. 2018
9	Qirat and Naat Competition	November 16. 2018
10	4th Prize Distribution and Annual Lunch	December 22, 2018
11	BonFire and Music Night	January 18, 2019
12	Participation in Tamasha Event	January 26, 2019

List of Events- Spring 2019		
Sr. No	**Event**	**Date**
1	Pakistan Day Celebration	March 22, 2019
2	Sports Gala	March 28-30, 2019
3	GFAST (Speed Programming and E-Gaming Competition)	April 19, 2018
4	Air Nexus	May 3-7, 2019
5	E-Rozgaar	May 03, 2019

6	Islamic Lectures	May 17, 2019 and May 23, 2019
7	Luddo Competition	May 31, 2019
8	Quiz Competition	11-13 June, 2019
9	Seminar Facebook Developer Circles	June 13, 2019
10	Emotional Intelligence	June 14, 2019

4.3.3 Competitions/Events Participated

Students from SMME participated in a number of competitions as listed in Table 36.

Table 36: Competitions Participated by GIMS Students

Title	College/School	Date	Award Won
Daira'19 Olympiad	FAST Faislabad	January 3-7 2019	2nd
Air Nexus	Air University Islamabad	April 7-9, 2019	-

4.3.4 Internships

Internships are an integral part of the computer science curriculum and are not mandatory for all students. GIMS provides opportunities for a few internships to learn in industrial environments and expose students to the pressure of professional life.

4.3.5 Awards

Student encouragement through awards is also a big part of the Computer Science department's philosophy. Several types of awards are offered for competitions. The department also awards medals during the convocation ceremony. Department also has need-based scholarships which are offered to several students each year. The student who scored top position in respective batch consecutive four semesters will be awarded a laptop.

CRITERION 5 PROCESS CONTROL

5 Process Control

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 Requirements and Processes for Admission of Students to the Program, Response and Annual Intake

5.1.1 Admission Criteria

i A person holding an Higher Secondary Certificate, A-level, or an equivalent certificate from any recognized institute with at least second division or overall 45% marks, or any other marks specified shall be eligible to apply for admission.

ii Admission will be on open merit basis, with the following weightage for merit (Entrance test 40%, Intermediate 50%, Matric 10%).

iii Students with F.Sc. Pre-Engineering will be eligible to transfer to the BCE degree program from the BS (CS) degree program.

The admission criteria are laid out by the Arid Agriculture University and are part of GIMS statues. Admissions are handled by the Admission Office of GIMS for all programs of the GIMS.

5.1.2 Academic Standing

i Grade Point average

a) Maximum grade point average 4.00

b) Minimum grade point average for obtaining the Degree 2.50

ii To remain on the roll of the university, a student shall be required to maintain the following minimum CGPA in each semester:

Semester	CGPA
1st Semester	0.75
2nd Semester	1.00
3rd Semester	1.25

4th Semester	1.50
5th Semester	1.75
6th Semester	2.00
7th Semester	2.25
8th Semester	2.50

- A student who does not meet the above requirement for promotion shall cease to be on the university roll. However, he/she may repeat the whole semester only once.
- The course grades that a student earns in the repeated semester shall replace the previously earned course grades.
- In the 8th semester, if a student fails to achieve the 2.5 CGPA, he/she shall have to repeat the course/courses with the lowest grades, to make CGPA of 2.5 within the maximum time period allowed for the degree.
- Migration from other universities and institutes to universities will be entertained as per University migration rules.

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.

5.2 Examination and Weightage

Theory

In theory paper, students' evaluation is done by mid-term examination, assignments/ quizzes and final examination. Both the mid-term and final examinations are compulsory. A student who misses the mid-term examination is not allowed a make-up examination and is awarded zero marks in that examination. In case a student does not appear in the final examination of a course, he/she will be deemed to have failed in that course. In theory, weightage to each component of the examination is as prescribed hereunder:

Table 37: Examination Weights

Credit Hours	Quiz-Assignment	Mid-Examination	Final Examination	Practical
3(3-0)	20%	30%	50%	N/A

3(2-2)	13.33%	20%	33.33%	33.33%
4(3-2)	15%	22.5%	37.50%	25.0%

Practical

The student must pass the practical final examination separately.

5.2.1 Eligibility for Examination

A student is eligible to sit for the examination provided that he/she has attended not less than 75% of the classes in theory and practical, separately. The minimum pass marks for each course are 40% for undergraduates.

Standard 5-3: The process of recruiting and retaining highly qualified faculty must be in place and clearly documented. Also processes and procedure for faculty evaluation, promotion must be consistent with institution mission statement.

5.3 Faculty Development, Training and Retention

5.3.1 Faculty Training and Mentoring

Following opportunities and facilities are available for faculty training and mentoring.

- The new faculty attends orientation training and methods of instruction workshop.
- GIMS sometimes conducts faculty training to enhance the educational experience.

5.3.2 Faculty Retention and Career Planning

Faculty is one of the most important parts of the SMME and hiring and retention of best-in-class faculty is the topmost priority of the school. For this purpose, the following are being offered.

- GIMS offers a competitive pay package.
- Full funding for attending National/ International conferences/ seminars/ Workshops.
- Financial support for carrying out Masters & Doctoral studies.
- Funding through government and non-profit national and international organizations is facilitated.
- Promotions are based on experience and research work.
- The teaching load is based on the guidelines provided by the HEC so faculty can spend most of their time in research.

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 it is meeting objective.

5.4 Strength and Competencies of Academics Staff Covering all Areas of the Program

GIMS has a mix of qualified and experienced faculty members for teaching and research. Most of the faculty members have qualifications from leading universities in the world. The pyramid of the academic architecture of GIMS is shown in the figure below.

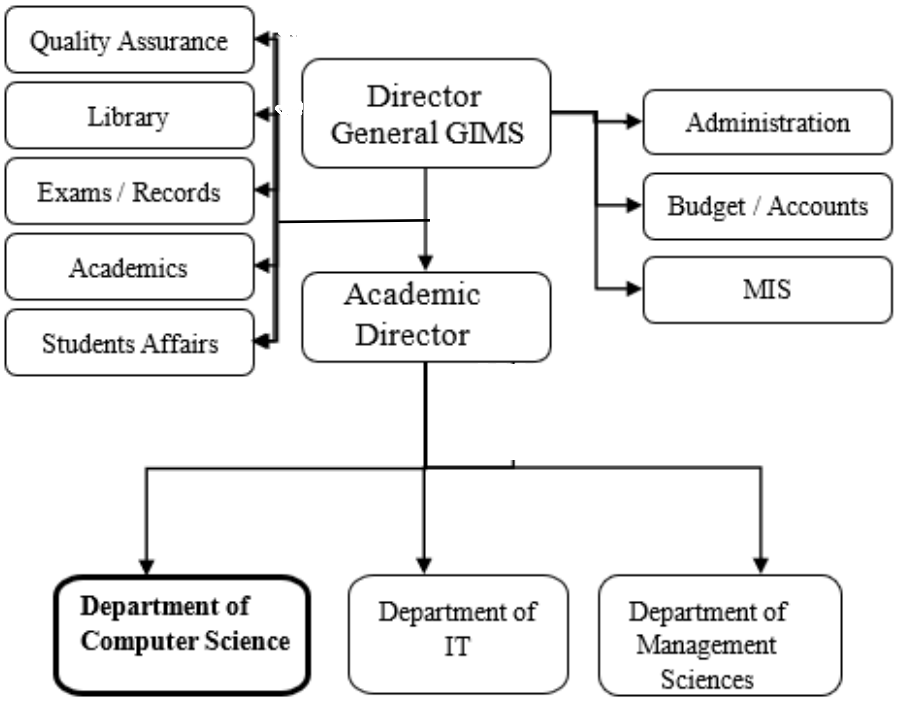


Figure 3: Academic Pyramid

CRITERION 6 FACULTY

6 Faculty

6.1.1 Faculty

Detail of faculty at GIMS is given below.

Present Scenario

Full-Time Faculty Size	Number of faculty members with PhD	MS	Full Professors	Associate Professors	Assistant Professors	Lecturers	Teaching Assistants/Fellows
	1	13			1	13	

Standard 6-1: There must be enough full-time faculty who are committed to the program to provide adequate coverage of the program.

6.2 Faculty Distribution by Program Area

Table 38: Faculty Distribution by Program Areas

Program Area of Specialization	Course in Area	Average Number of Section per Year	Number of Faculty Members in Each Area
Networks	2	6	2
Artificial Intelligence	1	4	1
Web/Mobile Development	3	9	4

6.2.1 Full Time Dedicated Faculty

The details of faculty members are stated in Table 39, and sample faculty resume is attached in Annexure K.

Table 39: Full Time Dedicated Faculty

Name of Faculty Member	Designation	Highest Degree	Subject/Discipline of Highest Degree	Faculty Type (Permanent/Contract)	Date of Joining DD-MM-YYYY	Total Experience in Teaching Degree Program	Retirement/ Contract End Date DD-MM-YYYY
Mr. Shoaib Nazir	Lecturer	M.Phil Computer Science	Computer Science	Permanent	8/10/2014	10 Years	Continue
Ms. Sumaira Hayat Khan	Assistant Professor	PhD Computer Science	Computer Science	Permanent	1/10/2020	6 Year	Continue
Mr. Bilal Mazhar	Lecturer	MS Computer Science	Computer Science	Permanent	26-09-2016	4 Years	Continue
Ms. Mehwashma Amir	Lecturer	MS Computer Science	Computer Science	Permanent	26-09-2016	4 Years	Continue
Mr. Wasif Ali	Lecturer	M.Phil Computer Science	Computer Science	Visiting Contract	8/2/2016	3 Years	30-06-2018
Ms. Zainab Mehmood	Lecturer	MS Computer Science	Computer Science	Permanent	29-09-2017	3 Years	Continue
Mr. Gulsher Alli	Lecturer	MS Computer Science	Computer Science	Permanent	29-09-2017	3 Years	Continue
Mr. Azmat Ullah	Lecturer	MS Electrical Engineer	Electrical Engineering	Visiting Contract	29-09-2016	3 Years	Continue
Mr. Shahzad Ali	Lecturer	MS Computer Science	Computer Science	Visiting Contract	6/2/2018	4 Year	Continue
Mr. Fawad Jawaid	Lecturer	MS Electrical Engineer	Electrical Engineering	Visiting Contract	3/9/2015	4 Years	22-02-2018
Ms. Bisma	Lecturer	M.Phil Linguistics	English	Visiting Contract	27-09-2017	5 Year	30-06-2019
Mr. Bahasht Baig	Lecturer	M.Phil Islamic Stuides	Islamic Studies	Visiting Contract	23-02-2015	5 Years	Continue
Ms. Natasha	Lecturer	MBA 3.5 (Marketing)	Management Science	Permanent	21-02-2017	2 Years	Continue
Ms. Samia Azhar	Lecturer	MA English	English	Visiting Contract	26-09-2016	1.5 Years	22-02-2018
Ms. Maria	Lecturer	MS Computer Science	Computer Science	Visiting Contract	6/2/2018	1.5 Year	Continue

Ms. Qurat Ul Ain	Lecturer	MS Computer Science	Computer Science	Visiting Contract	28-09-2017	6 Months	22-02-2018

6.2.2 Full Time Lab Engineers

Table 40: Full Time Lab Engineers

Name	Designation	Highest Degree	Date of Joining	Type of Job
Muhammad Waqas	Lab Engineer	BSCS (Hons)	October 2017	Permanent
Muhammad Farooq	Lab Engineer	MCS	January 2018	Permanent

6.2.3 Part Time Faculty Members at GIMS

Table 41: Part Time Faculty Members at GIMS

Part-Time Faculty Size	Number of Part-Time Faculty Members with		Total Number of Courses Offered by the Institute	Number of Courses Taught by Part-Time Faculty per Year	Average Teaching Load per Part-Time
	PhD	MS			
(Fall-2017)		16	68	54	1:3
(Spring-2017)		13	80	58	1:4
(Fall-2018)		18	96	68	1:3
(Spring-2018)		19	94	60	1:3
(Fall-18)		24	103	62	1:3
(Spring-19)		25	91	49	1:2
(Fall-19)		18	99	44	1:2
(Spring-2020)		18	92	40	1:2

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.

6.3 Overall Staff Workload

6.3.1 Faculty Workload

Teaching load based on 2018-2020	
Lecturer	12-16 Cr. Hr

6.3.2 Student Teacher Ratio

Table 42: Student Teacher Ratio

2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2020
1:11-1:14	1:16-1:17	1:32-1:34	1:28	1:26-1:29	1:32

6.4 Faculty Development, Training and Retention

6.4.1 Faculty Training and Mentoring

Following opportunities and facilities are available for faculty training and mentoring.

- The new faculty attends orientation training and methods of instruction workshop.
- GIMS sometimes conducts faculty training to enhance the educational experience.

6.4.2 Faculty Retention and Career Planning

Faculty is one of the most important parts of the SMME and hiring and retention of best-in-class faculty is the topmost priority of the school. For this purpose, the following are being offered.

- GIMS offers a competitive pay package.
- Full funding for attending National/ International conferences/ seminars/ Workshops.
- Financial support for carrying out Masters & Doctoral studies.
- Funding through government and non-profit national and international organizations is facilitated.
- Promotions are based on experience and research work.

- The teaching load is based on the guidelines provided by the HEC so faculty can spend most of their time in research.

6.5 Sufficiency and Competency of Technical and Administrative Staff in Providing Adequate Support to the Educational Program

6.5.1 Sufficiency and Competency of Technical Staff

The lab technicians and lab engineers are well qualified and meet the qualification requirements of their respective jobs. Lab engineers have B.Sc / M. Sc. Degrees in computer science while the lab technicians are technical diploma holders.

6.5.2 Sufficiency and Competency of Administrative Staff

GIMS has an adequate number of administrative staff for office and administration jobs. The administrative staff of the department is headed by Admin Manager. The staff is responsible for the general upkeep of the GIMS building and offices. In case of a medical emergency, several staff members are trained to provide first aid. They are also responsible in case of a fire emergency and have been designated as fire marshals. The administrative staff is also responsible for office work.

Standard 6-3: All faculty members should be motivated and have job satisfaction to excel in their profession.

6.6 Faculty Survey

To measure the faculty satisfaction and identifying their experience at GIMS, QED conducted a faculty Survey at end of each semester. Faculty surveys help to identify faculty member level satisfaction and their experience with administrative staff and faculty members. Faculty member suggestions and feedback help to improve the department working. The faculty survey results are available in Annexure H.

6.7 Annual Faculty Review

The yearly survey is a necessary part of any institute to self-evaluate its execution and to

assess the performance/contribution of its employees. The academic year 2019-2020 has been ended, QED and Departments have decided to take an initiative to do yearly evaluation this year and continue to do so. Some sample examples of annual faculty reviews are available in Annexure I.

Standard 6-4: There must be an adequate number of high-quality graduate students, research assistants and Ph.D. students.

Below is the list of students in BSCS program over past ten years. GIMS is not accredited for a PhD Degree. Teaching Assistants positions are not available for GIMS.

2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
39	81	124	172		

CRITERION 7 INSTITUTIONAL FACILITIES

7 Institutional Facilities

Standard 7-1: The institution must have the infrastructure to support new trends in learning such as e-learning.

7.1 Adequacy of Teaching and Learning Facilities

The adequacy of teaching and learning facilities that include classrooms, learning-support facilities, study areas, information resources, library, computing and information technology, etc. is described in the following sections.

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.

7.1.1 Library

The GIMS Library has the following facilities.

- Institute has its library which has a sufficient number of computer science-related books. New books are regularly bought, but currently, library contains low-cost editions. Expensive books are unavailable. A book bank is also required which provides effective support to students.
- Access to HEC Online Library via HEC.
- Reproduction facility is also available in the form of the printing press in GIMS where computing and other subject books like mathematics are being printed after necessary permission.

Standard 7-3: Classrooms must be adequately equipped, and offices must be adequate to enable faculty to carry out their responsibilities.

7.1.2 Lecture Facilities

The GIMS building is situated within the premises of Kalra Khas Gujrat. GIMS has its building. Construction of an additional wing is also in progress. The building has the following facilities:

- Classrooms: 10
- Seating capacity of each classroom: 50

- Audio-Video facilities: Computer, multimedia projector, audio system
- Seminar Hall with a seating capacity of 100 shared with other departments

7.1.3 Computer Laboratories

Following dedicated computer laboratories are available.

- Computational Lab A
- Computational Lab B

The computing facilities have the latest computing software including visual studio, NASAM, Dreamweaver Matlab, etc.

7.1.4 Sports

At GIMS the implementation of a wholesome policy helps shape student's personalities and careers in a more efficient manner. Students are, therefore, encouraged to participate in various sports competitions held as a regular feature of campus life. The following facilities are available in the campus.

- Badminton Court 12
- Table Tennis Total 4, 3 x Girls, 1 x Boys

7.1.5 Transport

GIMS maintains an organized transportation network within the campus for the students and staff. Vans provide transport from Gate 1 from 8:30 to 9:30 am. GIMS provides transportation within Gujrat city and outside Gujrat. Transportation facilities provided to students of Kharrian, Jalapur Jattan, Lalmusa.

7.1.6 Other On-Campus Facilities

The campus has the following facilities available for students.

- Cafeteria
- PhotoShop
- Stationery Shop

CRITERION 8 INSTITUTIONAL SUPPORT

8 Institutional Support

8.1 Institutional Financial Commitment and Support

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.

8.1.1 Income and Expenditure Details

Table 43: Income and Expenditure Details

S No	Source of Income	Financial Year 2017-18 (July 2017 to August 2018)			Financial Year 2018-19 (July 2018 to August 2019)			Financial Year 2019-20 (July 2019 to June 20)		
		Budget	Income	Expenditure	Budget	Income	Expenditure	Budget	Income	Expenditure
1		25000000	246747735	23644527	4000000	39281610	37119271	60500000	54182899	51139207

Standard 8-2:There must be an adequate number of high-quality graduate students, research assistants and Ph.D. Students.

8.1.2 Student Teacher Ratio

2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2020
1:11-1:14	1:16-1:17	1:32-1:34	1:28	1:26-1:29	1:32

Standard 8-3: Financial resources must be provided to acquire and maintain library holdings, laboratories and computing facilities.

	(July 2017 to August 2018)	July 2018 to August 2019)	(July 2019 to June 20)	(July 2020 to June 21)
Institution's yearly budget for research and faculty development for the past five years	Rs: 400000	Rs:	Rs:	Rs:
Institution's yearly budget for library	Rs: 400000	Rs: 350000	Rs: 475000	Rs:300000
Institution's yearly budget for computing facilities	Rs: 800000	Rs: 950000	Rs: 882000	Rs:125000

Department/school/ college's yearly budget for research and faculty development for the past five years	Rs: 1050000	Rs: 150000	Rs: 175000	Rs:130000
Fee Structure	Subsidized Fee: Rs. 19250 Regular Fee: Rs.34850	Subsidized Fee: Rs. 19250 Regular Fee: Rs. 34850	Subsidized Fee: Rs. 20450 Regular Fee: Rs.36200	Subsidized Rs. 20450 Regular Fee: Rs.36200

CONTINUOUS QUALITY IMPROVEMENT

9 Continuous Quality Improvement

9.1 Program Planning

9.1.1 Curriculum Development

The curriculum of the computer science program was developed to meet the requirements of HEC. A comprehensive exercise was carried out among all the stakeholders to unify the curriculum. During that phase, experts from all the AAUR departments and affiliated institutes were brought together and careful deliberations were carried out. The finalised unified curriculum is implemented and taught in AAUR and Affiliated institutes. A number of elective courses are available for students to choose from to increase their depth and breadth of knowledge.

9.1.2 Curriculum Review

A comprehensive policy exists at AAUR and GIMS level for curriculum review and updating. The curriculum could be reviewed on the basis of a number of factors including HEC revision of curriculum requirements, feedback from stakeholders, etc.

9.1.3 Content Review

Courses are assigned to the faculty at the start of the semester. The content of each course has been defined by the department and a lesson/teaching plan is prepared by the concerned faculty based on the approved course contents. The faculty member is allowed to change 10% of the course content of a course. Sample lesson plans are provided at Annexure ‘D’. The lesson plans include detailed content breakdown, teaching methods, and assessment methods.

9.1.4 Response to Feedback

Feedback from faculty and students is collected on a regular basis through the LMS system. Students are required to provide feedback once during the course. The anonymous feedback becomes available to the concerned faculty for review and any necessary action. The faculty

also provides feedback at the end of the course. The feedback provided by faculty and students is monitored by the QED, Academic Directors, HODs.

Various types of feedbacks obtained from alumni, faculty, students, employers, etc are addressed at various levels during the faculty meetings.

9.1.5 Tracking of Contribution of Individual Courses to PLOs

The course learning outcomes for each course have been defined and linked with appropriate program learning outcomes. The assessment methods of CLOs are part of the lesson plans where a specific CLO may be evaluated using any suitable assessment method. The assessment methods include quizzes, assignments, presentations, reports, term projects, end semester exams, etc. Specific CLO is attributed to a specific question. The question papers are approved by the HOD for the appropriate level of learning and difficulty. The complete record of CLO attainment is maintained in the Academics Branch.

9.2 Continuous Improvement

9.2.1 Observations, Implementation Plan and Actions Taken Since Last SAR

Sr. No	Observations	Action Take by Department	Status
1	The rubric was not designed for BSCS Final year project evaluation that would be used to measure program educational objectives.	The department directed the Project Management office to design a rubric with the consultancy of faculty members. The rubric was implemented in the final year project evaluation.	Achieved
2	Employer Survey was not designed in compliance to measure the program educational objectives.	QED and department coordinator set together and redesign the survey which includes the statement that would help out the measuring the program educational objective.	Achieved
3	Department has not initiated the research cultural among undergraduate students.	Institute recruit Ph.D. faculty member as HoD with aims to flourish the research among the faculty members and take initiative among students for a review paper and research paper.	Partially Achieved
4	Scheme of Study for BSCS	The course has been mapped with	Achieved

	program not adequately state which course will help to achieve program educational objective and outcomes.	program learning and educational objective are stated in Table 6 and Tables 7-17 in this SAR.	
5	Institute has not dedicated any career counseling and job placement office students.	Job placement and career counseling office establishment are under discussion of Director GIMS and Academic Director.	In process
6	Department has no dedicated meeting and conference room.	The infrastructure of the institute has been improved as dedicated campus construction is completed in Spring 2020. Meeting rooms, discussion rooms, and conference rooms are available for faculty and students.	Achieved
7	Institute has not had its student and teacher portal where students and teachers can communicate subject matter effectively.	The GIMS has launched Learning Management System in Spring 2020 for instructor and faculty members, and it is accessible for all stakeholders.	Achieved
8	Proper teacher training and faculty development programs, particularly for the newly inducted young faculty members, need to be established on a priority basis.	Department had planned a number of the training program but due to COVID'19 no physical training was possible for a year, Meanwhile, the faculty members have attended a few virtual seminars and talks.	In process

COVID'19 OUTBREAK AND ONLINE CLASSES

COVID'19 Outbreak and Online Classes

Compliance with HEC COVID'19 Policy and Guidelines

In compliance with the COVID-19 Policy Guideline received from Higher Education Commission, Islamabad, and PMAS Arid Agriculture University Rawalpindi. Due to the pandemic of COVID-19, which is a global issue and the time to fight against it is yet unknown. PMAS-AAUR announced to continue necessary academic activities online to avoid loss of precious time, from March 18, 2020, Spring 2020 and Fall 2020 were continued in online education mode. Online education is the only way through which educational loss can be minimized, if not avoided by the use of modern technology. Gujrat Institute of Management Sciences under the direction of PMAS- AAUR hereby announced to start the online classes.

To achieve the desired learning outcomes of a course Faculty will be using multiple technology platforms/applications like Google Classroom, Google Meet/Hangout, Microsoft Teams/Skype, Zoom, Facebook Live, and YouTube channels, etc. We believe this was the best course of action for establishing a reliable, high-quality method of instruction and academic progress for our students through this semester. In this regard, please note the following points.

- To ensure the safety and security of faculty employees of the institute, GIMS directed the all-faculty members to work from their homes to carry necessary academic activities for Fall 2019.
- Remote/Virtual Classes were resumed from March 23, 2020.
- Course outlines and weekly lecture plan was shared by the concerned faculty members.
- The enrollment lists had also been shared with concerned faculty members to invite enrolled students.
- Attendance for each live session was mandatory and is marked during the lecture.
- Online Class Report Performa was shared with faculty members and advised to weekly submit a report to respective departmental coordinators and Academic Director.
- Faculty members were advised to prepare the Course Readiness as HEC Covid-19 policies and guidelines and course readiness are shared with students.
- Guidelines to use Google Classroom and zoom were shared with faculty and students.

- Faculty members were advised to provide consulting hours to students to properly address the student's quires regarding subject matters.
- It was ensured that all course elements are placed on the google classroom as learning objectives, textbooks, evaluations, and lesson plans.
- Academic Director and QED regularly monitored the online classes and getting feedback from faculty and students.

Online Class Monitoring

The online classes were strictly observed during these semesters by academic directors and respective program coordinators. The issues observed during online classes immediately came on the table of discussion with the respective course instructor and students. The instructor was obliged to submit the weekly online class report via email to the respective program's coordinator to ensure the delivery of content on time. The online class report form is available in Annexure J. Respective program coordinator monitored the learning management system periodically.

Online Class Manuals

The online mode of education was new and challenging on Mach 2020 for instructors and students. Faculty need to go above and beyond to demonstrate their expertise. Faculty use all the tools available to them online to be sure that students can be as confident in their instructor online as they would be in the traditional classroom. However, to cope with the challenging situation number of measures were taken for easy and effective delivery of online lecture for instructor and quick access for students to content and lecture materials. Online class manuals for students and instructors designed and communicated via the web. The detailed manual is available in Annexure J.

Course Folders

As per the new situation of online classes under the direction of director QEC of AAUR the course folders were designed which contain course readiness report, weekly lecture material, zoom lecture recordings, assignments, and student's assessment result. The department provided course folder records to QED, GIMS and upload these folders on google drives for quick access and audit. Sample list of Course folder is available in Annexure J.

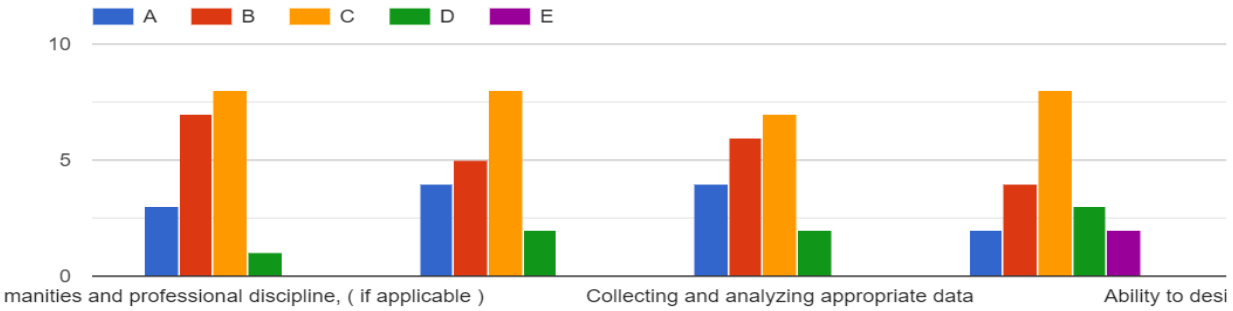
10 Annexure A: Alumni Survey

Performa: 7 Alumni Survey

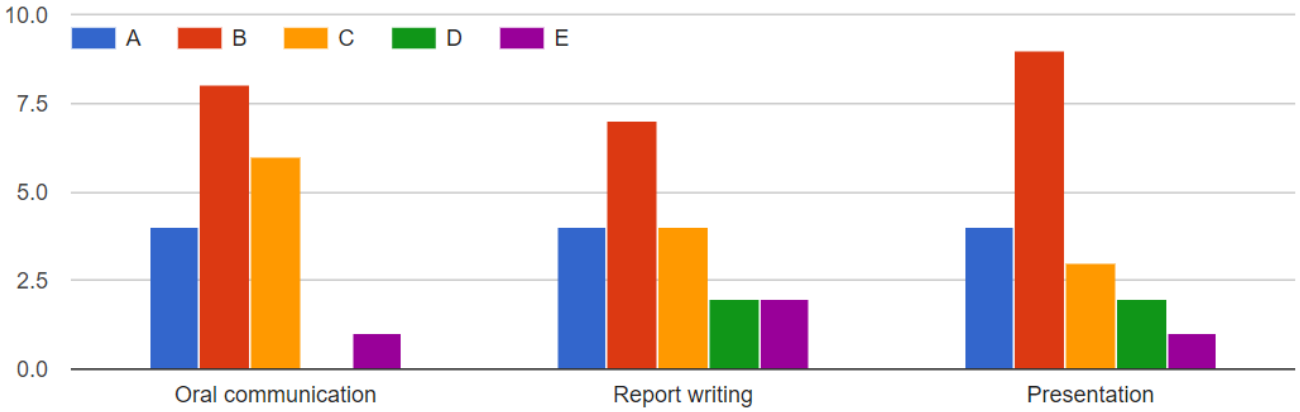
Department of Computer Science & IT

BSCS Programs Batch 2015-2019

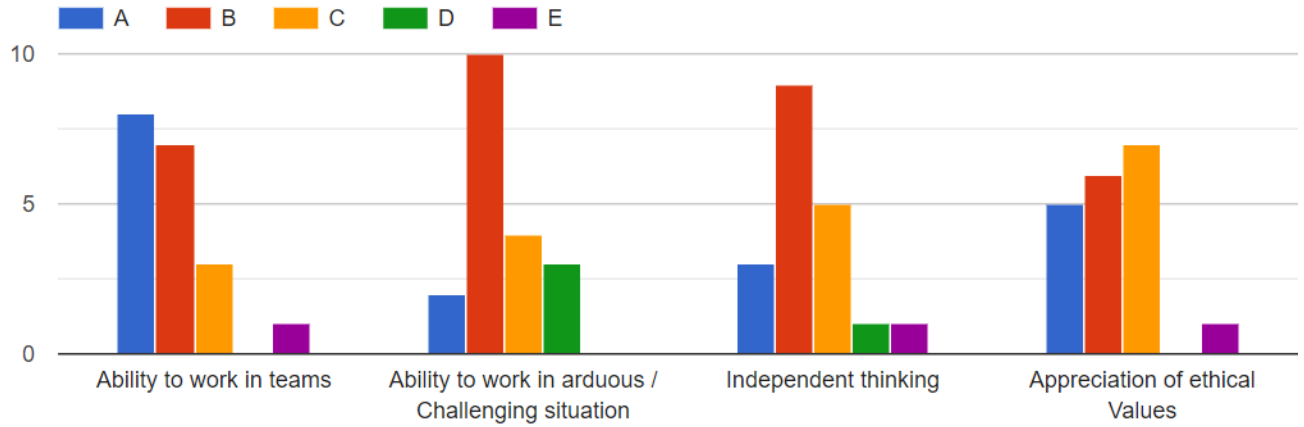
1. Knowledge



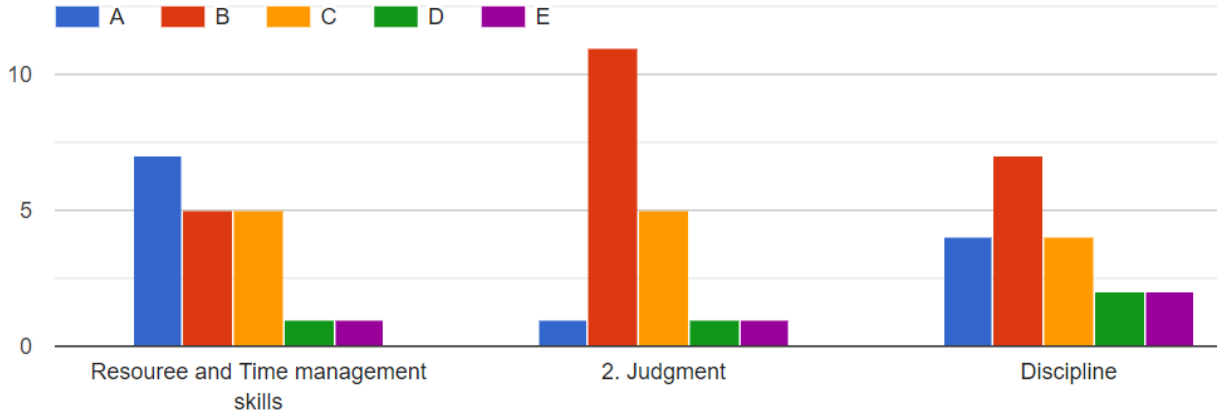
2. Communication Skills



3. Interpersonal Skills



4. Management and Leadership Skills



Alumni Survey Questions Summery

S. No	General Comments Please make any additional comments or suggestions, which you think would help strengthen our programs. (New courses that you would recommend and courses that you did not gain much from)	Career Opportunities	Name of organization (In which you are currently working)	Position in organization
1	Software engineering	internee at ibb tech	ibb tech	Internee
2	professional faculty needed	Anything in which u have interest. Business or job anything	Arid Agriculture	Internee
3	--	A lot of career opportunities in it	having my own startup	-
4	Please do more focus on the piratical skills rather then theory and university must start the extra circular activity related the important courses in with student learn the more . Like add a department this department contain different extra and only piratical courses and every student choose any piratical course with his semester or any semester and student should improve his piratical skills .	Very few	Micromerger	lecturer
5	Please more focus a piratical skills rather then theatrical skills . and add different only piratical course that helpful for the student future life	good	IIBTech	Developer
6	hire more professional teacher which get work from students and perform more and more practical’s	By studying in this institute i get much confidence that i do anything	Micromerger (pvt.) Ltd.	Developer
7	I did not gain much from "Mobile Development" course Second thing is that improve practical work	Help to achieve career opportunity	Bank	Internee
8	should offer new courses like physics chemistry zoology	None	--	Lecturer

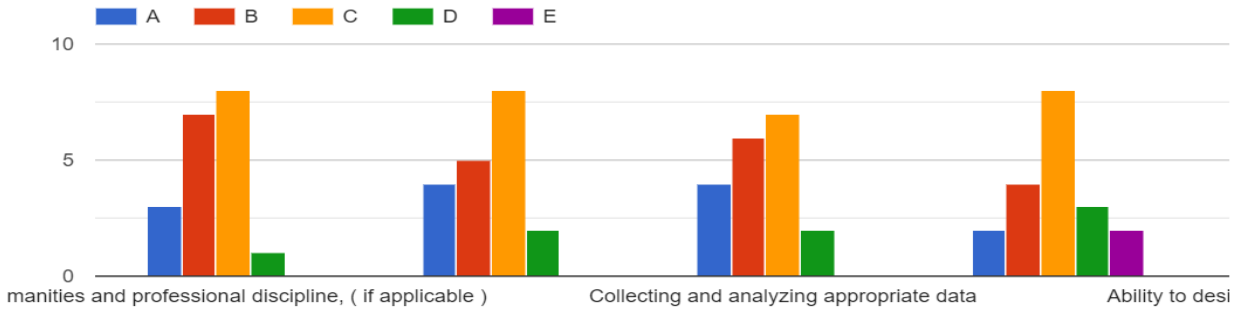
9	You should improve your teacher faculty	There is a lot of opportunity for us for establishing strong career	GIMS	Internee
10	no need of new courses just improves courses which are already being studied make course outlines according to the current market desires.			
11	Python			

Performa: 7 Alumni Survey

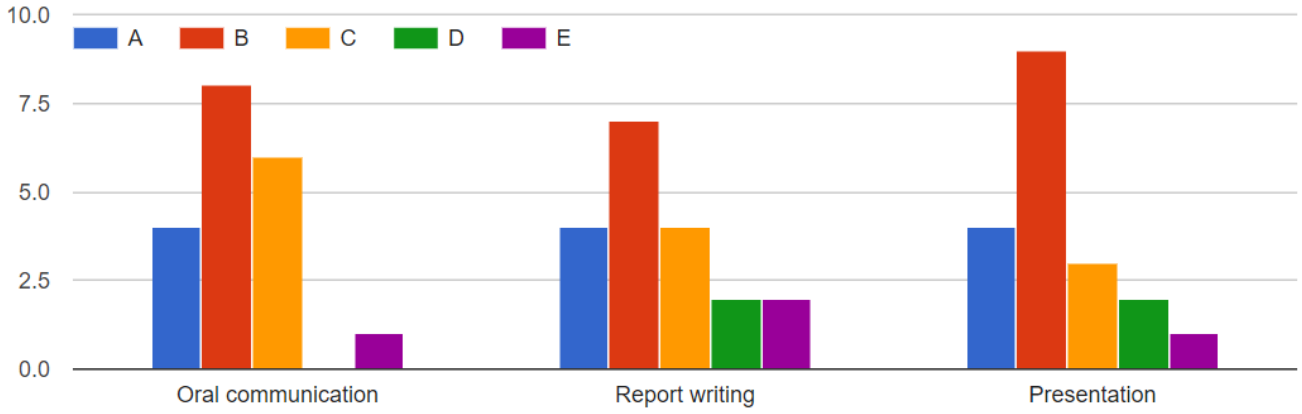
Department of Computer Science & IT

BSCS Programs Batch 2017-2019

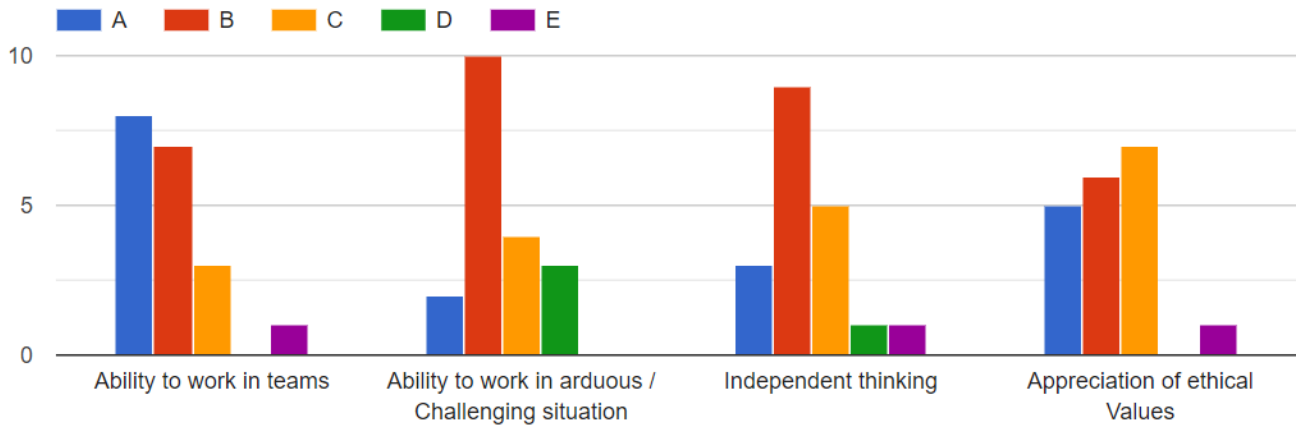
1. Knowledge



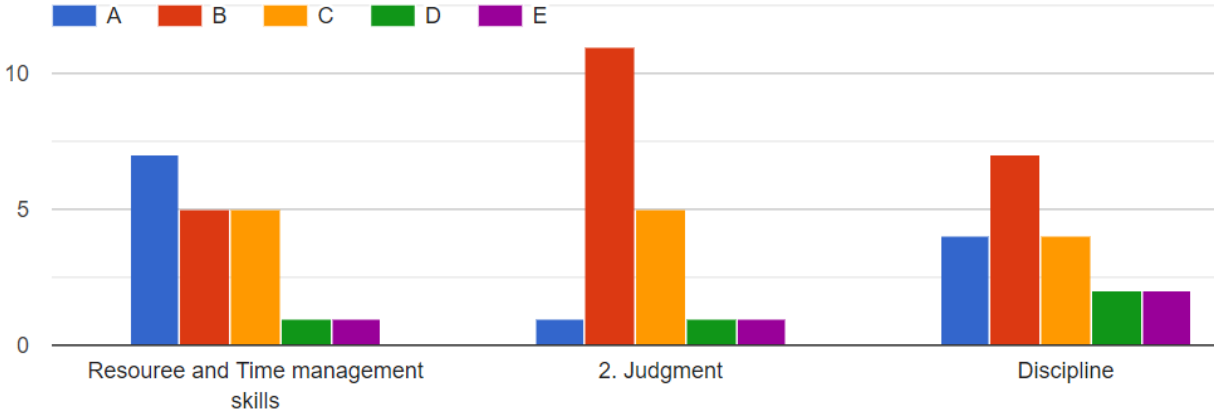
2. Communication Skills



3. Interpersonal Skills



4. Management and Leadership Skills



Alumni Survey Questions Summery

S. No	General Comments Please make any additional comments or suggestions, which you think would help strengthen our programs. (New courses that you would recommend and courses that you did not gain much from)	Career Opportunities	Name of organization (In which you are currently working)	Position in organization
1	Software engineering	internee at ibb tech	ibb tech	Internee
2	professional faculty needed	Anything in which u have interest. Business or job anything	Arid Agriculture	Internee
3	--	A lot of career opportunities in it	having my own startup	-
4	Please do more focus on the piratical skills rather then theory and university must start the extra circular activity related the important courses in with student learn the more . Like add a department this department contain different extra and only piratical courses and every student choose any piratical course with his semester or any semester and student should improve his piratical skills .	Very few	Micromerger	lecturer
5	Please more focus a piratical skills rather then theatrical skills . and add different only piratical course that helpful for the student future life	good	IIBTech	Developer
6	hire more professional teacher which get work from students and perform more and more practical’s	By studying in this institute i get much confidence that i do anything	Micromerger (pvt.) Ltd.	Developer
7	I did not gain much from "Mobile Development" course Second thing is that improve practical work	Help to achieve career opportunity	Bank	Internee
8	should offer new courses like physics chemistry zoology	None	--	Lecturer
9	You should improve your teacher faculty	There is a lot of opportunity for us	GIMS	Internee

		for establishing strong career		
10	no need of new courses just improves courses which are already being studied make course outlines according to the current market desires.			
11	Python			

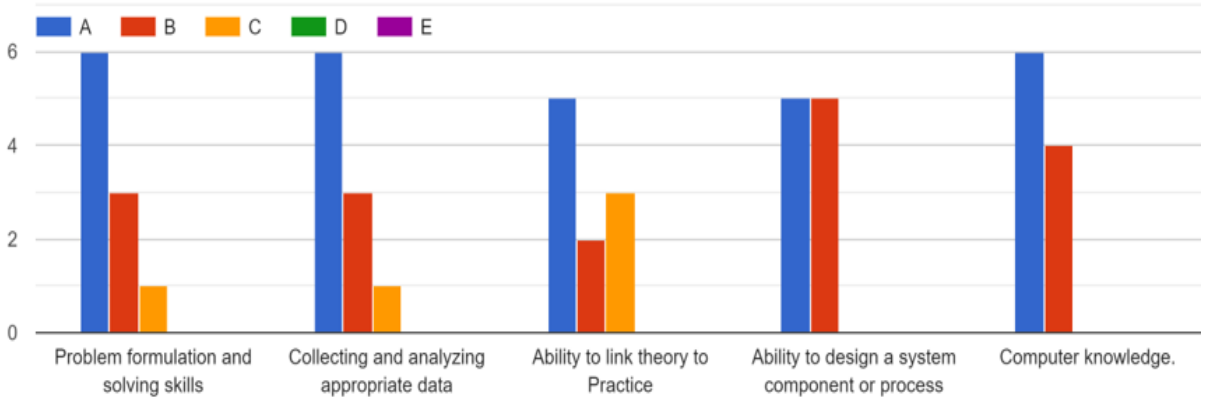
11 Annexure B: Employer Survey

A survey has been conducted and feedback has been collected on Performa 8 from the employees where students have BSCS from GIMS are working. The results are summarized in figure given below.

Performa: 8 Employer Survey
Department of Computer Science
(Batch: 2015-2019)

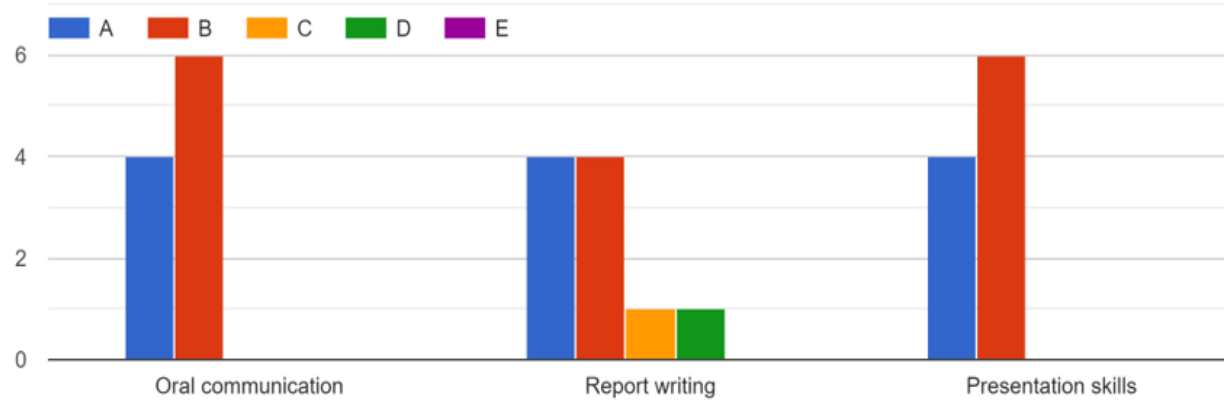
5. Rank Employee's Knowledge

A: Excellent B: Very good C: Good D: Fair E: Poor



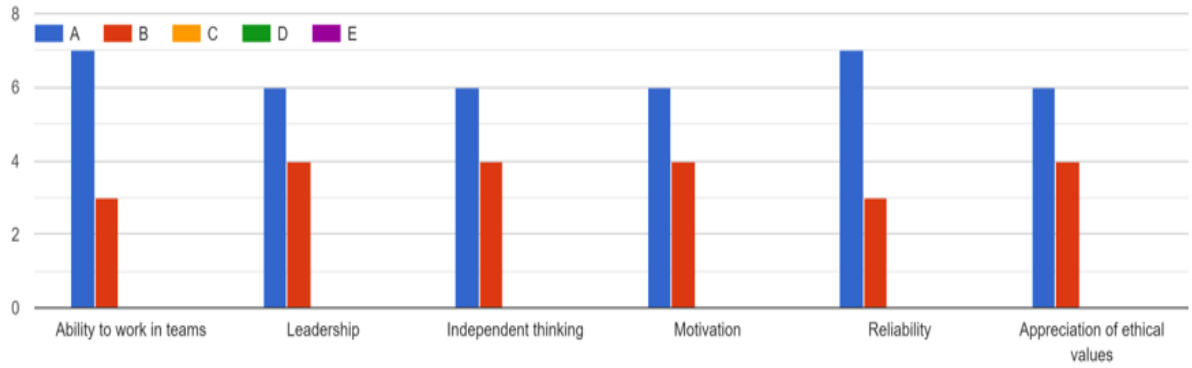
6. Rank Employee's Communication Skills

A: Excellent B: Very good C: Good D: Fair E: Poor



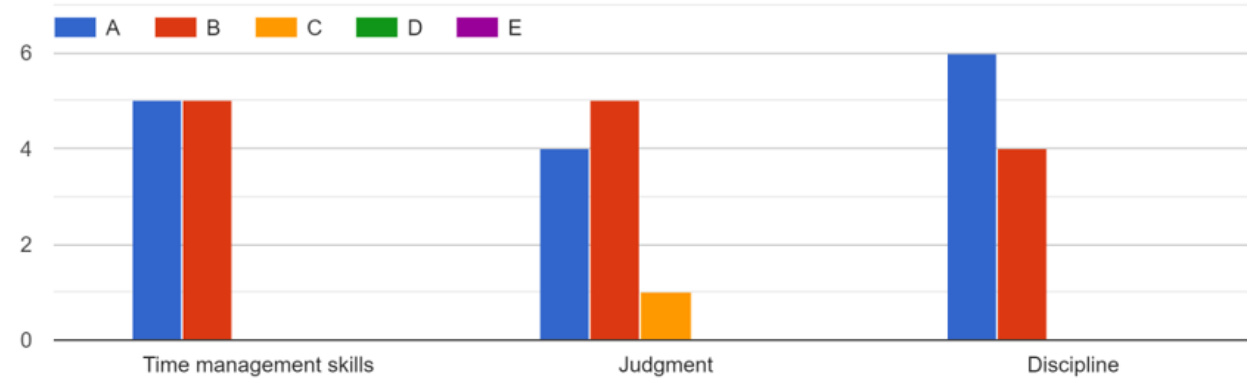
7. Rank Employee's Interpersonal Skills

A: Excellent B: Very good C: Good D: Fair E: Poor



8. Rank Employee's Work skills

A: Excellent B: Very good C: Good D: Fair E: Poor



12 Annexure C: Graduating Survey

Performa: 3 Survey of Graduating Students

Department of Computer Science & IT

BS Batch (2015-2019)

S.no	Statements	VS	SA	UC	DS	VD
1	The work in the program is educative	0%	71.4%	14/3%	0%	14.3%
2	The program is effective in enhancing team-working abilities.	85.7%	78.6%	0%	0%	14.3%
3	The program administration is effective in supporting learning.	0%	71.4%	14.3%	0%	14.3%
4	The program is effective in developing analytical and problem solving skills.	0%	28.6%	57.1%	0%	14.3%
5	The program is effective in developing independent thinking.	0%	71.4%	14.3%	0%	14.3%
6	The program is effective in developing written communication skills.	28.6%	28.6%	28.6%	0%	14.3%
7	The program is effective in developing planning abilities	28.6%	64.3%	7.1%	0%	0%
8	The objectives of the program have been fully achieved	28.6%	28.6%	14.3%	14.3%	14.3%
9	Whether the contents of curriculum are advanced and meet program objectives	0%	42.9%	28.6%	14.3%	14.3%
10	Faculty was able to meet the program objectives	28.6%	42.9%	14.3%	0%	14.3%
11	Environment was conducive for learning	14.3%	57.1%	14.3%	14.3%	0%
12	Whether the Infrastructure of the department was good	0%	28.6%	42.9%	14.3%	14.3%
13	Whether the program was comprised of Co-curricular and extra-curricular activities	0%	71.4%	14.3%	0%	14.3%
14	Whether scholarships/ grants were available to students in case of hardship	0%	28.6%	57.1%	0%	14.3%

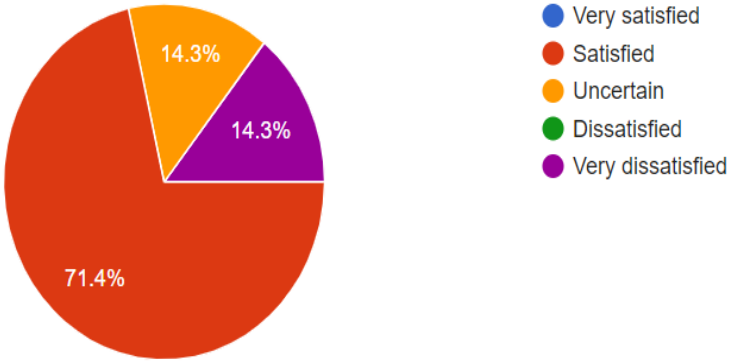
VS: Very Satisfied SA: Satisfied UC: Uncertain DS: Dissatisfied VD: Very Dissatisfied

Performa: 3 Survey of Graduating Students

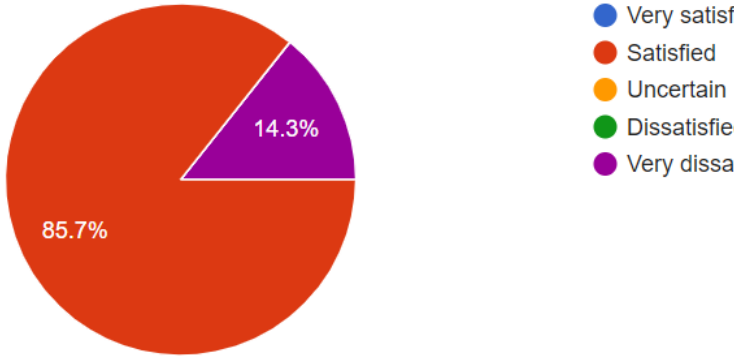
Department of Computer Science & IT

Batch (2015-2019)

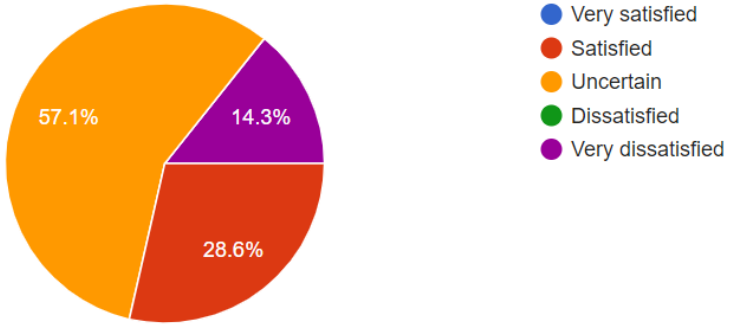
1. The work in the program is educative.



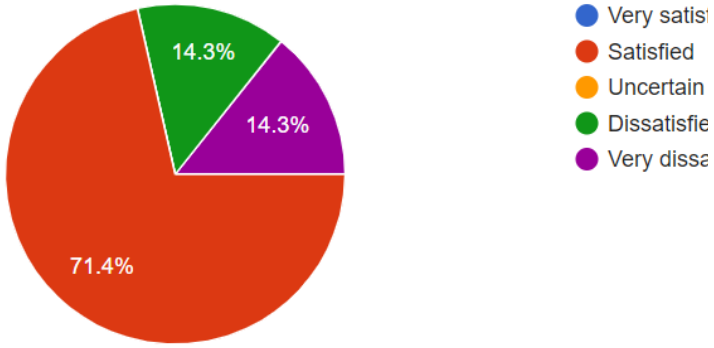
2. The program is effective in enhancing team-working abilities.



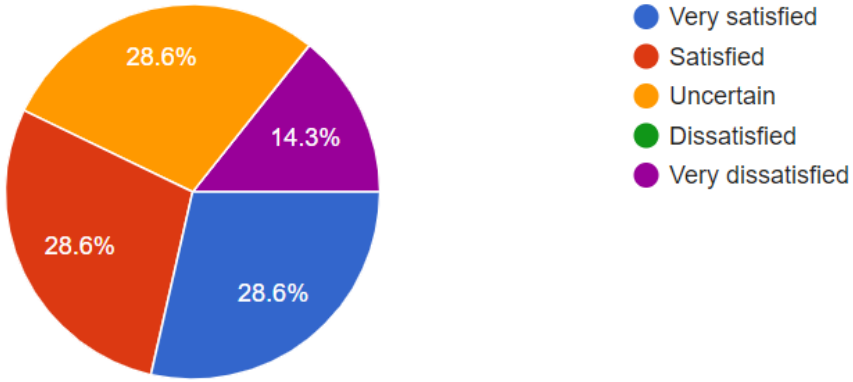
3. The program administration is effective in supporting learning.



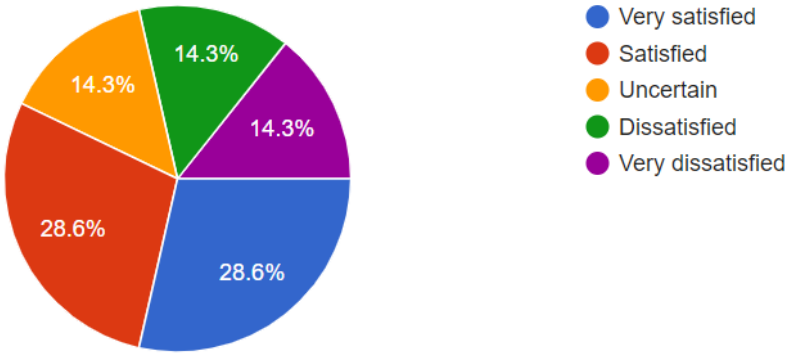
4. The program is effective in developing analytical and problem-solving skills.



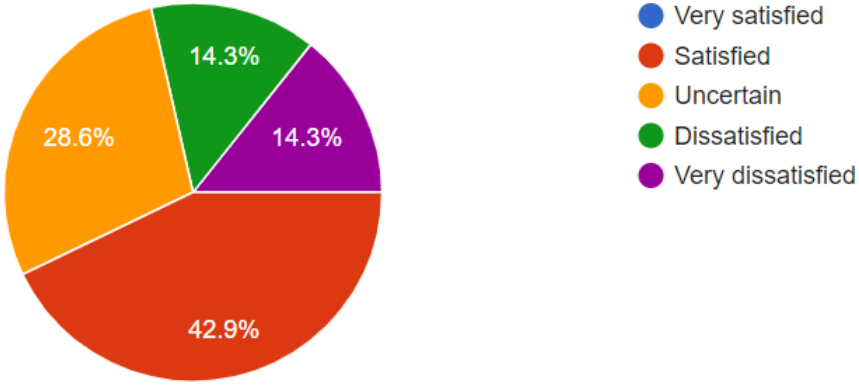
5. The program is effective in developing independent thinking.



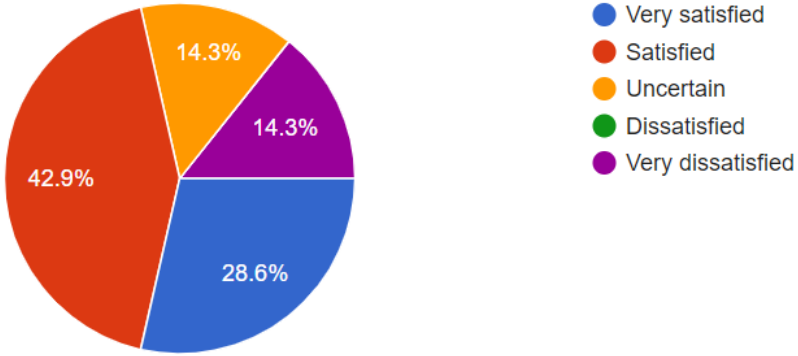
6. The program is effective in developing written communication skills.



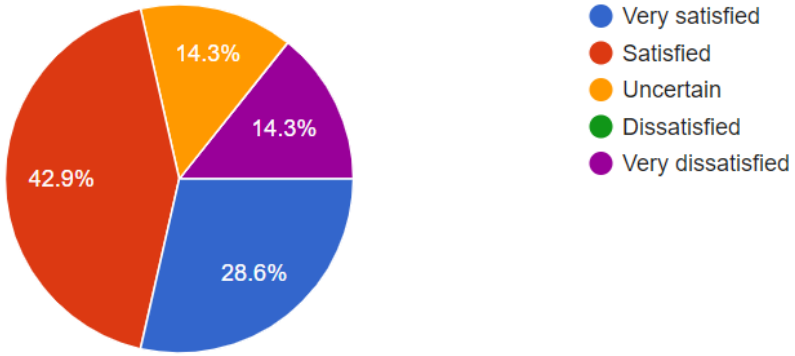
7. The program is effective in developing planning abilities



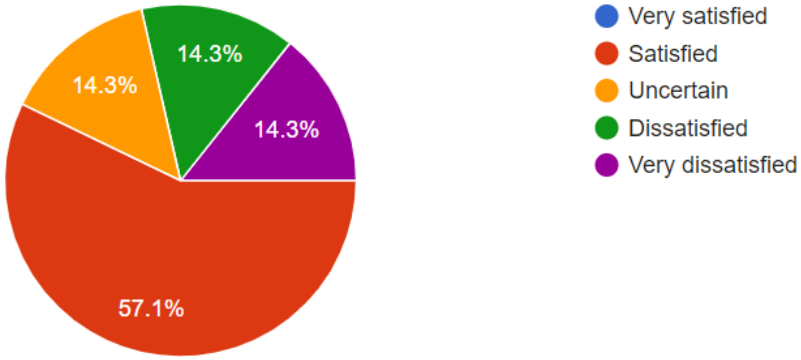
8. The objectives of the program have been fully achieved



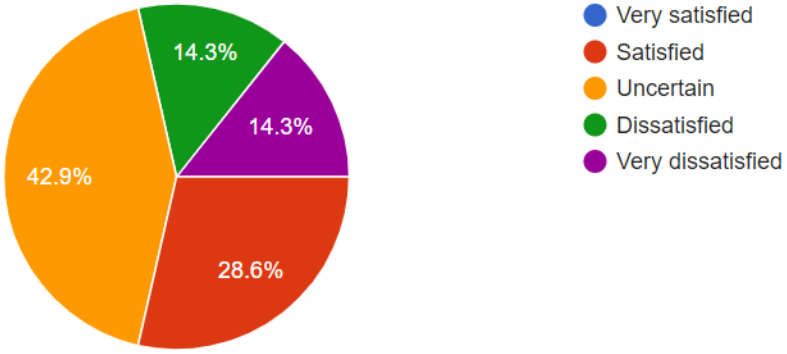
9. Whether the contents of curriculum are advanced and meet program objectives



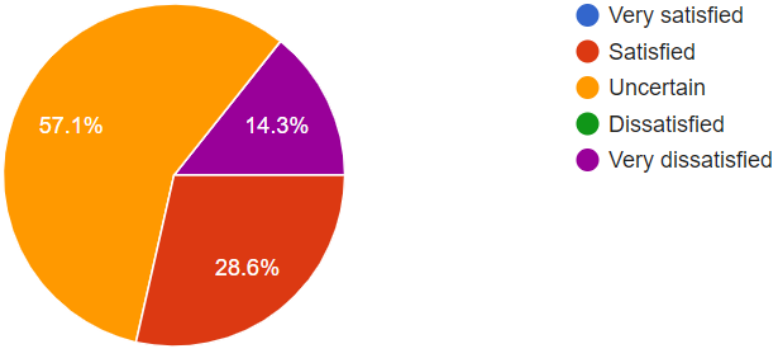
10. Faculty was able to meet the program objectives.



11. Environment was conducive for learning.

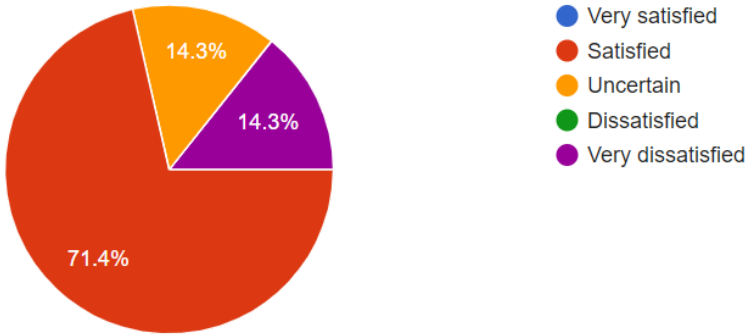


12. Whether the Infrastructure of the department was good.

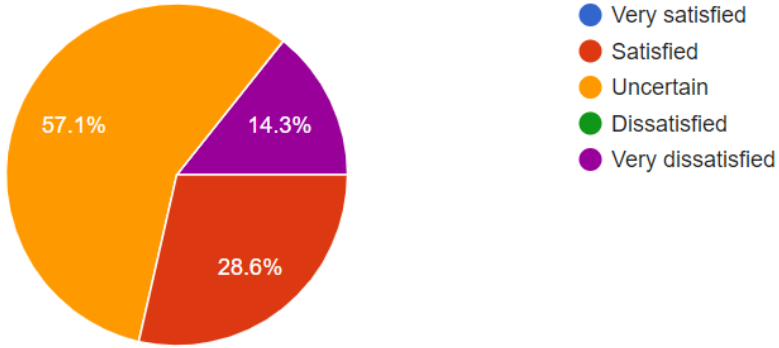


13. Whether the program was comprised of Co-curricular and extra-curricular activities.

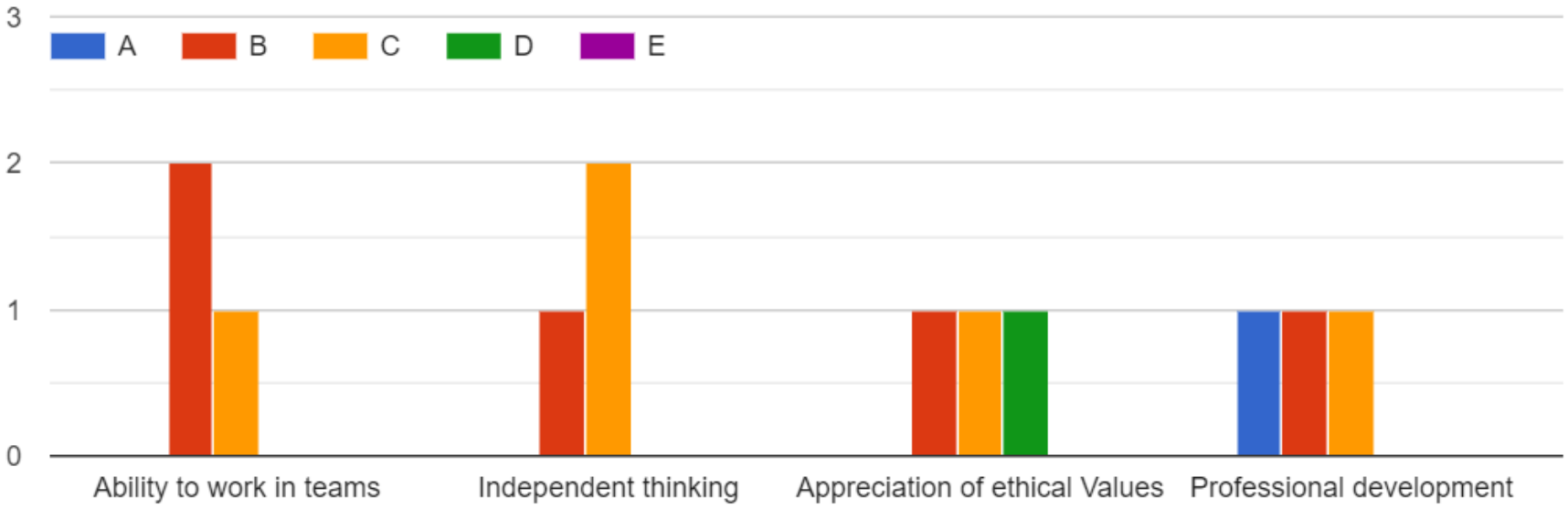
.



14. Whether scholarships/ grants were available to students in case of hardship.



14. The internship experience is effective in enhancing.



Performa: 3 Survey of Graduating Students

Department of Computer Science & IT

BSCS- Batch (2016-2020)

S.no	Statements	VS	SA	UC	DS	VD
1	The work in the program is educative	42.9%	57.1%	0%	0%	0%
2	The program is effective in enhancing team-working abilities.	14.3%	71.4%	14.3%	0%	0%
3	The program administration is effective in supporting learning.	85.7%	14.3%	0%	0%	0%
4	The program is effective in developing analytical and problem solving skills.	28.6%	57.1%	14.3%	0%	0%
5	The program is effective in developing independent thinking.	85.7%	14.3%	0%	0%	0%
6	The program is effective in developing written communication skills.	85.7%	14.3%	0%	0%	0%
7	The program is effective in developing planning abilities	14.3%	71.5%	0%	14.3%	0%
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Department of Computer Science & IT

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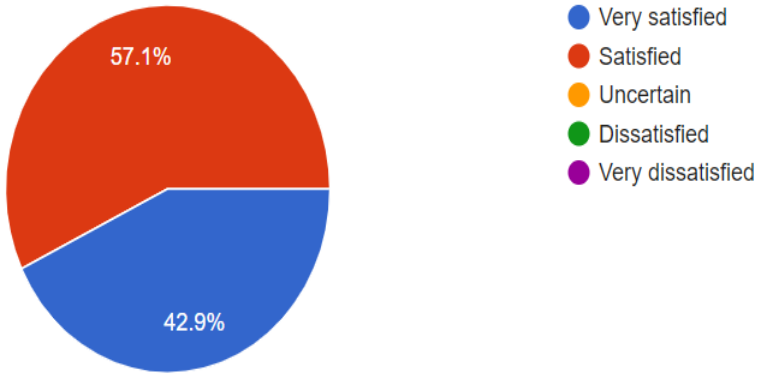

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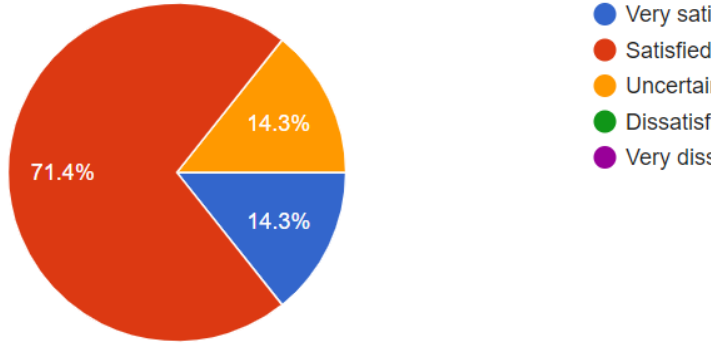
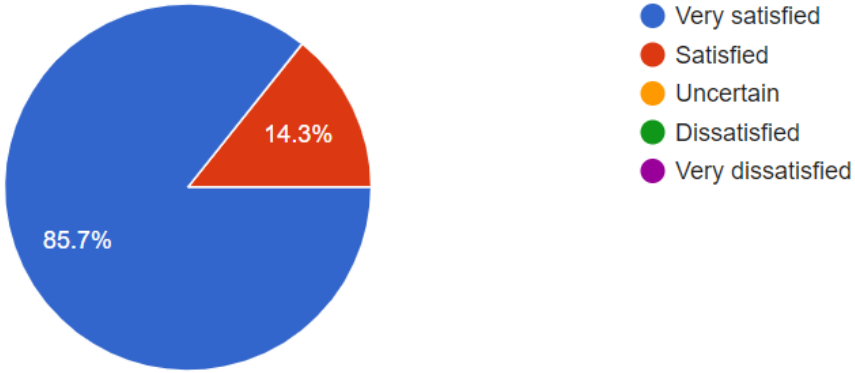


3. The program administration is effective in supporting learning.



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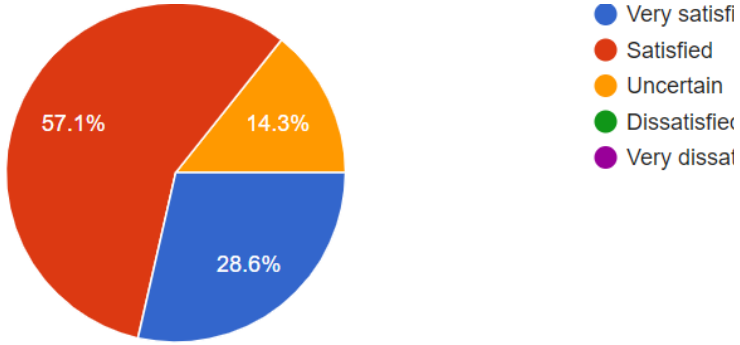
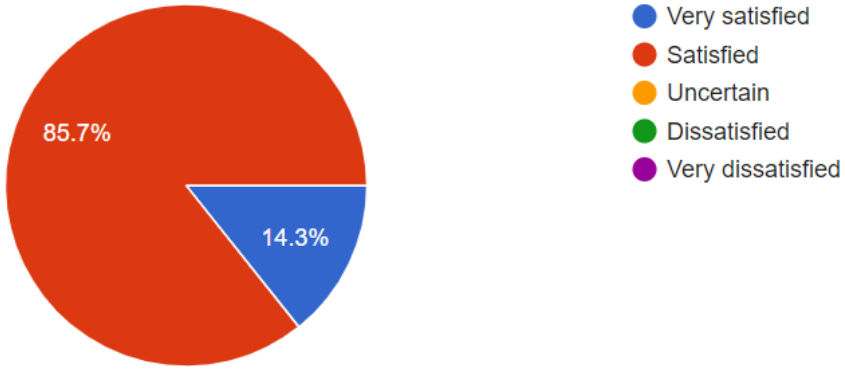
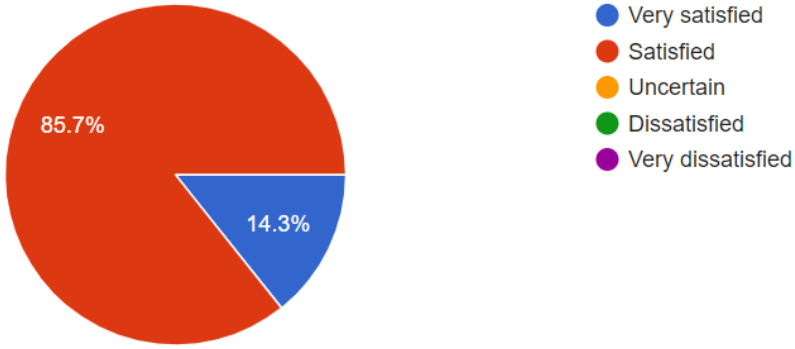


5. The program is effective in developing independent thinking.



6. The program is effective in developing written communication skills.



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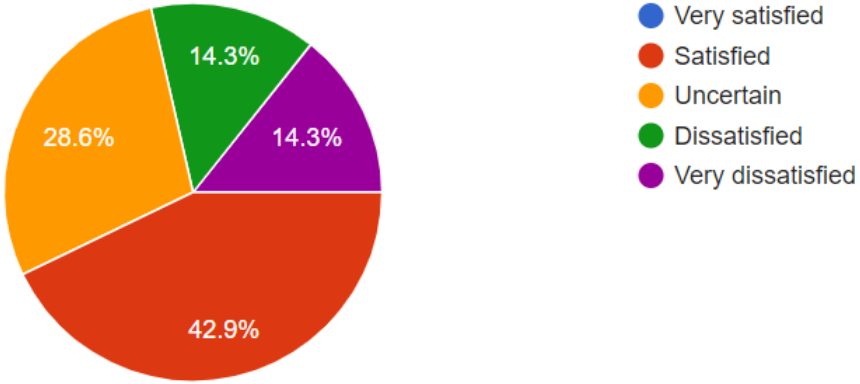
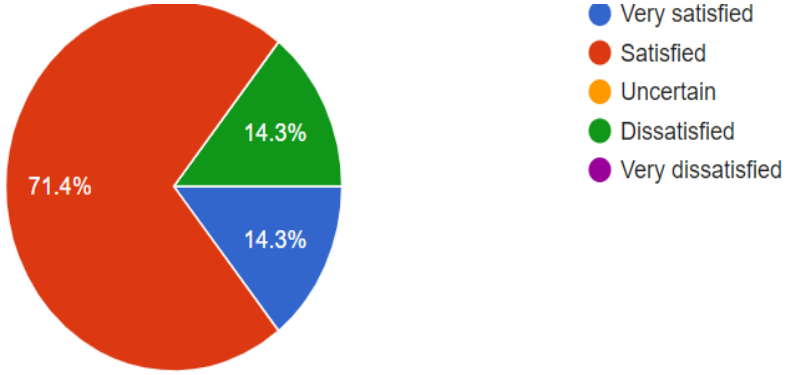
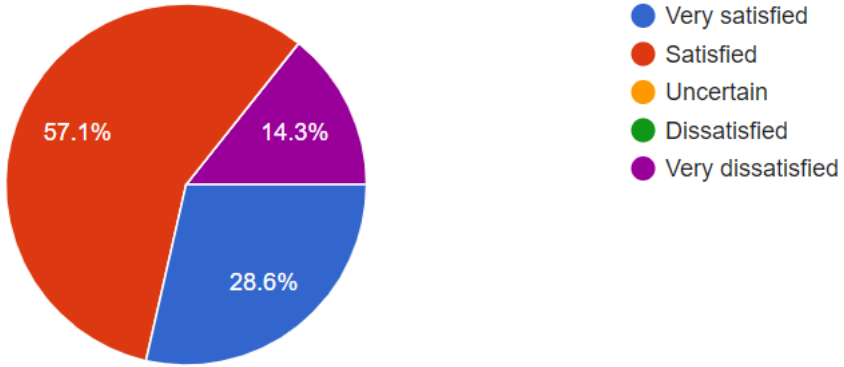


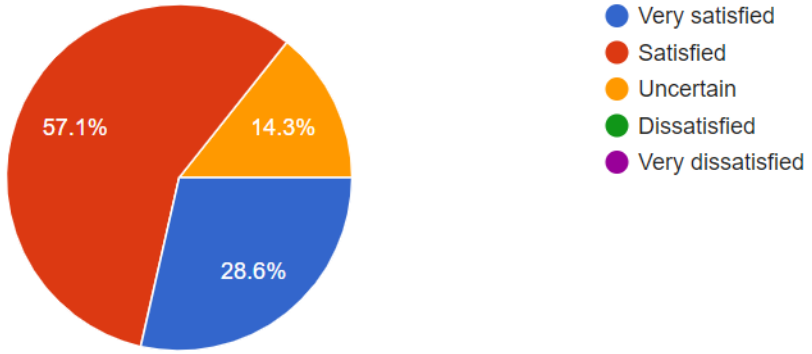
8. The objectives of the program have been fully achieved.



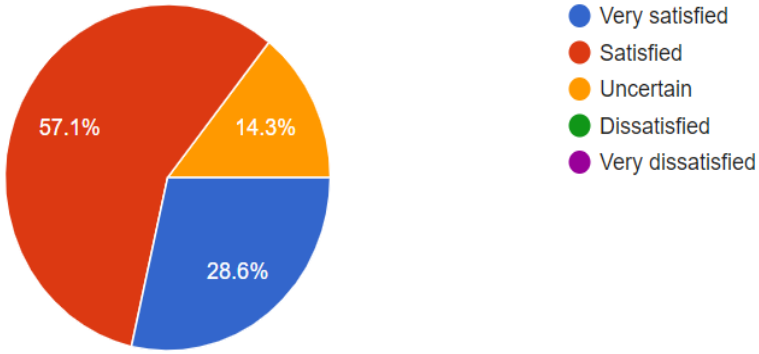
9. Whether the contents of curriculum are advanced and meet program objectives.



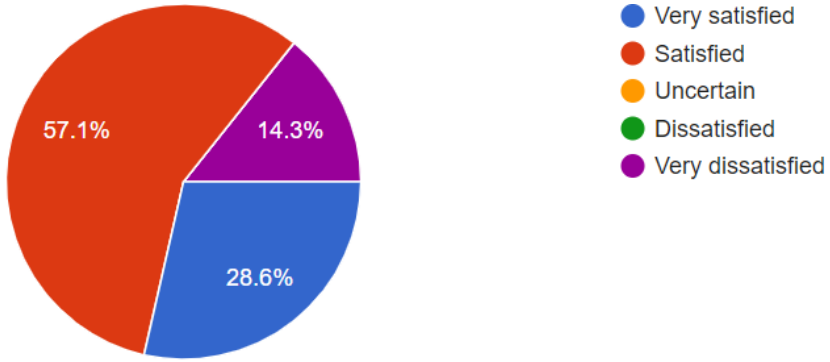
10. Faculty was able to meet the program objectives.



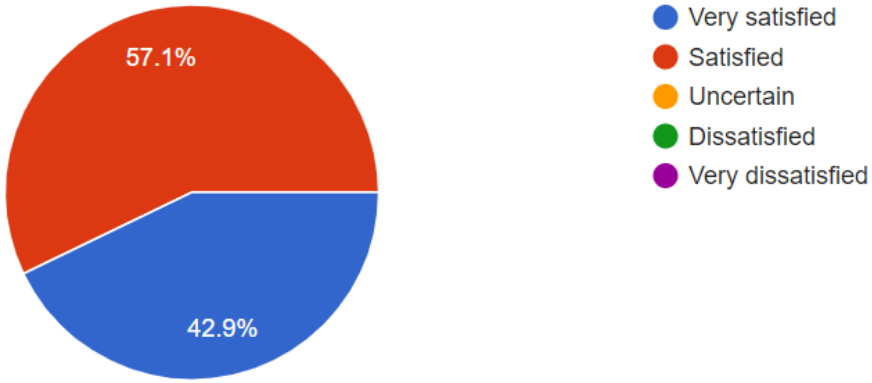
11. Environment was conducive for learning.



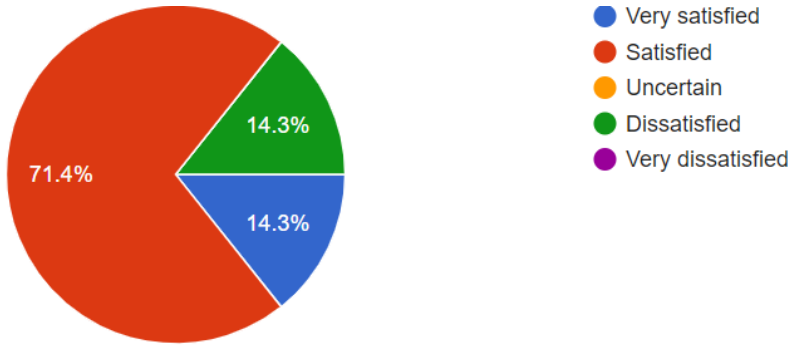
12. Whether the Infrastructure of the department was good.



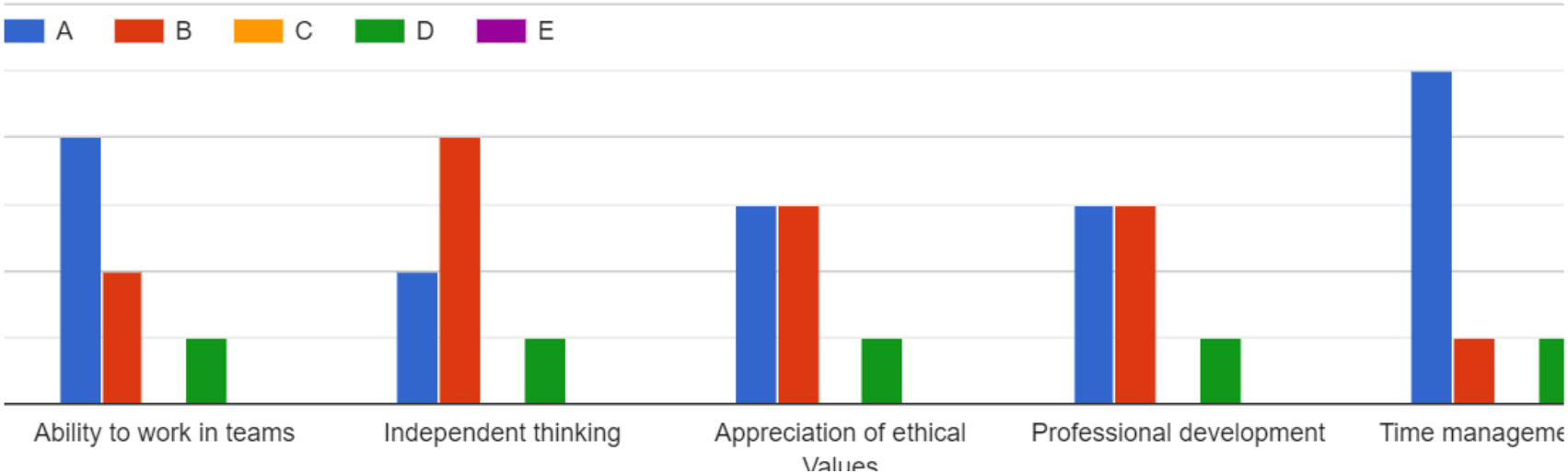
13. Whether the program was comprised of Co-curricular and extra-curricular activities.



14. Whether scholarships/ grants were available to students in case of hardship.



15. The internship experience is effective in enhancing.



13 Annexure D: Lesson Plan

<table>
<tr><th colspan="8">COURSE READINESS</th></tr>
<tr><td>Subject Title:</td><td colspan="3">Object Oriented Programming</td><td>Course code</td><td colspan="3">CS-423</td></tr>
<tr><td>Semester</td><td colspan="3">BSIT (2nd)</td><td>Department</td><td colspan="3">IT</td></tr>
<tr><td>Course Introduction</td><td colspan="7">This unit introduces C++ as an object-oriented programming language, building on existing knowledge of C and Java. The unit covers the C++ language with a focus on its object-oriented features, and how these can be implemented as part of program designs and implementation. You will also study and gain practical experience with the implementation issues related to object-oriented techniques, be able to build good quality software using object-oriented techniques and understand the role of patterns in object-oriented design.</td></tr>
<tr><td>Learning Objective</td><td colspan="7">At the completion of this unit students will be able to:
• Understand object-oriented programming features in C++
• Apply these features to program design and implementation
• Understand object-oriented concepts and how they are supported by C++
• Gain some practical experience of C++
• Understand implementation issues related to object-oriented techniques
• Build good quality software using object-oriented techniques Understand the role of patterns in object-oriented design.</td></tr>
<tr><td>Recommended Textbook</td><td colspan="7">▪ C++ How to Program, Harvey M. Deitel, Paul J. Deitel, Prentice Hall; 7th Edition, 1997, ISBN: 013528910-6.
▪ IT Series Object Oriented Programming with C++</td></tr>
<tr><td>Grading System</td><td>Assignments</td><td>5%</td><td>Projects</td><td>05%</td><td>Midterm Exam</td><td colspan="2">22.5%</td></tr>
</table>

(Weighted Percentages)	Quizzes	5%	Presentations	Nil	Final Term Exam	Theory: 37.5% Practical: 25%
Other Rules						
Logistics	Class Time	Friday: 10am-12:00pm		Consulting Hours	Mon-Fri 03:00pm-04:30pm	
	Venue	Zoom App/ Google Classroom		Contact Information	washma.amir1@gmail.com 0335-4266771 bilalmazhar88@gmail.com 0345-6931085	

Lesson Plan

WEEK-1

Lecture	TOPICS	Content delivered	Reference source	Assignments/Quiz/Class Activity)
1	**Structures** • Defining Structures • Declaring Structure Variables	**Structures** Defining Structures Declaring Structure Variables	**Recommended Book/other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, Prentice Hall **book edition: 2nd chapter no: 02 page no:**	

2	• Initializing and Accessing Members of Structures Using Nested Structures • Initializing Nested Structures • Passing structure as Function Parameter	• Initializing and Accessing Members of Structures Using Nested Structures • Initializing Nested Structures • Passing structure as Function Parameter	**Recommended Book/other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, Prentice Hall **book edition: 2nd chapter no: 02 page no:**	**Assignment 01:** Structures **Due Date:** March 12, 2020
LAB	*Writing programs that input data into members of structure and then print data from the members of structure.* *Writing programs that copy one structure variable to another variable.* *Writing programs that swap two structure type variables, Print the results before and after swapping.*	*Writing programs that input data into members of structure and then print data from the members of structure.* *Writing programs that copy one structure variable to another variable.* *Writing programs that swap two structure type variables, Print the results before and after swapping.*		

WEEK – 2

Lecture	TOPICS	Content delivered	Reference source	Comments

3	**Functions** • Introduction to Functions • Declaration, Calling and Definition of Functions • Passing Arguments(constants & variables) to Functions • Returning Values from Functions	**Functions** • Introduction to Functions • Declaration, Calling and Definition of Functions • Passing Arguments(constants & variables) to Functions • Returning Values from Functions	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, Prentice Hall **book edition: 7th** **chapter no: 06 page no:**	
4	• Passing Structure as Argument to Functions • Returning structure from functions • Passing Pointers as Arguments to Function	• Passing Structure as Argument to Functions • Returning structure from functions • Passing Pointers as Arguments to Function	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, Prentice Hall **book edition: 7th** **chapter no: 06**	**Assignment 02:** Functions
			page no:	**Due Date:** March 25th, 2020

LAB	*Writing programs that input data into an array and then print data using pointer notation.* *Writing programs that find out the maximum/minimum value in an array through pointer notation* *Writing program that return structure from a function.* *Writing program to swap two values by passing pointers to function.* *Writing program to copy one string to another string using pointers.*	*Writing programs that input data into an array and then print data using pointer notation.* *Writing programs that find out the maximum/minimum value in an array through pointer notation* *Writing program that return structure from a function.* *Writing program to swap two values by passing pointers to function. Writing program to copy one string to another string using pointers.*		

WEEK – 3

Lecture	TOPICS	Content delivered	Reference source	Comments
5	**Object Oriented Programming Concepts** • Object Oriented Approach • Objects and Classes	**Object Oriented Programming Concepts** • Object Oriented Approach • Objects and Classes	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition:** **7th** **chapter no: 03**	

			page no:	
6	Characteristics of OO Languages (Inheritance, Polymorphism, Reusability, Overloading), Advantages of OOP.	Characteristics of OO Languages (Inheritance, Polymorphism, Reusability, Overloading), Advantages of OOP.	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 03 page no:**	
LAB	Programming Exercise	Programming Exercise		

WEEK – 4

Lecture	TOPICS	Content delivered	Reference source	Comments
7	**Classes and Objects** • Class Encapsulation • Abstraction • Information Hiding • Access Specifier	**Classes and Objects** • Class Encapsulation • Abstraction • Information Hiding • Access Specifier	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 09 page no:**	

8	• Constructors • Default Copy Constructor • Objects as Function Arguments • Functions returning Objects	• Constructors • Default Copy Constructor • Objects as Function Arguments • Functions returning Objects	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 09 page no:**	**Assignment 03:** Classes **Due Date:** April 09th, 2020
LAB	□ Programming Exercise	□ Programming Exercise		

WEEK – 5

Lecture	TOPICS	Content delivered	Reference source	Comments
9	**Classes and Objects** • Array of Objects • Passing/Returning objects • Destructor	**Classes and Objects** • Array of Objects • Passing/Returning objects • Destructor	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 10 page no:**	
10	• Static Class Data • Constant and Classes • Constant Member Function • Constant Objects	• Static Class Data • Constant and Classes • Constant Member Function • Constant Objects	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 10 page no:**	**Quiz 01: Classes** **Date: April 13, 2020**

LAB	Programming Exercise	Programming Exercise		

WEEK – 6

Lecture	TOPICS	Content delivered	Reference source	Comments
11	**Inheritance** • Derived and Base Classes. • Derived Class Constructors • Protected Specifier • Overriding	**Inheritance** • Derived and Base Classes. • Derived Class Constructors • Protected Specifier • Overriding	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 12**	
			page no:	
12	• Overriding with • Scope Resolution overridden function	• Overriding • Scope Resolution with overridden function	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 12 page no:**	**Assignment 04:** Inheritance **Dead Line:** April 22, 2020
LAB	Programming Exercise	Programming Exercise		

WEEK – 7

Lecture	TOPICS	Content delivered	Reference source	Comments
13	**Levels of Inheritance** • Single Inheritance • Multilevel Inheritance	**Levels of Inheritance** • Single Inheritance • Multilevel Inheritance	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 12 page no:**	

14	• Multiple Inheritance • Containership	• Multiple Inheritance • Containership	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 12 page no:**	**Assignment 05:** Inheritance **Due Date:** May 06, 2020
LAB	Programming Exercise	Programming Exercise		

WEEK – 8

Lecture	TOPICS	Content delivered	Reference source	Comments
15	Object Oriented Designing/Modeling	Object Oriented Designing/Modeling	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 18 page no:**	

16	String Classes	String Classes	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 18 page no:**	
LAB	Programming Challenge	Programming Challenge		

WEEK – 9

Lecture	TOPICS	Content delivered	Reference source	Comments
17	**Operator Overloading** Unary Operator	**Operator Overloading** Unary Operator	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 11 page no:**	
18	Binary Operator	Binary Operator	**Recommended Book /other:**	**Assignment 06:**
			C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 11 page no:**	Operator Overloading **Due Date:** May 18, 2020
LAB	Programming Exercise	Programming Exercise		

WEEK – 10

Lecture	TOPICS	Content delivered	Reference source	Comments
19	**Polymorphism** • Virtual Function • Inline Function • Static Function	**Polymorphism** • Virtual Function • Inline Function • Static Function	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 13 page no:**	
20	• Late and Early binding • Friend Function • Abstract Classes	• Late and Early binding • Friend Function • Abstract Classes	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 13 page no:**	**Assignment 07:** Polymorphism **Due Date:** May 27, 2020
LAB	Programming Exercise	Programming Exercise		

WEEK – 11

Lecture	TOPICS	Content delivered	Reference source	Comments
21	**Memory Management** • Use of New and Delete Keyword. • Pointer to Object	**Memory Management** • Use of New and Delete Keyword. • Pointer to Object	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th**	

			chapter no: 08 **page no:**	
22	• Pointer to pointer • Array of Pointer to string	• Pointer to pointer • Array of Pointer to string	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th** **chapter no: 08** **page no:**	**Assignment 08:** Memory Management **Due Date:** June 04, 2020
LAB	Programming Exercise	Programming Exercise		

WEEK – 12

Lecture	TOPICS	Content delivered	Reference source	Comments
23	**Templates** Template Functions	**Templates** Template Functions	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th** **chapter no: 14** **page no:**	

24	Class Templates	Class Templates	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 14 page no:**	**Assignment 09:** Templates **Due Date:** June 10, 2020
LAB	Programming Exercise	Programming Exercise		

WEEK – 13

Lecture	TOPICS	Content delivered	Reference source	Comments
25	**Exception Handling** • Exceptions syntax • Simple and Multiple Exceptions	**Exception Handling** • Exceptions syntax • Simple and Multiple Exceptions	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 16 page no:**	
26	Exceptions with arguments, Programming Exercise	Exceptions with arguments, Programming Exercise	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 16 page no:**	
LAB	Programming Exercise	Programming Exercise		

WEEK – 14

Lecture	TOPICS	Content delivered	Reference source	Comments
27	**Standard Template Library** Function Templates	**Standard Template Library** Function Templates	**Recommended Book /other:**	
	Class templates Vector Least De-queue	Class templates Vector Least De-queue	C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 07 page no:**	
28	Iterator Function Objects	Iterator Function Objects	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 07 page no:**	
LAB	Programming Exercise	Programming Exercise		

WEEK – 15

Lecture	TOPICS	Content delivered	Reference source	Comments
29	**Files and Streams** • Streams, String I/O • Character I/O • Object I/O • I/O With Multiple Objects • File Pointers	**Files and Streams** • Streams, String I/O • Character I/O • Object I/O • I/O With Multiple Objects • File Pointers	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 15 page no:**	

30	• File Pointers • Disk I/O With Member Functions • Error Handling • Redirection of Input & Output • Command Line Arguments • Printer Output	• File Pointers • Disk I/O With Member Functions • Error Handling • Redirection of Input and Output • Command Line Arguments	**Recommended Book /other:** C++ How to Program, Harvey M. Deitel, Paul J. Deitel, **book edition: 7th chapter no: 15 page no:**	**Assignment 10:** File Handling **Due Date:** June 19th, 2020
		Printer Output		
LAB	Programming Exercise	Programming Exercise		

WEEK – 16

Lecture	TOPICS	Content delivered	Reference source	Comments
29-30	**Project Demos and Viva**	**Project Demos and Viva**	**Recommended Book /other: book edition : chapter no: page no:**	

COURSE READINESS						
Subject Title:	Theory of Automata and Formal Languages		**Course code**	CS-536		
Semester	BSCS 5th		**Department**	CS		
Course Introduction	This is an introductory course on the theory of computation. Students are introduced to the concept of formal languages and automata. Formal languages cover regular grammar, regular expression, context free grammar and language. In automata they shall learn about finite automata (deterministic and non-deterministic) and pushdown automata. They shall also learn about fundamental concepts of Turing machines.					
Learning Objective	The objectives of this course are Presenting the theory of finite automata, as the first step towards learning advanced topics, such as compiler design, Applying the concepts learned in fundamental courses such as Discrete Mathematics, in a theoretical setting; in particular, the application of proof techniques, discussing the applications of finite automata towards text processing and developing an understanding of computation through Turing Machines.					
Recommended Textbook	**REQUIRED TEXTS:** • Introduction to Automata Theory, Languages, and Computation, 2/E, John E. Hopcroft, Rajeev Motwani, Jeffrey D. Ullman, Addison-Wesley 2001. ISBN 0-201-44124-1. • Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0471-13772-3 **REFERENCES:** • Introduction to Formal Languages and Automata, Peter Linz, D. C. Heath and Company, 1990. ISBN: 0-669-17342-8. Handouts/Slides					
Grading System (Weighted Percentages)	Assignments	13%	Projects	-	Midterm Exam	30%
	Quizzes	7%	Presentations	-	Final Term Exam	50%
Other Rules						
Logistics	Class Time		Consulting Hours			
	Venue	GIMS	Contact Information			

Lesson Plan				
WEEK-1				
Lecture	**TOPICS**	**Content delivered**	**Reference source**	**Assignments/Quiz/Class Activity)**
1	**Introduction to Automata**	Review of proof techniques • Introduction to Formal Proof • Introduction to Automata	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3	
2	**Introduction to Automata**	• Language in Abstract • Introduction to Formal Languages • Alphabet sets and Languages	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3	

WEEK – 2

Lecture	**TOPICS**	**Content delivered**	**Reference source**	**Comments**

3	**Introduction to Automata**	• A new method for defining Language • Finite and Infinite Languages • Structural Representation • Automata and Complexity	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Assignment 1 (Language Representations Examples) Submission: March 9th,2020
4	**Introduction to Automata**	• Kleen Closure and Positive Closure • Unification, Recursive Definitions	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 3

Lecture	TOPICS	Content delivered	Reference source	Comments

5	**Finite Automata**	• Finite State Automata • Even-Even Revisited • Deterministic Finite State Automata (DFA) • The Language of a DFA	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Quiz 1 (Language Representations)
6	**Finite Automata**	• Non Deterministic Finite State Automata (NFA) • The extended Transition Function • The Language of NFA Problems	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 4

Lecture	TOPICS	Content delivered	Reference source	Comments
7	**Finite Automata**	• Designing DFAs • Equivalence of NFA and DFA	**Recommended Book/other:** Introduction to Computer Theory 2/E,	Assignment 2 (Regular Expressions)

		• Problems	Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Submission: March 23rd ,2020
8	**Finite Automata**	• • Epsilon NFA Equivalence of DFAs • Epsilon Closure	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 5

Lecture	TOPICS	Content delivered	Reference source	Comments
9	**Transition Graphs**	• Relaxing the restriction on input • Generalized Transition Graph • Nondetrminism	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3	

			book edition:2nd chapter no: page no: PPT Slides	
10	**Regular Expressions & Languages**	• • Regular Grammars • Language associated with Regular Expression Building Regular Expressions for regular languages	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 6

Lecture	TOPICS	Content delivered	Reference source	Comments
11	**Regular Expressions & Languages**	• Finite Languages are Regular • Introducing EvenEven • Operators of Regular Expression • Precedence of operator of Regular Expression	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:**	Assignment 3 (Finite Automata) Submission: April 6th ,2020
			PPT Slides	

12	**Regular Expressions & Languages**	• Finite Automata and Regular Expressions • From DFA to Regular Expression • Converting Regular Expression to Automata	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 7

Lecture	TOPICS	Content delivered	Reference source	Comments
13	**Properties of Regular Languages**	• Algorithms for Regular Languages • Proving a language not to be regular • Identification of nonregular Languages using pigeon hole principle	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Quiz 2 (R.E & FA)
14	**Properties of Regular Languages**	• Closure property of regular languages	**Recommended Book/other:** Introduction to Computer Theory 2/E,	

		• Algorithms for Regular • Languages Complement of regular languages	Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 8

Lecture	TOPICS	Content delivered	Reference source	Comments
15	**Properties of Regular Languages**	• Intersection of regular languages • Finite Automata with output	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Assignment 4 (Examples of variants of FA) Submission: April 20th,2020
16	**Properties of Regular Languages**	• Moore Machines • Mealy Machines • Moore = Mealy	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons,	

			Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 9

Lecture	TOPICS	Content delivered	Reference source	Comments
17	**Regular Languages**	• Regular and Non regular Languages • Deciding whether language is regular or nonregular	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	
18	**Regular Languages**	• Decidability • Decidable Languages • Proof that every context free Languages are decidable	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd**	

			chapter no: page no: PPT Slides	

WEEK – 10

Lecture	TOPICS	Content delivered	Reference source	Comments
19	**Regular Languages**	• Decidability (Equivalence, Finiteness) • Problems	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Assignment 5 (RL properties) Submission: May 4th ,2020
20	**Push down automata (PDA)**	• Introduction • Defining PDA • Language accepted by PDA	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 11

Lecture	TOPICS	Content delivered	Reference source	Comments

21	**Push down automata (PDA)**	• Deterministic PDA's • Regular Languages and Deterministic PDA. • DPDA and Context Free Languages	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Quiz 3 (variants of FA & PDA)
22	**Push down automata (PDA)**	• DPDA and Context Free Languages • Non-Deterministic PDA • Problems	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 12

Lecture	TOPICS	Content delivered	Reference source	Comments
23	**Context-free Languages (CFL)**	• Parse Trees	**Recommended Book/other:**	Assignment 6

		• Constructing Parse Trees • The Yield of Parse Trees • Inference, Derivation and Parse Trees	Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	(push down Automata) Submission: May 18th ,2020
24	**Context-free Languages (CFL)**	• • Derivations Left Most & Right most • Derivation Ambiguity	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 13

Lecture	TOPICS	Content delivered	Reference source	Comments
25	**Context-free Languages (CFL)**	• Removing ambiguity from grammar	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons,	

		• Leftmost derivation is a way to remove ambiguity. • Context Free Grammar (CFG) • Context Free Language (CFL)	Inc 1997. ISBN 0-471-13772-3 **book edition:2nd** **chapter no: page no:** PPT Slides	
26	**PDA/CFG Equivalence**	• • Building a PDA for CFG Building CFG for PDA, Problems	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd** **chapter no: page no:** PPT Slides	

WEEK – 14

Lecture	TOPICS	Content delivered	Reference source	Comments
27	**Properties of Context-free Languages**	• Simplification of Grammar • Chomsky-normalform • Converting grammar to Chomsky Normal Form	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd**	Assignment 7 (PDAs & CFGs) Submission: June 1st ,2020

			chapter no: **page no:** PPT Slides	
28	**Properties of Context-free Languages**	• Greinbach Normal Form Grammars • Converting grammar to GNF • Applications of Normal Forms	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd** **chapter no: page no:** PPT Slides	

WEEK – 15

Lecture	TOPICS	Content delivered	Reference source	Comments
29	**Properties of Context-free Languages**	• Pumping Lemma (Examples) • Properties of Pumping Lemma • Pumping Lemma for Regular Languages	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd** **chapter no: page no:** PPT Slides	Quiz 4 (CFGs)
30	**Turing Machines**	• Introduction	**Recommended Book/other:**	

		• Language of a Turing Machine • The subprogram INSERT • The subprogram DELETE	Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	

WEEK – 16

Lecture	TOPICS	Content delivered	Reference source	Comments
31	**Turing Machines**	• Transition diagram for turning machine • Turning Machine and Language accepters • Variations • Introduction to multitape turning machine	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons, Inc 1997. ISBN 0-471-13772-3 **book edition:2nd chapter no: page no:** PPT Slides	Assignment 8 (Turing Machines) Submission: June 14th,2020
32	**Course Review**	• Course Review • Question/Answers • Discussion	**Recommended Book/other:** Introduction to Computer Theory 2/E, Daniel I. A. Cohen John Wiley & Sons,	

			Inc 1997. ISBN 0-471-13772-3 **book** **edition:2nd** **chapter no:** **page no:** PPT Slides	

COURSE READINESS			
Subject Title:	*Software Engineering*	***Course code***	CS-452
Semester	*BSIT*	***Department***	IT
Course Introduction	Software engineering is a field of study related to all aspects of the software life cycle, covering the problem analysis, design, implementation, modification and maintenance of software. This course is intended to provide the students with an overall view of Software Engineering as an engineering discipline and with insight into the processes of software development .		
Learning Objective	• To understand the phases and activities of the software development process. To understand how to elicit requirements from a client and specify them. To create a project plan • To create and analyze design models • To learn various quality assurance techniques, including unit testing and functional testing. • To apply the appropriate software methods for maintaining, restructuring available software and managing software development.		

Recommended Textbook	• Software Engineering: A Practitioner's Approach, By R. S. Pressman, 8th Edition, 2010. • Software Engineering, By Ian.Sommerville, 9th Edition ,2010. Software Requirements, Wiegers K. &Beatty J., 3rd Ed. Microsoft Press, 2013					
Grading System (Weighted Percentages) ***Percentage is divided based on total marks 60***	Assignments	8%	Projects	5%	Midterm Exam	20%
	Quizzes	5%	Presentations		Final Term Exam Lab Practical	50% 20%
Other Rules	The quizzes will be unannounced and normally conduct in last 5-10 minutes. The question framed is to test the concepts involved in the last few lectures and/or reading assignments. It will be The instructor's will to choose the number of quizzes for evaluations purposes.					
	In order to give practice and comprehensive understanding of subject, home assignments will be given. The students are advised to do the assignment themselves. Copying of assignment is highly discouraged and taken as cheating case and will be forwarded for disciplinary action. The questions in assignments are more challenging to give students the confidence and extensive knowledge about the subject and enable them to prepare for the exams.					
Logistics	Class Time	Tuesday 10:00-11:30 Wednesday 10:00-11:30	Consulting Hours	3 hours		
	Venue	Online classes (Google class room and zoom lecture)	Contact Information	Zainab.mehmood@gim.edu.pk 03016243297		

Lesson Plan

WEEK-1

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity
1	Introduction to Software	▪ Nature of Software ▪ Software Applications ▪ Problems of Software Industry Software Engineering	Chapter 1 of Book Software Engineering A Practitioner's Approach By Roger S.	

			Pressman 8th Edition	
2	Software Engineering	Software Engineering ▪ Software Process ▪ Software Process Framework Umbrella Activities	Chapter 2 of Book Software Engineering A Practitioner's Approach By Roger S. Pressman 8th Edition	

WEEK – 2

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity
3	**Software Process**	• Software Process and Structure ▪ Generic Process Model • Identifying Task Test ▪ Process Assessment and Improvements	Chapter 3 of Book Software Engineering A Practitioner's Approach By Roger S. Pressman 8th Edition	Class Quiz: Layers of Software Unique nature Mobapplications
4	Capability Maturity Model	▪ Process measurement ▪ The SEI Process Capability Maturity Model (CMMI) Process classification	**CMMI official website**	

WEEK – 3

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity

5	**Software Process Model**	▪ Software Process Model ▸ Waterfall Model ▸ Prototype Model ▸ RAD Model	Chapter 4 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	
6	**Software Process Model**	▸ Evolutionary Model ▸ Unified Process Model	Chapter 4 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	

WEEK – 4

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity
7	**Agile Development**	▪ Agility concepts and Models Extreme Programming Model (XP)	Chapter 5 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	
8	**Agile Development**	▪ SCRUM ▪ Adoptive software development ▪ Dynamic System Development	Chapter 5 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	Assignment: Software Process Models Comparison Due Date : 23-03-2020

WEEK – 5

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity

9	Software Requirements Engineering	Software Requirements ▪ Functional and nonfunctional requirements ▪ User requirements ▪ System requirements The software Requirement document	Chapter 8 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	
10	Requirements engineering processes	▪ Feasibility Study ▪ Requirements Analysis ▪ Requirements Elicitation ▪ Requirements Specifications ▪ Requirements Validation Requirements Management	Chapter 8 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	

WEEK – 6

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity
11	**Software Requirement Specification**	SRS Development	Chapter 8 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	Assignment: Vision and Scope Document Due Date 02-04-2020

12	**Software Requirement Specification**	Data Modeling ▪ Uses Case Design ▪ Use case table ▪ Use Case Diagrams	Chapter 5 of book Software engineering by Ian Sommerviille 9th edition	**Assignment:** **11-04-2020**

WEEK – 7

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity
13	**State Transition Diagram**	• STD Fundamentals • Design STD,	Chapter 5 of book Software engineering by Ian Sommerviille 9th edition	
14	Data Flow Diagram	• Data Flow Diagram fundamentals • Rules of DFD • Levels of DFD • Context level DFD	Chapter 5 of book Software engineering by Ian Sommerviille 9th edition	

WEEK – 8

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity
15	Data Flow Diagram	• Level of DFD • Numbering of Levels • 0—level DFD • 1-Level DFD	Chapter 5 of book Software engineering by Ian Sommerviille 9th edition	Assignment: Design DFD Due Date 27-04-2020

16	Project Management	▪ Project Planning ▪ Project Scheduling	Chapter 33 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	
		Develop Project Plan		

WEEK – 9

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity
17	**Software Project estimations**	Risk Management Software Project Estimation	Chapter 35 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	
18	**Software Project estimations**	Decomposition Techniques	Chapter 34 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	Quiz : Due Date 8-052020

WEEK – 11

Lecture	TOPICS	Content delivered	Reference source	Assignment/Quiz/Class Activity

19	Setting the Requirement Priorities	Why prioritizes requirements Game play with prioritizing requirements • Techniques for prioritizing requirements (In-Out, Pair Wise Comparisons, Three level, MoSCoW, $100)	**Recommended Book/other:** *Software Requirement Engineering by Wiegers K* **book edition:** *3rd edition* **chapter no:16 page no:314-321** Attach slides copy with reference source	
20	Setting the Requirement Priorities	Prioritization Based on Value Cost And Risk	**Recommended Book/other:** *Software Requirement Engineering by Wiegers K* **book edition:** *3rd edition* **chapter no:16 page no:322-327** Attach slides copy with reference source	**Assignment : Estimate software Project Cost 22-05-2020**

WEEK – 12

Lecture	TOPICS	Content delivered	Reference source	Comments
21	Chapter 16 Setting the Requirement Priorities	• Prioritization Based on Value Cost And Risk	**Recommended Book/other:** *Software Requirement Engineering by Wiegers K* **book edition:** *3rd edition* **chapter no:16 page no:322-327**	

			Attach slides copy with reference source	
22	Chapter 17 Validating the Requirements	V Model of software Development Validation Vs Verification How they V VS V is different Reviewing the requirements	**Recommended Book/other:** *Software Requirement Engineering by Wiegers K* **book edition:** *3rd edition* **chapter no:16 page no:329-336** Attach slides copy with reference source	**Quiz-** Validating the Requirements June 04-06-2020

WEEK – 13

Lecture	TOPICS	Content delivered	Reference source	Comments
23	User Interface Design	▪ Interface Importance ▪ Design Concepts ▪ Golden Rules of User Interface Interface Designing Activities	Chapter 7 of Book Human Computer Interaction by Alan Dix Book	

24	Software Testing	▪ Test Case Design ▪ White-Box Testing Basis Path Testing	Chapter 23 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	

WEEK – 14

Lecture	TOPICS	Content delivered	Reference source	Comments
25	Software Testing	▪ Control Structure Testing Black-Box Testing	Chapter 24 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	
26	Software Re-engineering	▪ Software Reengineering ▪ Source code translation Reverse engineering	Chapter 36 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	**Assignment Design** **Test Case** **24-06-2020**

WEEK – 15

Lecture	TOPICS	Content delivered	Reference source	Comments
27		▪ Program structure improvement ▪ Program modularization Data re-engineering	Chapter 36 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	
28		▪ Software Architecture Design ▸ System Structuring Control models	Chapter 36 of Book Software Engineering A Practitioner's Approach by Roger S. Pressman 8th Edition	

WEEK – 16

Lecture	TOPICS	Content delivered	Reference source	Comments

29	Revision		**Recommended Book/other: book edition: chapter no: page no:** Attach slides copy with reference source	
30	Revision		**Recommended Book/other: book edition: chapter no: page no:** Attach slides copy with reference source	

14 Annexure E: Survey for Teaching Method Evaluation

Online Class Report

instructor Name:	**Department/Course:**	**Class:**

Week	**Date**	**Lecture**	**Arrival Time**			**Leave Time**		
3			On time ☐	Late ☐	Specify time:	On time ☐	Before ☐	Specify time:
Day 02			On time ☐	Late ☐	Specify time:	On time ☐	Before ☐	Specify time:
Day 03			On time ☐	Late ☐	Specify time:	On time ☐	Before ☐	Specify time:

Day: 01	**Date:**		**Class:**
instructor Attitude/Behavior			
Mobile Use	Once ☐	Thrice ☐	Number of times ☐	Comments:
Sitting on chair	Once ☐	Thrice ☐	Number of times ☐	Comments:
Eating	Once ☐	Thrice ☐	Number of times ☐	Comments:
Class Environment			
Students are desciplined	Never ☐	Some time ☐	All the time ☐	Comments:
Student's Group activity	Never ☐	Some time ☐	All the time ☐	Comments:
instructor maintained formal attiude	Never ☐	Some time ☐	All the time ☐	Comments:

Day: 02	**Date:**		**Class:**
instructor Attitude/Behavior			
Mobile Use	Once ☐	Thrice ☐	Number of times ☐	Comments:

Sitting on chair	Once ☐	Thrice ☐	Number of times ☐	Comments:
Eating	Once ☐	Thrice ☐	Number of times ☐	Comments:
Class Environment				
Students are desciplined	Never ☐	Some time ☐	All the time ☐	Comments:
Student's Group activity	Never ☐	Some time ☐	All the time ☐	Comments:
instructor maintained formal attiude	Never ☐	Some time ☐	All the time ☐	Comments:

Day: 03	**Date:**		**Class:**
instructor Attitude/Behavior			
Mobile Use	Once ☐	Thrice ☐	Number of times ☐	Comments:
Sitting on chair	Once ☐	Thrice ☐	Number of times ☐	Comments:
Eating	Once ☐	Thrice ☐	Number of times ☐	Comments:
Class Environment				
Students are desciplined	Never ☐	Some time ☐	All the time ☐	Comments:
Student's Group activity	Never ☐	Some time ☐	All the time ☐	Comments:
instructor maintained formal attiude	Never ☐	Some time ☐	All the time ☐	Comments:

_____

CMO Signature

Verified by
Quality Enhancement Department (QED)

Performa for Teacher's Work Evaluation

Start Date: _____ **End Date:** _____

instructor's Name: _____ **Course No:** _____

Class/Section: _____ **Name of Subject:** _____

Sr. No.	Percentage of Course Executed	instructor Feedback	Reason (if not taken)	Cross Observation
1	Number of Assignments taken			
2	Number of Assignments taken			
3	Number of Presentation taken			
4	Number of Assignments marked			
5	Number of Assignments marked			
6	Number of Presentation marked			
7	Percentage of marks uploaded on sessional sheets/portal			
8	Any other activity done in the class			
9	Number of classes/labs taken			
10	Percentage of Content covered/highlighted			

Date: _____ **Verified by:** _____

instructor Feedback:

Observer Feedback:

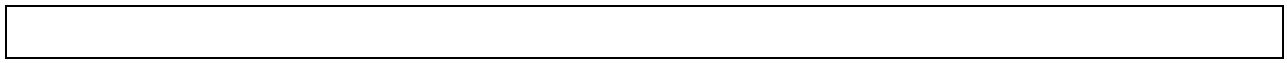
QED Feedback:

Date: _____ **Verified by:** _____

Survey for Enhancing Quality of Education

instructor Name		**Department**	
subjects currently teaching			
1.	Subject in nature	□ Theoretical	□ Practical
Practical application:			
Does this subject meet the needs and expectations of industry?			
2.	Subject in nature	□ Theoretical	□ Practical
Practical application:			
Is this subject meets the need and expectations of industry?			
3.	Subject in nature	□ Theoretical	□ Practical
Practical application:			
Is this subject meets the need and expectations of industry?			
4.	Subject in nature	□ Theoretical	□ Practical
Practical application:			
Is this subject meets the need and expectations of industry?			
How quality graduates can be produced who would meet the expectations of employer in terms of the knowledge, skills, and competencies?			
Do you think, you are delivering updated knowledge?			
What mechanism do you suggest towards achieving learning outcomes of a given study program			
How do you define a good quality teacher			
What strategies do you generally use in class while teaching as how you clarify the concepts that you teach to your students?			

How do you relate disciplinary knowledge to other subject areas?
Is this way working for students to make them clear?
How do you apply theoretical knowledge from discipline to practical situation?
What have you done to keep yourself up to date with developments in your subject area?
Do you plan your teaching in accordance to achieve the desire objectives?
What do you consider to be the key elements of teaching a successful lesson?
How many steps do you follow for planning a lesson? Can you give me an example of a lesson to which you consider good, and you are asked to repeat that lesson then what would you do to make that different?
What is your opinion about the use of modern instructional techniques in teaching relevant to your subject area?
Are these techniques beneficial for students?
Do you know the specific uses of technology in your discipline?
How you find technological resources specific to discipline?
Like is there any subject which you consider incomplete in teaching or learning if you do not use them?
Enlist technological tools use in your subject area
Suggestions..?



15 Annexure F: FYP Policy and Rubric

Gujrat Institute of Management Sciences
PMAS-Arid Agriculture University RWP
PROJECT MANAGEMENT OFFICE
Faculty of Computer Science & IT

SUPERVISOR CERTIFICATE FOR FYP PROPOSAL DEFENCE

(SUPERVISOR'S DETAIL)

SUPERVISOR NAME:		PROJECT ID: (To be filled by PMO)	
PROJECT TITLE:			
EMAIL ID:		CELL NO#	
ENTITLED AS:	☑ Permanent Visiting	DESIGNATION:	

(STUDENT'S DETAIL)

No.	NAME	ROLL NO	EMAIL	CELL	DEPT & BATCH (e.g. IT Fall-2017)
1					
2					
3					

(PROJECT'S DETAIL)

SUPERVISOR'S COMMENTS ABOUT PROJECT AND STUDENTS	

SUPERVISOR SIGNATURE

DATE:

PMO SIGNATURE

DATE:

Gujrat Institute of Management Sciences
PMAS-Arid Agriculture University RWP
PROJECT MANAGEMENT OFFICE
Faculty of Computer Science & IT

SUPERVISOR CERTIFICATE FOR FINAL EVALUATION
(SUPERVISOR'S DETAIL)

SUPERVISOR NAME:		**PROJECT ID:** (To be filled by PMO)	
PROJECT TITLE:			

(PROJECT DETAILS)

No.	Document Requirements	Progress		Your comments if any
1	Chapter 4 (Testing) of Documentation is updated and checked by your good self?	☐ Full Complete ☐ Partial Complete ☐ Not Complete		
2	Chapter 5 (User Manual) of Documentation is updated and checked by your good self?	☐ Full Complete ☐ Partial Complete ☐ Not Complete		
3	Are you satisfied that students have code the project by their own?	☐ Full Satisfied ☐ Partial Satisfied ☐ Not Satisfied		
4	What Grade do you recommend to committee according to your Evaluation of Project?	**Roll No**	**Grade**	

(STUDENTS CONTRIBUTION)

	Student's Roll #	Comments about Student
Supervisor's comments about students		
Supervisor's Comments about project's progress and general feedback		

SUPERVISOR SIGNATURE

DATE: _____

PMO SIGNATURE

DATE: _____

Gujrat Institute of Management Sciences
PMAS -Arid Agriculture University RWP
Department of Computer Science & IT

FYP Proposal Evaluation: ☑ BSCS ☐ BSIT ☐ MCS

Students	Reg.#	Name

Project ID: GIMS-BSCS-F2017
Date: _____
Time: _____
Venue: _____

Project Title	
Supervisor:	**Evaluators:**

Instructions: Please give minimum 15 minutes to each group. Use extra sheet if need to write more comments
Things to evaluate: Project Idea, Scope, Feasibility, Objectives, Proposal Documentation

Evaluation	Grade/Comment (A=excellent, B= v. good, C=good, D=average, E=poor)
Problem Identification and Understanding	
Scope	
Feasibility Study	
Objectives	
Documentation	
Committee's Q/A Defense	
Approval Decision (A=approved, B= conditionally approved*, C= Deferred**, D=Not approved***)	

**Minor changes in the proposal mentioned in the comment section are communicated to the supervisor. Supervisor is responsible for accommodating these changes.*
***If major changes are required in the proposal, proposal is deferred and students have to present formally once again before the panel.*
**** students have to present formally once again before the panel with a new proposal idea.*

Evaluator Name	Comments (mandatory, if approval decision is B,C or D)	Signature

_____
PMO CS&IT - GIMS

Gujrat Institute of Management Sciences
PMAS -Arid Agriculture University RWP
Department of Computer Science & IT
Mid Evaluation Form

☑ BSCS ☐ BSIT ☐ MCS

Project ID: _____ **Date:** _____
Time: _____ **Venue:** _____

Project Title:	
Supervisor:	**Evaluators:**

Instructions: -Please give minimum 20 minutes to each group.
-Evaluate each student individually.
-Use back sheet if need to write more comments

Things to evaluate: -UML as per accepted proposal ,Project diagrams, Presentation, Chapter 1 (Introduction) , Chapter (Req. & Analysis), Chapter 3

Sr. #	Reg.#	Name	Ch. 1 5 marks	Ch. 2 5 marks	Ch.3 10 marks	Doc. 5 marks	Total 25(5+5+10+5)
1							
2							
3							

Evaluator Name	Comments	Signature

_____
PMO | CS & IT
GIMS

Gujrat Institute of Management Sciences
PMAS -Arid Agriculture University RWP
Department of Computer Science & IT
Final Evaluation Form

☑ BSCS ☐ BSIT ☐ MCS **Status:** ☐ Passed ☐ Deferred

Project ID: **Date:**_____ **Time:** _____ **Venue:** _____

Project Title:	**Supervisor:**
	Evaluators:

Instructions: -Please give minimum 30 minutes to each group.
-Evaluate each student individually.
-Use back sheet if need to write more comments

Things to Evaluate: -Functional/Non-Functional Requirments, Test Cases (**Ch. 4**), User manual (**Ch. 5**), Doc. Formatting (**Doc**), Coding , demonstration and viva-voce

Sr. #	Student Reg.#	Student Name	Ch. 4 10	Ch. 5 5	Functional/Non Functional Requirements--80 marks			Sub-Total 95 (15+80)	Mid-Term 25	Total 120 (95+25)
			15 marks		Code (40)	Viva(30)	Demo (10)			
1										
2										
3										

Evaluator Name	Comments	Signature

_____
Campus Head
GIMS

16 Annexure F: Teacher and Course Evaluation

instructor Name: Mr. Bilal Mazhar
Course: CS-692 Visual Programming

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	97%	3%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	97%	3%	0%	0%	0%
The instructor has completed the whole course.	100%	0%	0%	0%	0%
The instructor provides additional material apart from the textbook.	100%	0%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistan's context.	97%	3%	0%	0%	0%
The instructor communicates the subject matter effectively.	97%	3%	0%	0%	0%
The instructor shows respect toward students and encourages class participation.	97%	0%	3%	0%	0%
The instructor maintains an environment that is conducive to learning.	93%	7%	0%	0%	0%
The instructor arrives on time in class.	93%	7%	0%	0%	0%
The instructor leaves on time.	90%	10%	0%	0%	0%
The instructor returns the graded scripts in a reasonable amount of time.	97%	3%	0%	0%	0%
The instructor was available during the specified office hours after class for consultations.	97%	3%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	97%	3%	0%	0%	0%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	93%	7%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	93%	7%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	93%	7%	0%	0%	0%
The course material is modern and updated.	90%	10%	0%	0%	0%

instructor Name: Mr. Gul Sher Ali
Course: CS-536 Theory of Automata and Formal Languages

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	76%	18%	6%	0%	0%
The instructor demonstrates knowledge of the subject.	76%	18%	6%	0%	0%
The instructor has completed the whole course.	82%	18%	0%	0%	0%
The instructor provides additional material apart from the textbook.	82%	18%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistan's context.	76%	18%	6%	0%	0%
The instructor communicates the subject matter effectively.	88%	12%	0%	0%	0%
The instructor shows respect toward students and encourages class participation.	82%	18%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	76%	18%	6%	0%	0%
The instructor arrives on time in class.	88%	6%	0%	6%	0%
The instructor leaves on time.	94%	6%	0%	0%	0%
The instructor returns the graded scripts in a reasonable amount of time.	76%	18%	6%	0%	0%
The instructor was available during the specified office hours after class for consultations.	82%	18%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	88%	12%	0%	0%	0%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	82%	18%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	82%	18%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	88%	12%	0%	0%	0%
The course material is modern and updated.	82%	18%	0%	0%	0%

instructor Name: Ms. Mehwashma Amir
Course: CS-582 Operating System Concepts

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	100%	0%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	100%	0%	0%	0%	0%
The instructor has completed the whole course.	100%	0%	0%	0%	0%
The instructor provides additional material apart from the textbook.	100%	0%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistan's context.	97%	3%	0%	0%	0%
The instructor communicates the subject matter effectively.	97%	3%	0%	0%	0%
The instructor shows respect toward students and encourages class participation.	97%	3%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	97%	3%	0%	0%	0%
The instructor arrives on time in class.	97%	3%	0%	0%	0%
The instructor leaves on time.	100%	0%	0%	0%	0%
The instructor returns the graded scripts in a reasonable amount of time.	94%	6%	0%	0%	0%
The instructor was available during the specified office hours after class for consultations.	91%	9%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	97%	3%	0%	0%	0%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	94%	6%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	97%	3%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	100%	0%	0%	0%	0%
The course material is modern and updated.	94%	6%	0%	0%	0%

instructor Name: Mr. Shahan Arif
Course: CS-432 Modern Programming Languages

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	75%	18%	0%	0%	8%
The instructor demonstrates knowledge of the subject.	70%	13%	10%	0%	8%
The instructor has completed the whole course.	78%	15%	0%	0%	8%
The instructor provides additional material apart from the textbook.	70%	18%	5%	0%	8%
The instructor gives citations regarding current situations with reference to Pakistan's context.	68%	10%	13%	0%	10%
The instructor communicates the subject matter effectively.	75%	15%	3%	0%	8%
The instructor shows respect toward students and encourages class participation.	65%	15%	5%	5%	10%
The instructor maintains an environment that is conducive to learning.	70%	15%	5%	3%	8%
The instructor arrives on time in class.	75%	15%	0%	3%	8%
The instructor leaves on time.	78%	13%	0%	0%	10%
The instructor returns the graded scripts in a reasonable amount of time.	70%	15%	5%	3%	8%
The instructor was available during the specified office hours after class for consultations.	73%	15%	3%	0%	10%
The Subject matter presented in the course has increased your knowledge of the subject.	68%	13%	5%	5%	10%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	73%	13%	3%	3%	10%
The course integrates theoretical course concepts with real-world applications.	75%	10%	8%	0%	8%
The assignments and exams covered the materials presented in the course.	75%	10%	5%	3%	8%
The course material is modern and updated.	70%	15%	5%	0%	10%

instructor Name: Mr. Abdul Sittar
Course: CS-542 Analysis of Algorithms

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	87%	10%	0%	0%	3%
The instructor demonstrates knowledge of the subject.	81%	16%	0%	3%	0%
The instructor has completed the whole course.	84%	10%	3%	3%	0%
The instructor provides additional material apart from the textbook.	74%	16%	3%	3%	3%
The instructor gives citations regarding current situations with reference to Pakistan's context.	87%	10%	0%	3%	0%
The instructor communicates the subject matter effectively.	81%	13%	3%	3%	0%
The instructor shows respect toward students and encourages class participation.	94%	6%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	81%	13%	0%	3%	3%
The instructor arrives on time in class.	90%	3%	3%	0%	3%
The instructor leaves on time.	87%	10%	0%	0%	3%
The instructor returns the graded scripts in a reasonable amount of time.	84%	16%	0%	0%	0%
The instructor was available during the specified office hours after class for consultations.	90%	6%	0%	3%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	84%	10%	3%	0%	3%
The syllabus clearly states course objectives requirements, procedures and grading criteria.	81%	13%	3%	3%	0%
The course integrates theoretical course concepts with real-world applications.	87%	10%	0%	3%	0%
The assignments and exams covered the materials presented in the course.	84%	13%	3%	0%	0%
The course material is modern and updated.	81%	16%	0%	3%	0%

instructor Name: Mr. Ch. Nauman Bin Nasir
Course: CS-733 Artificial Intelligence

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	73%	18%	0%	9%	0%
The instructor demonstrates knowledge of the subject.	73%	18%	0%	9%	0%
The instructor has completed the whole course.	73%	9%	9%	9%	0%
The instructor provides additional material apart from the textbook.	73%	9%	0%	9%	9%
The instructor gives citations regarding current situations with reference to Pakistani context.	73%	9%	0%	9%	9%
The instructor communicates the subject matter effectively.	73%	18%	0%	9%	0%
The instructor shows respect towards students and encourages class participation.	73%	18%	0%	9%	0%
The instructor maintains an environment that is conducive to learning.	73%	18%	0%	9%	0%
The instructor start zoom lecture/class on time.	73%	18%	0%	9%	0%
The instructor ends the zoom lecture/class on time.	73%	18%	0%	9%	0%
The instructor has completed all classes regularly.	73%	9%	9%	9%	0%
The instructor posts the assignments/quizzes on time and give reasonable time to complete the assigned assignments/quizzes.	73%	9%	9%	9%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	73%	18%	0%	9%	0%
The instructor was available during the specified hours on WhatsApp/Zoom/LMS/Google classroom for consultation.	73%	18%	0%	9%	0%
The course integrates theoretical course concepts with real-world applications.	73%	9%	0%	9%	9%
The assignments and exams covered the materials presented in the course.	73%	9%	9%	9%	0%
The course material is modern and updated	73%	18%	0%	9%	0%

instructor Name: Mr. Bilal Mazhar
Course: CS-323 Programming Fundamentals

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	88%	12%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	96%	4%	0%	0%	0%
The instructor has completed the whole course.	96%	4%	0%	0%	0%
The instructor provides additional material apart from the textbook.	88%	8%	4%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistani context.	84%	16%	0%	0%	0%
The instructor communicates the subject matter effectively.	92%	8%	0%	0%	0%
The instructor shows respect towards students and encourages class participation.	100%	0%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	92%	8%	0%	0%	0%
The instructor start zoom lecture/class on time.	88%	4%	8%	0%	0%
The instructor ends the zoom lecture/class on time.	88%	8%	4%	0%	0%
The instructor has completed all classes regularly.	92%	8%	0%	0%	0%
The instructor posts the assignments/quizzes on time and give reasonable time to complete the assigned assignments/quizzes.	88%	12%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	92%	8%	0%	0%	0%
The instructor was available during the specified hours on WhatsApp/Zoom/LMS/Google classroom for consultation.	88%	12%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	92%	8%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	92%	8%	0%	0%	0%
The course material is modern and updated	92%	8%	0%	0%	0%

instructor Name: Mr. Faizan Ul Mustafa
Course: CS-565 Web Design and Development

Teacher Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The instructor is prepared for each class.	100%	0%	0%	0%	0%
The instructor demonstrates knowledge of the subject.	100%	0%	0%	0%	0%
The instructor has completed the whole course.	100%	0%	0%	0%	0%
The instructor provides additional material apart from the textbook.	100%	0%	0%	0%	0%
The instructor gives citations regarding current situations with reference to Pakistani context.	100%	0%	0%	0%	0%
The instructor communicates the subject matter effectively.	100%	0%	0%	0%	0%
The instructor shows respect towards students and encourages class participation.	100%	0%	0%	0%	0%
The instructor maintains an environment that is conducive to learning.	100%	0%	0%	0%	0%
The instructor start zoom lecture/class on time.	100%	0%	0%	0%	0%
The instructor ends the zoom lecture/class on time.	100%	0%	0%	0%	0%
The instructor has completed all classes regularly.	100%	0%	0%	0%	0%
The instructor posts the assignments/quizzes on time and give reasonable time to complete the assigned assignments/quizzes.	88%	0%	0%	0%	0%
The Subject matter presented in the course has increased your knowledge of the subject.	100%	0%	0%	0%	0%
The instructor was available during the specified hours on WhatsApp/Zoom/LMS/Google classroom for consultation.	100%	0%	0%	0%	0%
The course integrates theoretical course concepts with real-world applications.	100%	0%	0%	0%	0%
The assignments and exams covered the materials presented in the course.	100%	0%	0%	0%	0%
The course material is modern and updated	100%	0%	0%	0%	0%

instructor Name: Mr. Farhat Mehmood
Course: CS-684 Network Management and Security

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	94%	6%	0%	0%	0%
The course workload was manageable.	94%	6%	0%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	94%	6%	0%	0%	0%
The approximate level of your attendance during the whole course.	94%	6%	0%	0%	0%
I participated actively in the course.	94%	6%	0%	0%	0%
I think I have made progress in this course	94%	6%	0%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	94%	6%	0%	0%	0%
The learning and teaching methods encouraged participation.	94%	6%	0%	0%	0%
The overall environment in the class was conducive to learning.	94%	6%	0%	0%	0%
The classrooms were satisfactory.	94%	6%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	94%	3%	3%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	94%	3%	3%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	94%	6%	0%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	94%	6%	0%	0%	0%
The course stimulated my interest and thought about the subject area.	94%	6%	0%	0%	0%
The course was appropriate with reference to current technologies.	94%	6%	0%	0%	0%
Ideas and concepts were presented clearly.	94%	6%	0%	0%	0%
The method of assessment were reasonable.	97%	3%	0%	0%	0%
Feedback on assessment was timely.	94%	3%	3%	0%	0%

Feedback on assessment was helpful	94%	3%	3%	0%	0%
I understood the lectures.	97%	3%	0%	0%	0%
The material was well organized and presented.	97%	3%	0%	0%	0%
The instructor was responsive to student needs and problems.	94%	6%	0%	0%	0%
Had The instructor been regular throughout the course?	94%	6%	0%	0%	0%
The material in the tutorials was useful.	97%	3%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	97%	3%	0%	0%	0%

instructor Name: Mr. Shoaib Nazir
Course: CS-737 Computer organization and Assembly Language

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	94%	6%	0%	0%	0%
The course workload was manageable.	84%	10%	6%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	94%	6%	0%	0%	0%
The approximate level of your attendance during the whole course.	87%	10%	3%	0%	0%
I participated actively in the course.	87%	10%	3%	0%	0%
I think I have made progress in this course	87%	10%	3%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	84%	16%	0%	0%	0%
The learning and teaching methods encouraged participation.	94%	6%	0%	0%	0%
The overall environment in the class was conducive to learning.	90%	10%	0%	0%	0%
The classrooms were satisfactory.	90%	10%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	94%	6%	0%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	90%	10%	0%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	94%	6%	0%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	90%	10%	0%	0%	0%
The course stimulated my interest and thought about the subject area.	97%	3%	0%	0%	0%
The course was appropriate with reference to current technologies.	90%	10%	0%	0%	0%
Ideas and concepts were presented clearly.	90%	6%	3%	0%	0%
The method of assessment were reasonable.	87%	10%	3%	0%	0%
Feedback on assessment was timely.	90%	10%	0%	0%	0%

Feedback on assessment was helpful	87%	13%	0%	0%	0%
I understood the lectures.	87%	13%	0%	0%	0%
The material was well organized and presented.	87%	13%	0%	0%	0%
The instructor was responsive to student needs and problems.	90%	10%	0%	0%	0%
Had The instructor been regular throughout the course?	90%	10%	0%	0%	0%
The material in the tutorials was useful.	90%	10%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	87%	10%	3%	0%	0%

instructor Name: Ms. Zainab Mahmood
Course: CS-685 Human Computer Interaction

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	89%	11%	0%	0%	0%
The course workload was manageable.	78%	17%	6%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	83%	11%	6%	0%	0%
The approximate level of your attendance during the whole course.	78%	17%	6%	0%	0%
I participated actively in the course.	89%	11%	0%	0%	0%
I think I have made progress in this course	83%	11%	6%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	78%	22%	0%	0%	0%
The learning and teaching methods encouraged participation.	78%	11%	11%	0%	0%
The overall environment in the class was conducive to learning.	89%	11%	0%	0%	0%
The classrooms were satisfactory.	78%	22%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	89%	11%	0%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	83%	11%	6%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	83%	11%	6%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	78%	17%	6%	0%	0%
The course stimulated my interest and thought about the subject area.	89%	11%	0%	0%	0%
The course was appropriate with reference to current technologies.	83%	11%	6%	0%	0%
Ideas and concepts were presented clearly.	89%	6%	6%	0%	0%
The method of assessment were reasonable.	83%	17%	0%	0%	0%
Feedback on assessment was timely.	78%	11%	11%	0%	0%

Feedback on assessment was helpful	83%	17%	0%	0%	0%
I understood the lectures.	89%	11%	0%	0%	0%
The material was well organized and presented.	83%	17%	0%	0%	0%
The instructor was responsive to student needs and problems.	89%	6%	6%	0%	0%
Had The instructor been regular throughout the course?	83%	11%	6%	0%	0%
The material in the tutorials was useful.	89%	11%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	72%	28%	0%	0%	0%

instructor Name: Mr. Usman Ahmad
Course: CS-723 Web Engineering

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	80%	10%	7%	3%	0%
The course workload was manageable.	77%	10%	3%	10%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	87%	10%	0%	3%	0%
The approximate level of your attendance during the whole course.	87%	10%	3%	0%	0%
I participated actively in the course.	80%	10%	10%	0%	0%
I think I have made progress in this course	77%	10%	10%	3%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	70%	13%	13%	3%	0%
The learning and teaching methods encouraged participation.	77%	13%	7%	3%	0%
The overall environment in the class was conducive to learning.	77%	10%	13%	0%	0%
The classrooms were satisfactory.	80%	10%	10%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	83%	7%	10%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	77%	13%	7%	3%	0%
The provision of learning resources in the library was adequate and appropriate.	80%	7%	10%	3%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	80%	10%	7%	3%	0%
The course stimulated my interest and thought about the subject area.	77%	10%	10%	3%	0%
The course was appropriate with reference to current technologies.	80%	10%	10%	0%	0%
Ideas and concepts were presented clearly.	80%	10%	10%	0%	0%
The method of assessment were reasonable.	77%	13%	7%	0%	3%
Feedback on assessment was timely.	73%	17%	7%	0%	3%

Feedback on assessment was helpful	77%	13%	10%	0%	0%
I understood the lectures.	83%	7%	10%	0%	0%
The material was well organized and presented.	80%	13%	7%	0%	0%
The instructor was responsive to student needs and problems.	73%	20%	7%	0%	0%
Had The instructor been regular throughout the course?	87%	7%	7%	0%	0%
The material in the tutorials was useful.	77%	13%	10%	0%	0%
I was happy with the amount of work needed for assignments and projects.	80%	7%	13%	0%	0%

instructor Name: Mr. Waqas Tariq Dar
Course: CS-565 Web Design and Development

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	100%	0%	0%	0%	0%
The course workload was manageable.	77%	0%	0%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	100%	0%	0%	0%	0%
The approximate level of your attendance during the whole course.	100%	0%	0%	0%	0%
I participated actively in the course.	96%	4%	0%	0%	0%
I think I have made progress in this course	96%	4%	0%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	100%	0%	0%	0%	0%
The learning and teaching methods encouraged participation.	100%	0%	0%	0%	0%
The overall environment in the class was conducive to learning.	100%	0%	0%	0%	0%
The classrooms were satisfactory.	100%	0%	0%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	100%	0%	0%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	100%	0%	0%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	100%	0%	0%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	100%	0%	0%	0%	0%
The course stimulated my interest and thought about the subject area.	100%	0%	0%	0%	0%
The course was appropriate with reference to current technologies.	100%	0%	0%	0%	0%
Ideas and concepts were presented clearly.	80%	0%	0%	0%	0%
The method of assessment were reasonable.	77%	0%	0%	0%	0%
Feedback on assessment was timely.	73%	0%	0%	0%	0%

Feedback on assessment was helpful	77%	0%	0%	0%	0%
I understood the lectures.	83%	0%	0%	0%	0%
The material was well organized and presented.	80%	0%	0%	0%	0%
The instructor was responsive to student needs and problems.	100%	0%	0%	0%	0%
Had The instructor been regular throughout the course?	100%	0%	0%	0%	0%
The material in the tutorials was useful.	100%	0%	0%	0%	0%
I was happy with the amount of work needed for assignments and projects.	100%	0%	0%	0%	0%

instructor Name: Mr. Shahzad Ali
Course: CS-430 Digital Logic and Design

Course Evaluation Summary					
S. A:(Strongly Agree) A:(Agree) UC:(Uncertain) D:(Disagree) S. D:(Strongly Disagree)					
Questions	**S. A**	**A**	**UC**	**D**	**S. D**
The course objectives were clear.	96%	0%	4%	0%	0%
The course workload was manageable.	91%	4%	4%	0%	0%
The course was well organized (e.g. timely access to materials, notification of changes, etc.)	96%	0%	4%	0%	0%
The approximate level of your attendance during the whole course.	96%	0%	4%	0%	0%
I participated actively in the course.	91%	4%	4%	0%	0%
I think I have made progress in this course	91%	4%	4%	0%	0%
I think the Course was well structured to achieve the learning outcomes (there was a good balance of lectures, tutorials, practical, etc.)	91%	4%	4%	0%	0%
The learning and teaching methods encouraged participation.	96%	0%	4%	0%	0%
The overall environment in the class was conducive to learning.	96%	0%	4%	0%	0%
The classrooms were satisfactory.	96%	0%	4%	0%	0%
Learning materials (Lesson Plans, Course Notes, etc.) were relevant and useful.	96%	0%	4%	0%	0%
Recommended reading Books etc. were relevant and appropriate.	96%	0%	4%	0%	0%
The provision of learning resources in the library was adequate and appropriate.	91%	4%	4%	0%	0%
The provision of learning resources on the Web was adequate and appropriate (if relevant).	96%	0%	4%	0%	0%
The course stimulated my interest and thought about the subject area.	87%	9%	4%	0%	0%
The course was appropriate with reference to current technologies.	91%	4%	4%	0%	0%
Ideas and concepts were presented clearly.	96%	0%	4%	0%	0%
The method of assessment were reasonable.	91%	4%	4%	0%	0%
Feedback on assessment was timely.	96%	0%	4%	0%	0%

Feedback on assessment was helpful	96%	0%	4%	0%	0%
I understood the lectures.	96%	0%	4%	0%	0%
The material was well organized and presented.	96%	0%	4%	0%	0%
The instructor was responsive to student needs and problems.	91%	4%	4%	0%	0%
Had The instructor been regular throughout the course?	96%	0%	4%	0%	0%
The material in the tutorials was useful.	96%	0%	4%	0%	0%
I was happy with the amount of work needed for assignments and projects.	91%	4%	4%	0%	0%

17 Annexure G: Teacher Feedback on Teacher and Course Evaluation

Performa 10/1: Teacher & Course Evaluation Feedback

Fall-2019

S. no	instructor Name	Courses	Class	Remarks
1	Ms. Maryam Mushtaq	ENG-305 English Comprehension	BS-CS(1st)	A
		ENG-305 English Comprehension	BS-CS(1st)	A

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

Please give your suggestions for academic improvements:

The role of students is always most important in the classroom. A good learner is always ready to participate positively. Activity base learning can improve students learning outcomes.

Zainab Mahmood

Member QED | Zainab Mahmood

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Signature

Date: February 20, ,2020

Performa 10/1: Teacher & Course Evaluation Feedback
Fall-2019

S. no	instructor Name	Courses	Class	Remarks
2	Ms Anmool	MTH-310 Calculus and Analytical Geometry	BS-CS(1st)	A
		MTH-310 Calculus and Analytical Geometry	BS-IT(1st)	A
		TH-310 Calculus and Analytical Geometry	BS-IT(1st)	A

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

Improved in class management, paper setting and student motivation.

Please give your suggestions for academic improvements:

There is need to make strong coordination among the visiting faculty and administration**.**

Zainab Mahmood

Member QED | Zainab Mahmood

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Signature

Date: February 22, 2020

Performa 10/1: Teacher & Course Evaluation Feedback
Fall-2019

S. no	instructor Name	Courses	Class	Remarks
3	Mr. Muhammad AzmatUllah	ELE-401 Basic Electronics	BS-CS(1st)	A
		ELE-401 Basic Electronics	BS-CS(1st)	A
		ELE-401 Basic Electronics	BS-IT(1st)	A

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

Please give your suggestions for academic improvements:

Lab should be established for electronics course

Zainab Mahmood

Member QED | Zainab Mahmood

_____

Signature

Date: February 22, 2020

Performa 10/1: Teacher & Course Evaluation Feedback
Fall-2019

S. no	instructor Name	Courses	Class	Remarks
4	Mirza Bahashat Baig	IS-302 Islamic Studies/Ethics	BS-CS(2nd)	A

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

I tried my best for students basic learning of Islam and they must be clear about basic principles**.**

Please give your suggestions for academic improvements:

Zainab Mahmood

Member QED | Zainab Mahmood

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Signature

Date: February 22, 2020

Performa 10/1: Teacher & Course Evaluation Feedback
Fall-2019

S. no	instructor Name	Courses	Class	Remarks
5	Mr. Bilal Mazhar	CS-692 Visual Programming	BS-CS(4th)	A
		CS-323 Programming Fundamentals	BS-CS(1st)	A

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

I think I should increase my interaction with students so they feel more comfortable to ask questions.

Please give your suggestions for academic improvements:

Emphasize on Lab assignments and term project should be increased and enforce.

Zainab Mahmood

Member QED | Zainab Mahmood

_____

Signature

Date: February 22, 2020

Performa 10/1: Teacher & Course Evaluation Feedback
Fall-2019

S. no	instructor Name	Courses	Class	Remarks
6	Mr. Bilal Tariq Butt	CS-532 Computer Architecture	BS-CS(6th	

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

More focus on Labs

Implementation of concepts in Realtime through conducting events and activity

Please give your suggestions for academic improvements:

Put more focus on talk from external field expert.

Zainab Mahmood

Member QED | Zainab Mahmood

_____

Signature

Date: February 25, 2020

Performa 10/1: Teacher & Course Evaluation Feedback
Fall-2019

S. no	instructor Name	Courses	Class	Remarks
7	Ms. Swaibia	CS-300 Introduction to information and communication technologies	BS-CS(1st)	S.A
		MGT-341 IT in Business-I	BBA(1st)	S.A

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

Improve course contents.

Please give your suggestions for academic improvements:

Course outline is required to be update and add new and latest topic.

_____

Signature

Zainab Mahmood

Member QED | Zainab Mahmood

Date: February ____,2020

Performa 10/1: Teacher & Course Evaluation Feedback
Fall-2019

S. no	instructor Name	Courses	Class	Remarks
8	Mr. Abrar	CS-423 Object Oriented Programming	BS-CS(2nd)	A
		CS-652 Software Project Management	BS-IT(7th)	S.A

Note: write your remarks as per the instructions i.e.

S.A:(Strongly Agree) **A**:(Agree) **UC**:(Uncertain) **D**:(Disagree) **S.D**:(Strongly Disagree)

Feedback:

Mention area of improvement:

I will add more interesting and content and update my teaching methodology.

Please give your suggestions for academic improvements:

Zainab Mahmood

Member QED | Zainab Mahmood

_____

Signature

Date: February 22, 2020

18 Annexure H: Faculty Survey

Performa: 5 Faculty Survey Report (Fall 2019)

Department of CS/IT

S.no	Statements	VS	SA	UC	DS	VD
1	Your mix of research teaching and community service	25%	58.3%	8.3%	4.2%	4.2%
2	The intellectual stimulation of your work	20.8%	70.8%	4.2%	0%	4.2%
3	Type of teaching / research you currently do	33.3%	54.2%	8.3%	0%	4.2%
4	Your interaction with students	48.5%	37.5%	8.3%	0%	8.3%
5	Cooperation you receive form colleagues	41.7%	45.8%	8.3%	0%	4.2%
6	The mentoring (guidance) available to you	33.3%	25%	29.2%	4.2%	8.3%
7	Administrative support from the department	37.5%	41.7%	8.3%	4.2%	8.3%
8	Providing clarity about the faculty promotion process	16.7%	29.2%	37.5%	12.5%	4.2%
9	Your prospects for advancement and progress through ranks	12.5%	37.5%	37.5%	8.3%	4.2%
10	Salary and compensation package	12.5%	45.8%	25%	8.3%	8.3%
11	Job security and stability at the department	16.7%	45.8%	12%	8.3%	4.2%
12	Amount of time you have for yourself and family	12.5%	58.3%	16.7%	8.3%	4.2%
13	The overall climate at the department	25%	58.3%	8.3%	0%	8.3%
14	Whether the department is utilizing your experience and knowledge	25%	45.8%	12.5%	12.5%	4.2%

VS: Very Satisfied SA: Satisfied UC: Uncertain DS: Dissatisfied VD: Very Dissatisfied

Performa: 5 Faculty Survey Report-Fall 2020

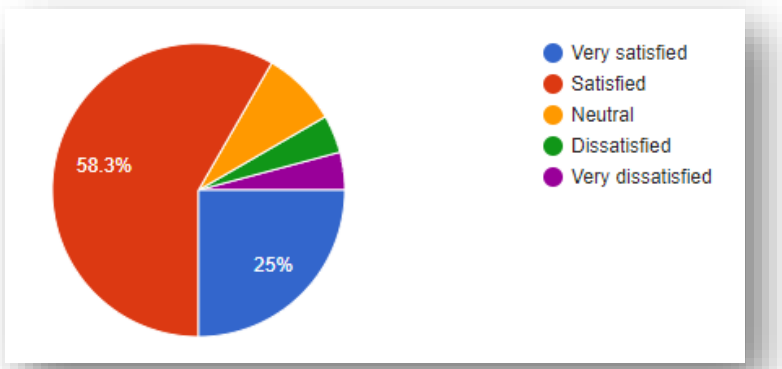
Department of CS/IT

S.no	Statements	VS	SA	UC	DS	VD
1	Your mix of research teaching and community service	8.3%	66.7%	25%	0%	0%
2	The intellectual stimulation of your work	8.3%	83.3%	8.3%	0%	0%
3	Type of teaching / research you currently do	8.3%	83.3%	8.3%	0%	0%
4	Your interaction with students	25%	66.7%	8.3%	0%	0%
5	Cooperation you receive form colleagues	8.3%	66.7%	25%	0%	0%
6	The mentoring (guidance) available to you	33.3%	55.6%	5.6%	5.6%	0%
7	Administrative support from the department	8.3%	50%	41.7%	0%	0%
8	Providing clarity about the faculty promotion process	16.7%	66.7%	8.3%	8.3%	0%
9	Your prospects for advancement and progress through ranks	0%	33.3%	50%	16.7%	0%
10	Salary and compensation package	0%	58.3%	25%	16.7%	0%
11	Job security and stability at the department	0%	75%	25%	0%	0%
12	Amount of time you have for yourself and family	0%	75%	25%	0%	0%
13	The overall climate at the department	8.3%	75%	16.7%	0%	0%
14	Whether the department is utilizing your experience and knowledge	0%	83.3%	16.7%	0%	0%

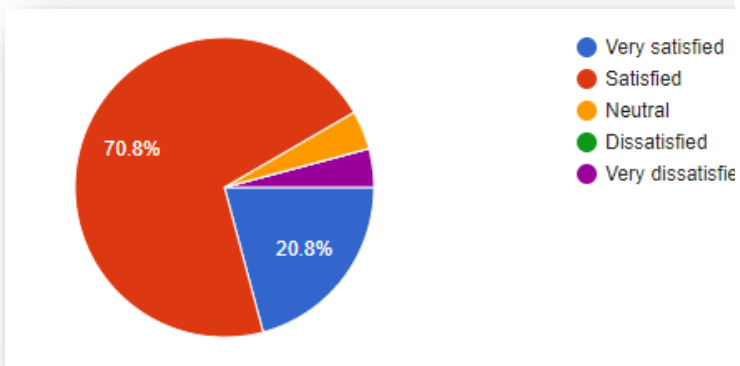
VS: Very Satisfied SA: Satisfied UC: Uncertain DS: Dissatisfied VD: Very Dissatisfied

Performa: 5 Faculty Survey Report-Fall 2019
Department of CS/IT

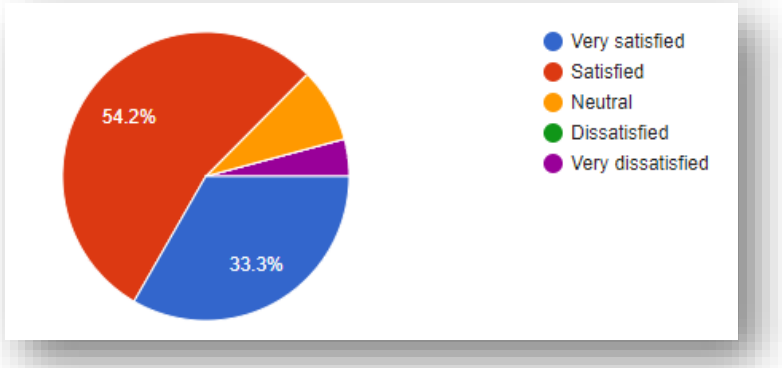
1. Your mix of research teaching and community service.



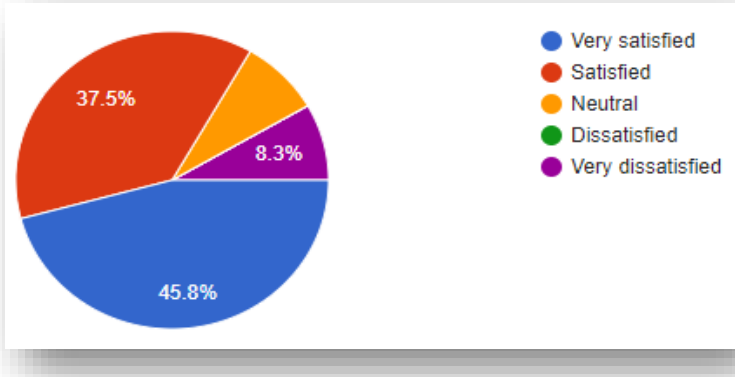
2. The intellectual stimulation of your work.



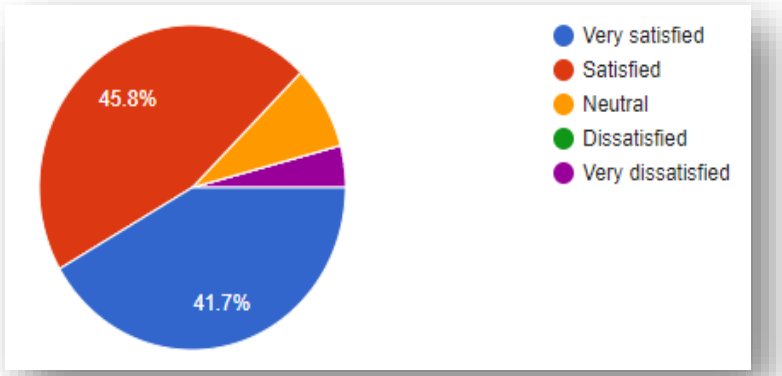
3. Type of teaching / research you currently doing.



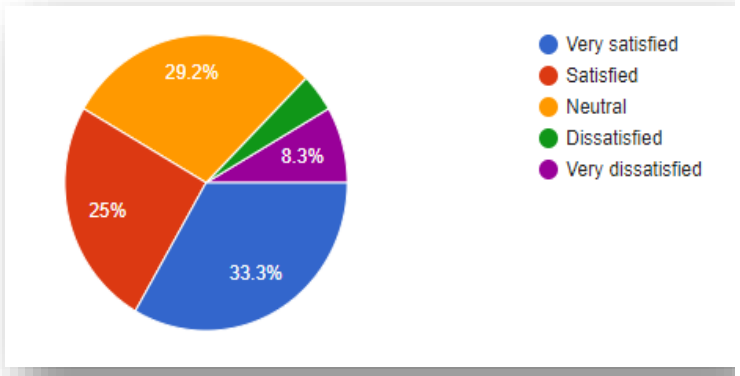
4. Your interaction with students.



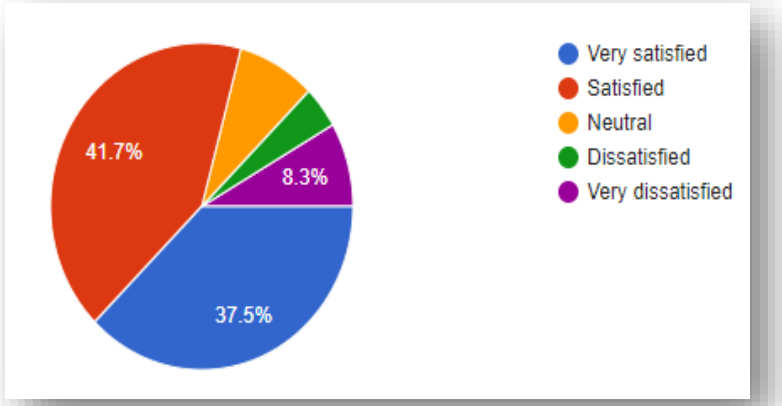
5. Cooperation you receive form colleagues.



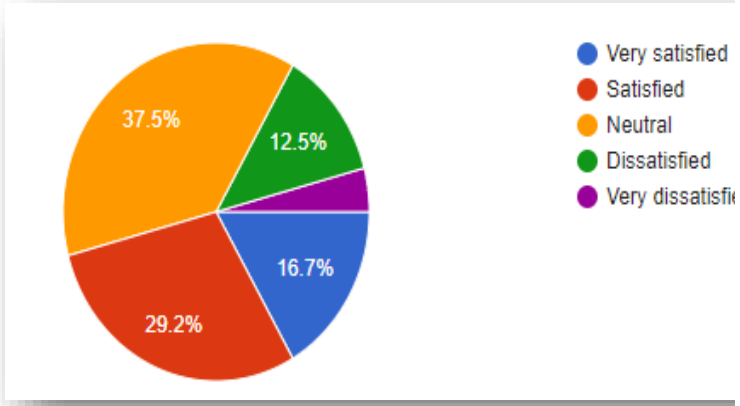
6. The mentoring (guidance) available to you.



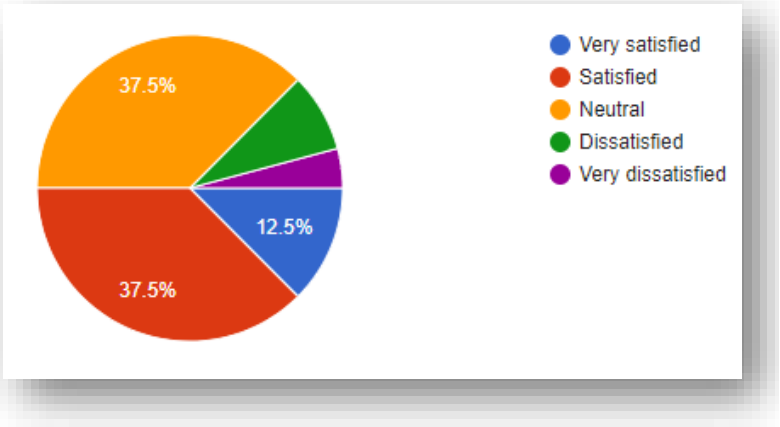
7. Administrative support from the department.



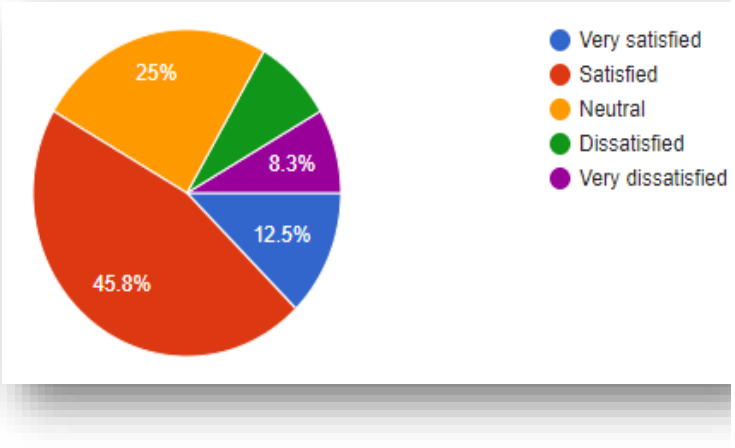
8. Providing clarity about the faculty promotion process.



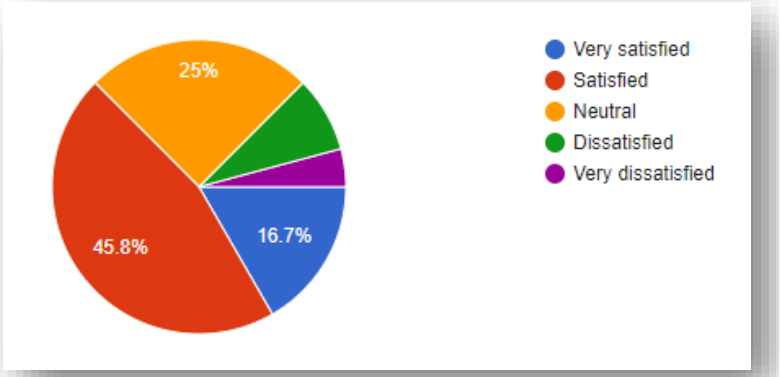
9. Your prospects for advancement and progress through ranks.



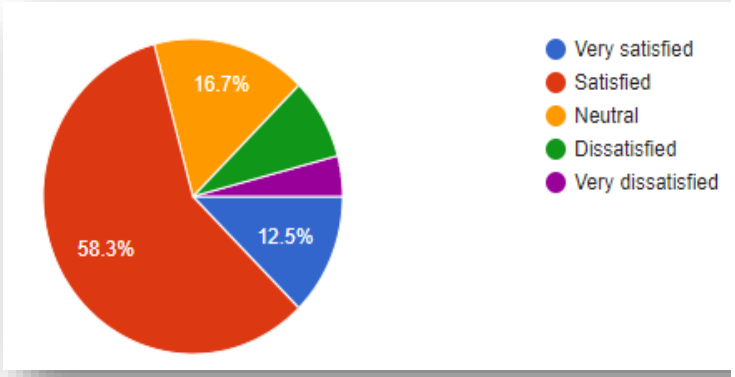
10. Salary and compensation package.



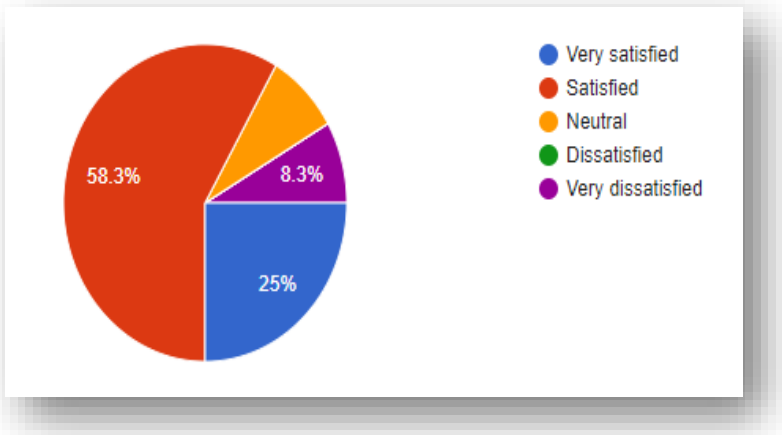
11. Job security and stability at the department.



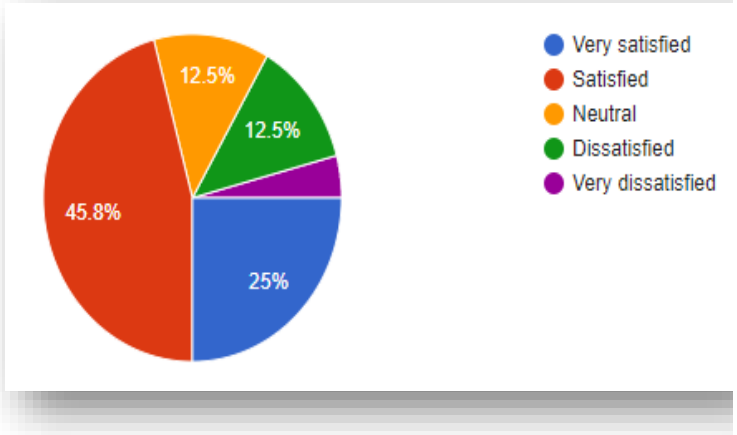
12. Amount of time you have for yourself and family.



13. The overall environment at the department.

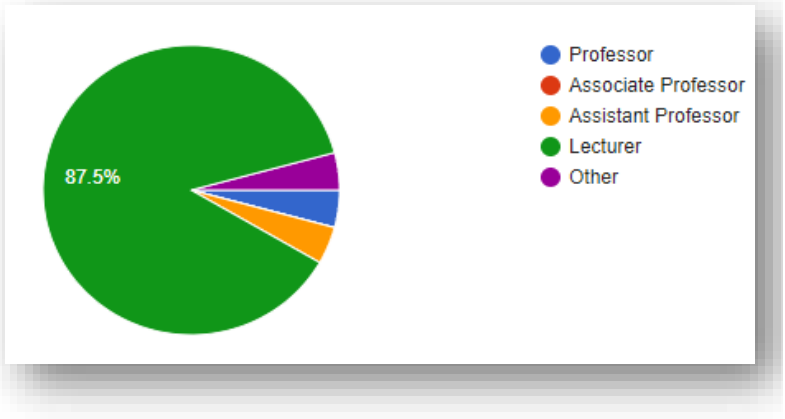


14. Whether the department is utilizing your experience and knowledge.

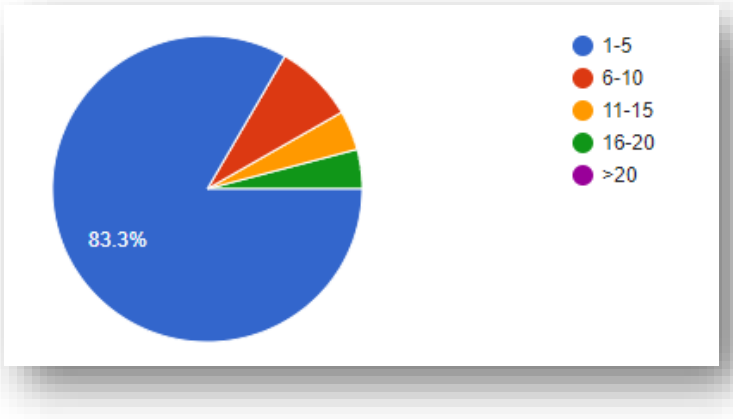


Information About Faculty

i. Academic Rank

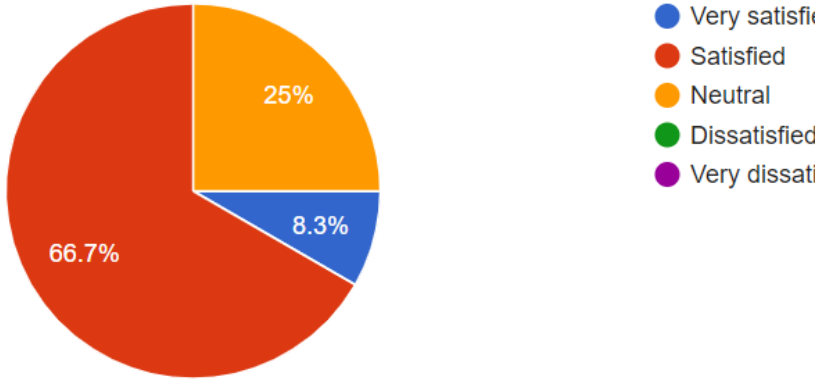


ii. Years of Service

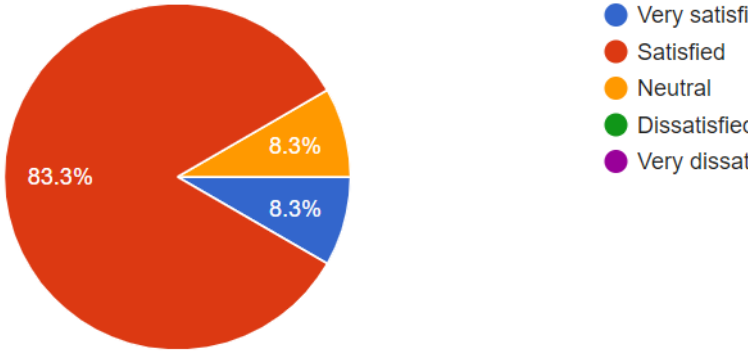


Performa: 5 Faculty Survey Report
Department of CS/IT

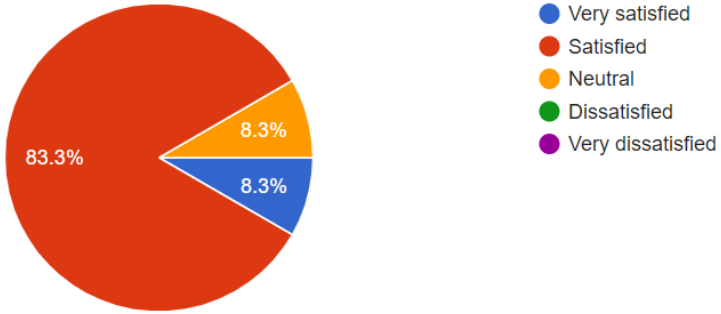
1. Your mix of research teaching and community service.



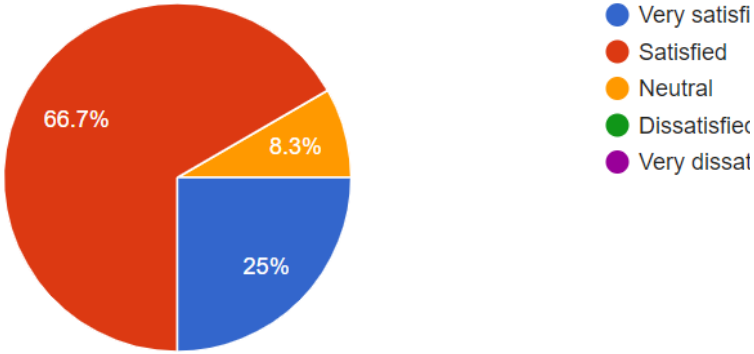
2. The intellectual stimulation of your work.



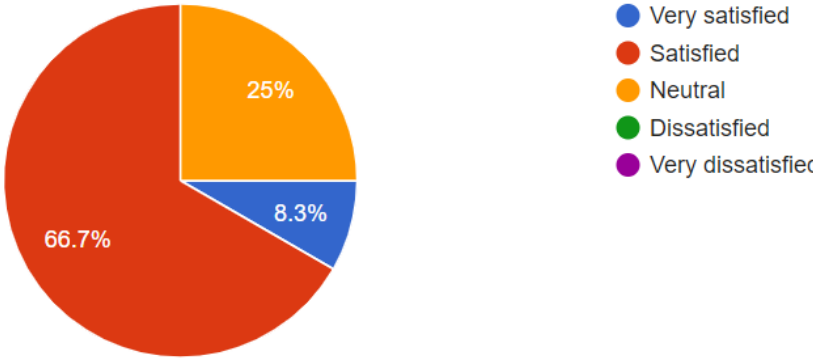
3. Type of teaching / research you currently doing.



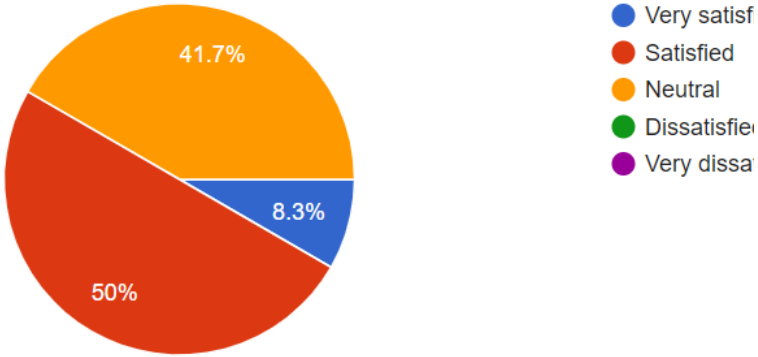
4. Your interaction with students.



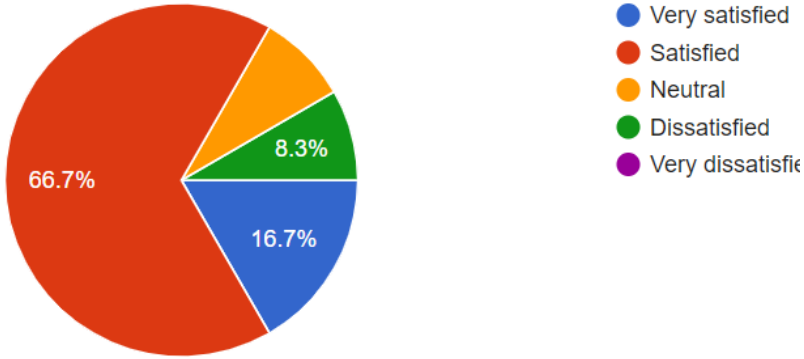
5. Cooperation you receive form colleagues.



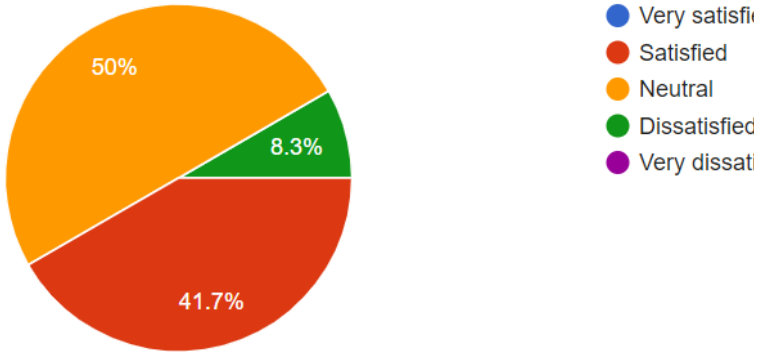
6. The mentoring (guidance) available to you.



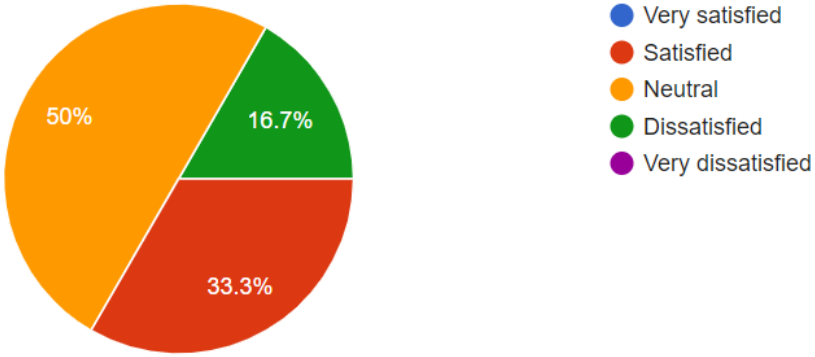
7. Administrative support from the department.



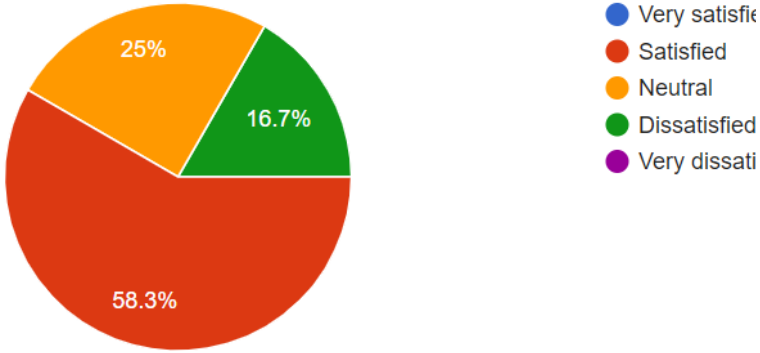
8. Providing clarity about the faculty promotion process.



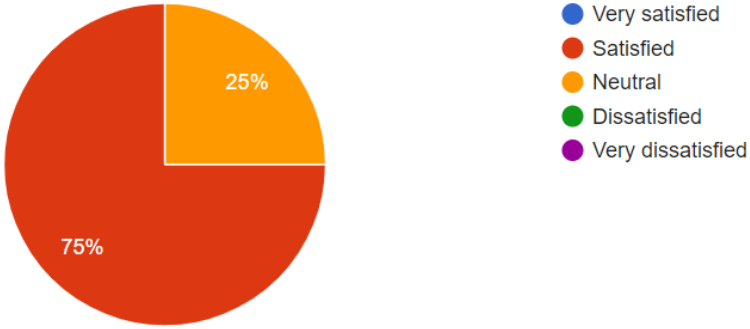
9. Your prospects for advancement and progress through ranks.



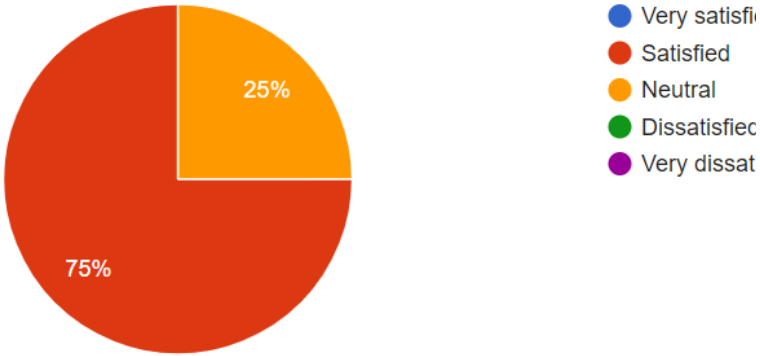
10. Salary and compensation package.



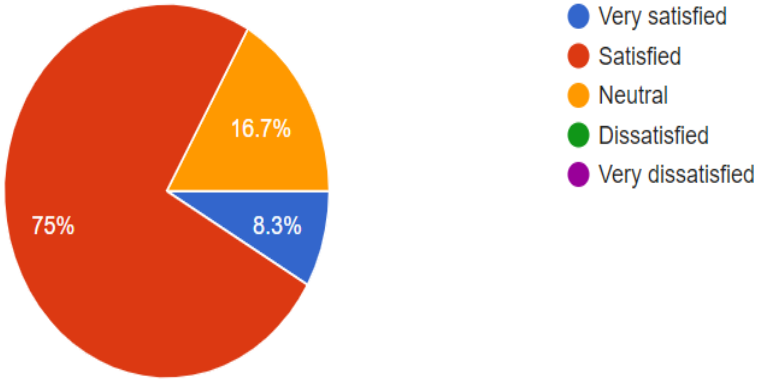
11. Job security and stability at the department.



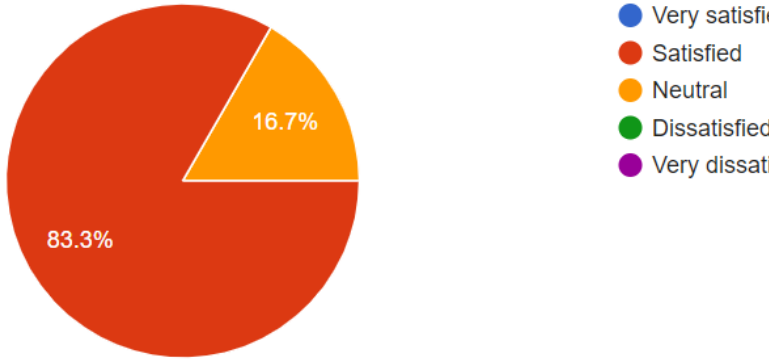
12. Amount of time you have for yourself and family.



13. The overall environment at the department.

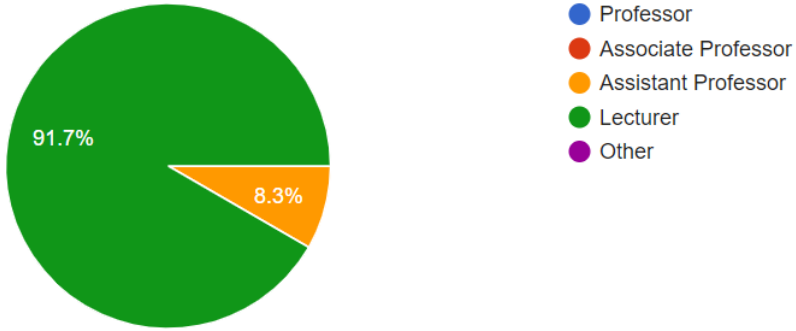


14. Whether the department is utilizing your experience and knowledge.

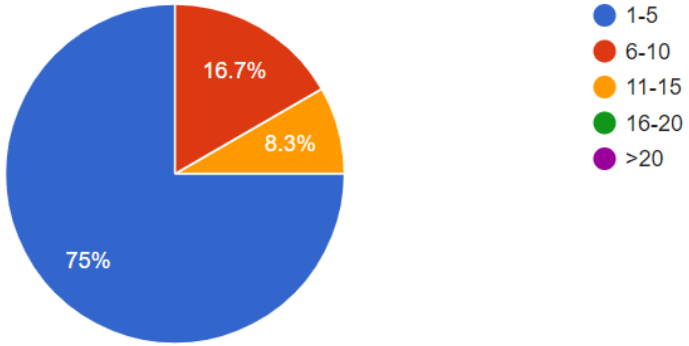


Information About Faculty

iii. Academic Rank



iv. Years of Service



19 Annexure I: Annual Faculty Review

Annual Review: Faculty Self Evaluation
2019-2020

Faculty Name: Zainab Mahmood **Designation:** Lecturer

Department: Computer Science **Date:** October 22, 2020

Please answer the items below in the space provided to conduct a self-evaluation and forward it to your Department Head/QED. Typing is preferred, but you may complete in clear handwriting.

Five criteria are important in evaluating faculty performance:

- *Quality of teaching*
- *Evidence that knowledge is being updated*
- *Research and scholarly activity*
- *Service to the institution and contributions to governance*
- *Evidence that shows professional development efforts to improve as a teacher and/or advisor*

List responsibilities over the reporting period: Describe your assignment over the past two semesters or the past year in terms of courses taught, administration responsibilities, committees, advising, research, and service. Then estimate the percentage of your total effort you devoted to each type of activity. (Should total 100 %.)

Teaching load in Semester Fall 2019 (undergraduate / Postgraduate)

Course 1 Human Computer Interaction (HCI), 2 Requirement Engineering, 3 Professional Ethics , 4 Professional Ethics,

Teaching load in Semester Spring 2020 (undergraduate / Postgraduate)

Course 1 Human Computer Interaction (HCI), 2 HCI, 3 HCI, 4 SE-I, 5 AI

FYP Supervisory load for the year (undergraduate / Postgraduate)

1 E-Ticket Reservation System, 2 E-Mart 3 Balance the Ball, 4 Al-Karam Welfare Management System,

Formally Designated Administrative Role : ☑ Yes No

(Specify)

Notified as QED Head. Followings are the some responsibilities that I had done during last year

1. Conducting Faculty Survey and Preparing the Summery of results.
2. Conducting students and teacher evaluation and getting and all record both in hard and soft form
3. Getting teacher feedback on students and teacher evaluation
4. Getting and preparing results summery of internship survey, alumni and graduating survey.
5. Conducted internal assessment of SAR spring 2018 and prepared all related materials
6. Prepared Internal assessment report for CS, IT, BBA
7. Prepared Implementation Plan
8. Design online class report , class observation, make-up class forms
9. Maintained all QED record and corresponded to all departments

Formally Designated Advisor: Yes No

Estimate of Activity (Use 40 hours work week as the basis for your estimate):

(Teaching includes lectures, time for preparation, marking quizzes, assignments)

Activity	**% of Effort**
Teaching	50
FYP	20
Administration	25
Research	
Service	5
	100%

Teaching: How effective have you been as a teacher this year? How well have your students performed as a result of your teaching? What courses and programs have you revised and proposed?

I was all time available to all my students and entertain all their queries. In fall 2019 in professional ethics module I had conducted 10 case studies which greatly help the students to understand the ethical issues of IT. I have revised the Human computer interaction outline and also design Requirement Engineering Outline. I had share assessment feedback time to make student's assessment more effective. In spring 2020 although it was online semester, but I gave all students proper and timely consulting to all students who ask for it. I have started my class in first of lockdown and remain punctual throughout semester. The overall performance of students in all courses was satisfactory.

Updating Knowledge: Describe what you have done this year to increase your knowledge and to remain "up to date" in your field (seminars attended, courses taken, reading program, research).

I was connected to a number of research group related to software project management and usability studies to update my knowledge and revise the current outline and lesson plans. I had taken a number of courses in this regard. Following online courses taken to improve my knowledge

1. Designing an effective prototype form www.plurasight.com
2. Software Project Management from Coursera
3. AWS Summit Online, Amzoon
4. Major Cybersecurity Threats: Trends, Preparation, and Response, Plurasight
5. Online Take-Home Exams and Assignments **by Dr. Zainab Riaz (*SDSB)* & Dr. Yasira Waqar (*SOE/Learning Institute)***
6. Managing Groups in Large Classes Using Online Tools **by Dr. Suleman Shahid (LUMS Learning Institute/SBASSE*)***

List any degree programs in which you are currently enrolled:____

- -GIMS Funded
- - Self-Funded
- - Other Funded (Specify source)_____

Research: Describe your research and scholarly work over the reporting period. List proposals, papers, and publications and in-press publications. Do not list work completed before the current evaluation period or work listed in other evaluation periods other than renewed research projects.

Service to Students: Describe your involvement with students outside of the classroom. Judge the quality of your interactions with students in these informal settings. What evidence do you have that your formal and informal advising is effective?

I had pre-defined consulting hours for all classes where I used to listen their problems and review their work. Moreover, I had spent much of time on final year student's documentation where I taught them all advance formatting and how to maintain the several versions of single document. I had advised student in class and those students who seems to have serious issues, I had invited them in my office to listen and help them out form their difficult time s

GIMS and Community Service: Describe the service have you provided to the institute community, institute's other departments or to the broader community.

I had worked with Project Management office to facilitate the office in project writing and formatting. I had conducted 2 workshops;

1) How to conduct effective case study in classroom,

2) How to write project proposal, 3) How to format the final year project document .

Efforts to improve as teacher/advisor: Describe what you have done this year to increase your efforts to improve as a teacher / advisor. (classroom visits, portfolios, training sessions)

I did classroom visit in fall 2019 and attended webinar in Spring 2020 to improve the teaching skills

Strengths: In light of the above, assess your overall performance this year. What are your strengths as a faculty member?

20 Annexure J: Online Class Reports and Manuals

Online Class Report

(Filled by instructor)

instructor Name: Bilal Mazhar			**Department/Course: Computer Science/Database**	**Class: BSCS 4th B**
Week No.	**Date**	**Lecture No.**	**Platform for Online Class**	**Delivery Method**
3	March 25, 2020 March 27, 2020	5 & 6	Google Classroom/ Zoom App	Shared power point slides in which detail narrations are added and video demonstration of related topics on Zoom App. Lecture related material and class work is also assigned on google platform.

Week 03	
Lecture	**Content Delivered**
5	**Topic: System Development Life Cycle (SDLC)** **Sub Topics** o Planning o Analysis, Design o Implementation, Maintenance
6	**Topic: System Development Life Cycle (SDLC)** **Sub Topics** Consider yourself as a System Analyst, you are required to design a database for "GIMS", explain how "**database development life cycle"** helps in designing a database (elaborate each step with proper reason).
LAB	Single-Row Functions

Online Class Report

(Filled by instructor)

instructor Name: Zainab Mahmood		**Department/Course:** IT/ Software Engineering		**Class:** BSIT 4th
Week No.	**Date**	**Lecture No.**	**Platform for Online Class**	**Delivery Method**
3	March 19, 2020	5	Google Classroom	Shared power point slides in which detail narrations are added. Lecture related material, Assignment 1 Assigned on Vision and Scope of Project
3	March 20, 2020	6	Google Classroom	Shared power point slides in which detail narrations are added

Lecture	**Content Delivered**
6	**Topic:** Capability Maturity Model **Sub-topic** • Introduction about CMMI • Why CMMI is Important • 5 levels of CMMI and their Description • HOW CMMI level Assigned/achieved
7	**Topic:** Software Process Models **Sub-topic** • What is software process, • Need of Software Process • Which Process is right? • Generic Process Model • Process Flow • Type of Process Models • Perspective Process Model: Water Model • Descriptions, working, benefits and problems of model discusses in detail

Online Class Report

(Filled by instructor)

instructor Name:Shahan Arif			**Department/Course:Computer Science/Modern Programming Languages**	**Class:BSCS 5th A**
Week No.	**Date**	**Lecture No.**	**Platform for Online Class**	**Delivery Method**
3	March 24, 2020 March 27, 2020	5 & 6	Google Classroom/ Zoom App	Shared power point slides in which detail narrations are added and Live session on Zoom App. Lecture related material and class work is also assigned on google platform.

Lecture	**Content Delivered**
5	**Topic:** Describing Syntax and Semantics **Sub Topics** Intro to datatypes
6	**Topic:** Describing Syntax and Semantics **Sub Topics** Detailed datatype in dot net framework. Type checking and type casting/conversion
Lab	Working with Datatypes

Online Class Report

(Filled by instructor)

instructor Name: Mr.Shehzad Ali			**Department/Course:** CS/Digital Logic Design	**Class:** BSCS 2nd B
Week No.	**Date**	**Lecture No.**	**Platform for Online Class**	**Delivery Method**
3	March 24, 2020	5	Google Classroom	Conduct online session on Zoom application and Shared power point slides in which detail narrations are added. Lecture related material and class work is also assigned on google platform.
3	March 26, 2020	6	Google Classroom	Conduct online session on Zoom application and Shared power point slides in which detail narrations are added. Lecture related material and class work is also assigned on google platform.
3	March 27, 2020	Lab	Google Classroom	Conduct online session on Zoom application and Shared power point slides in which detail narrations are added. Lecture related material and class work is also assigned on google platform.

Lecture	**Content Delivered**
5	**Topic:** Logic Gates, Types of Logic Gates, Input/ Output levels and Truth Tables **Sub-topic** **N/A**
6	**Topic:** Basic Identities of Boolean Algebra, Boolean Algebra Analysis and Simplification **Sub-topic** **N/A**
Lab	**Topic:** • **To check the operation of OR gate according to the OR's truth table** • **To check the operation of NOT gate according to the NOT's truth table**

Online Google Classroom Classes Monitoring Screenshots

Following snapshots have been taken from google classroom platform where teachers have uploaded their material for students.

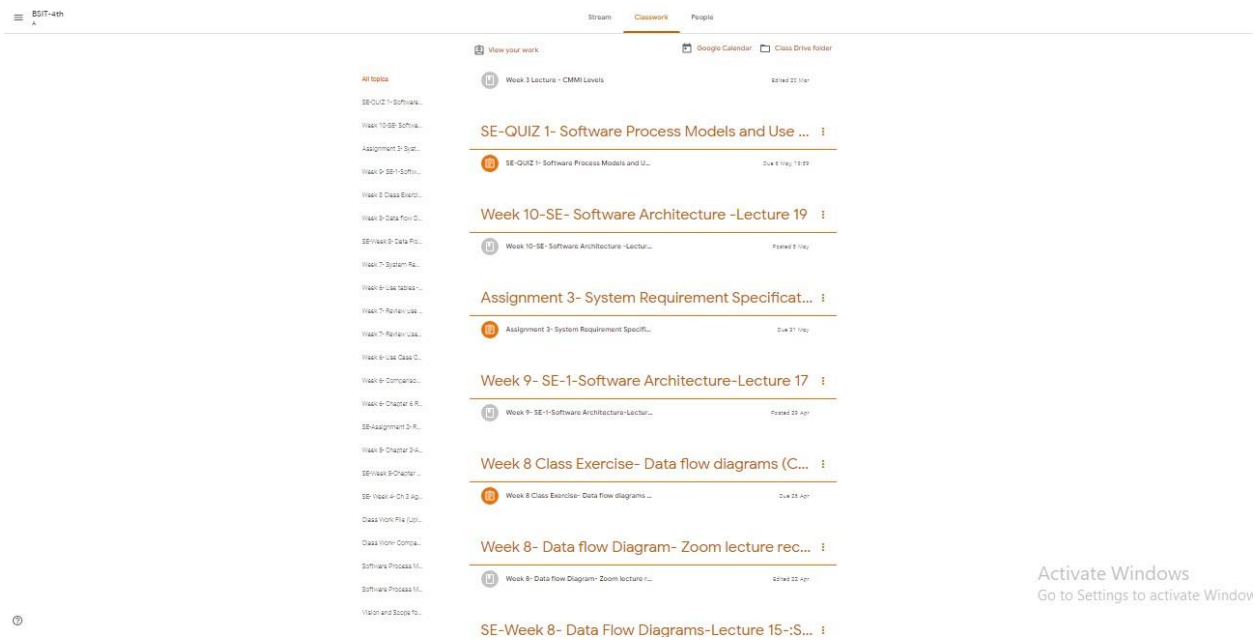


Figure -1: BSIT 4th Software Engineering

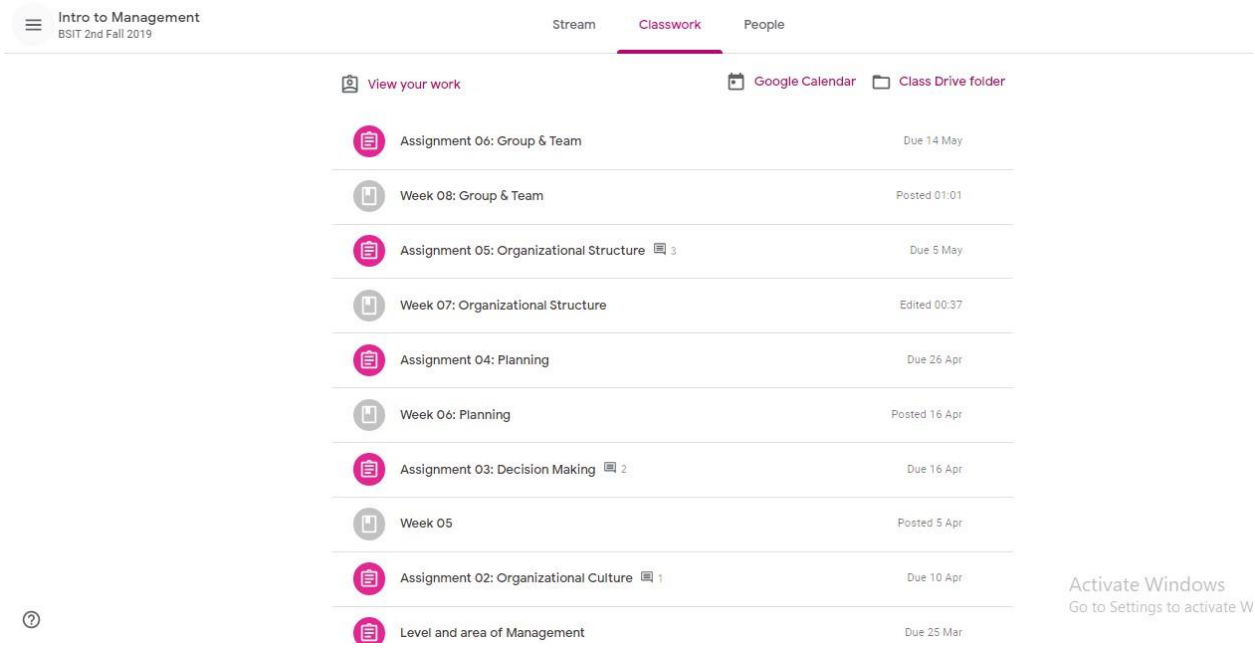


Figure ***Error! No text of specified style in document.****-2:BSIT 2 Intro to Management*

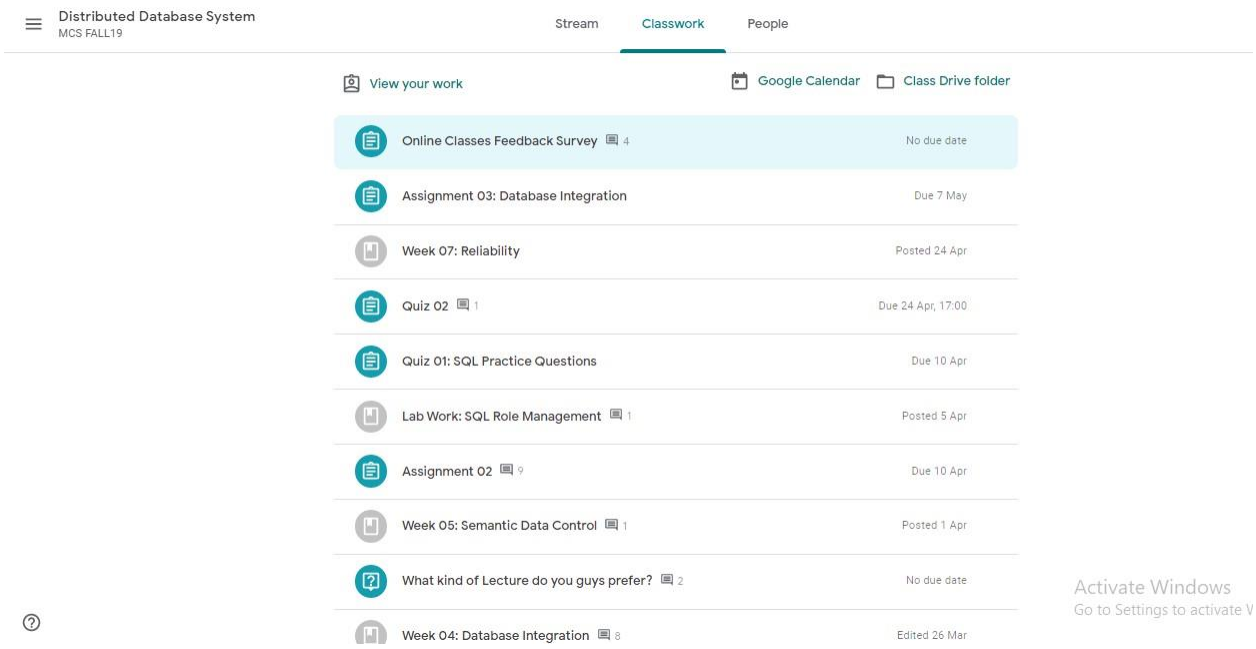


Figure -3: MCS 2 Distributed Database System

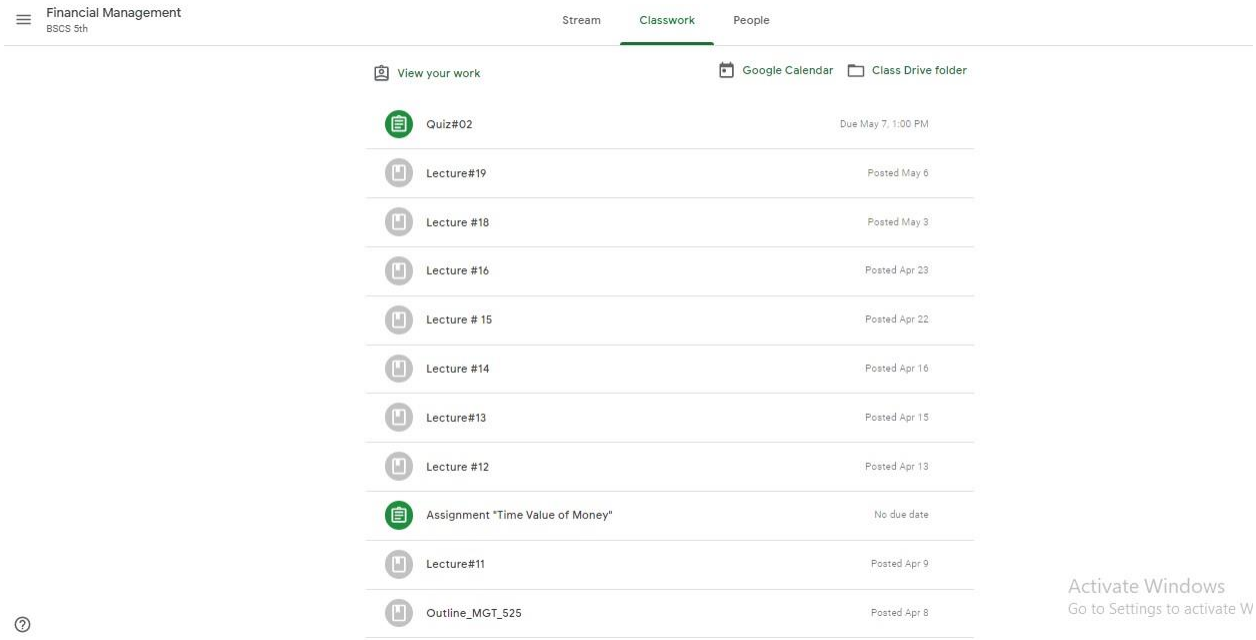


Figure-4: BSCS 5th Financial Management

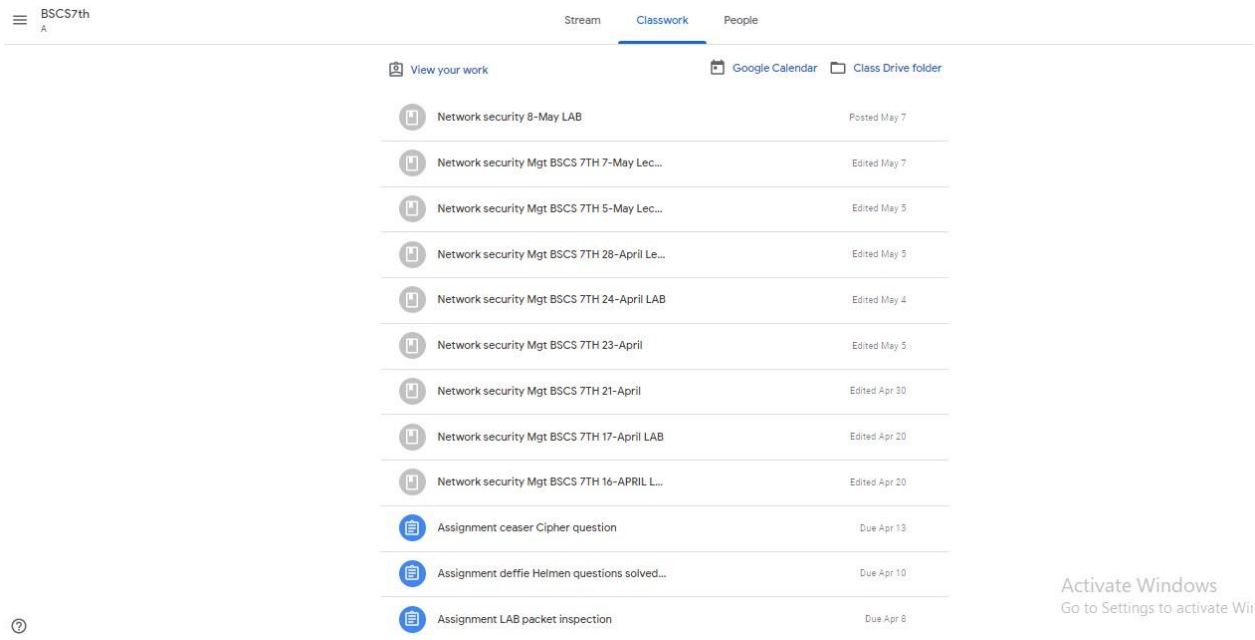


Figure -5: BSCS 7th Network Management and security

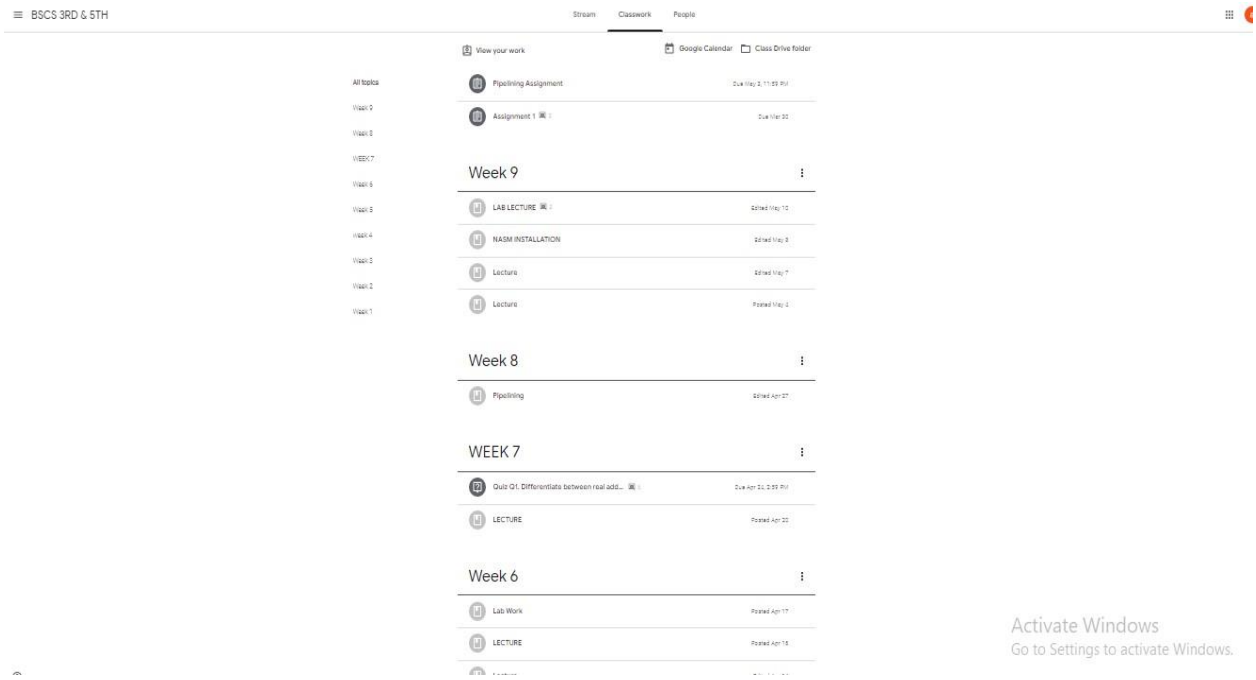


Figure -6:BSCS 3 Computer organization and Assembly language

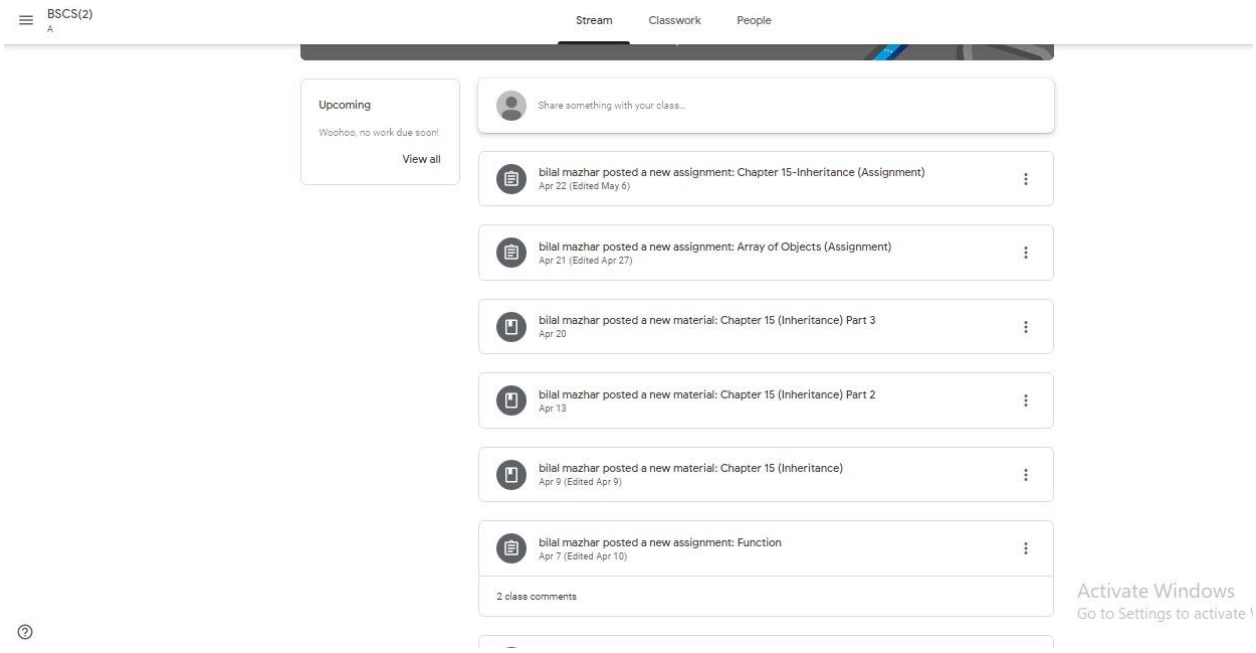


Figure -7: BSCS 2 Object Oriented Programming

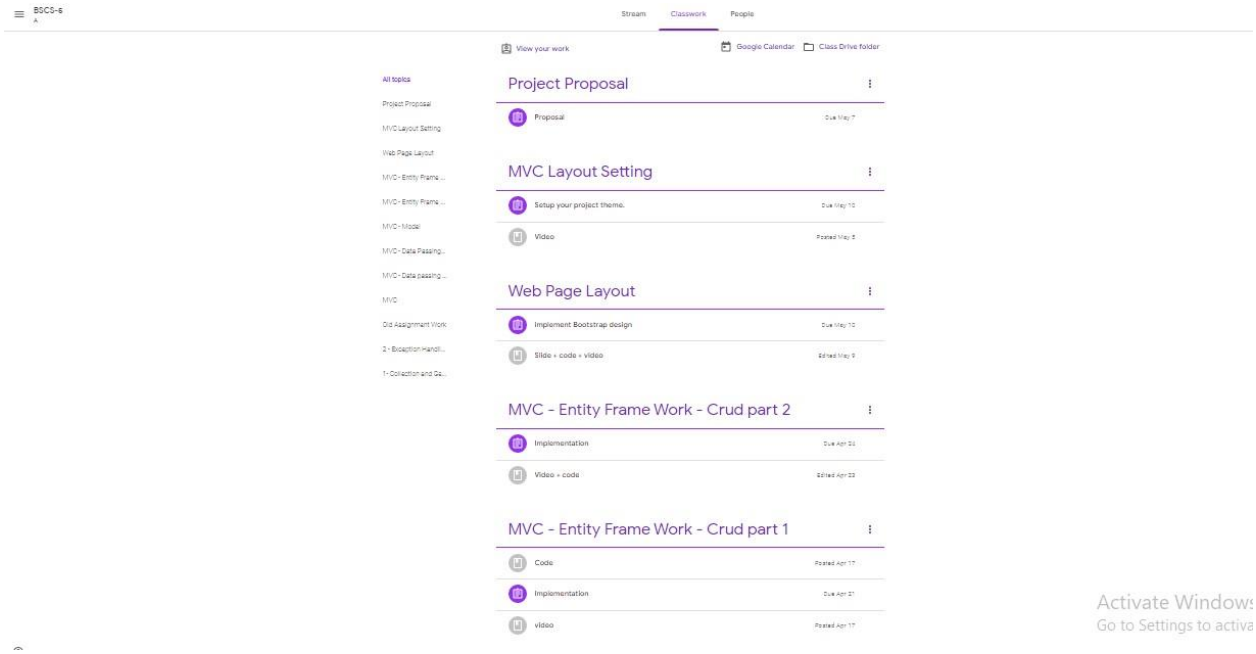


Figure -8: BSCS 5th Modern Programming Language

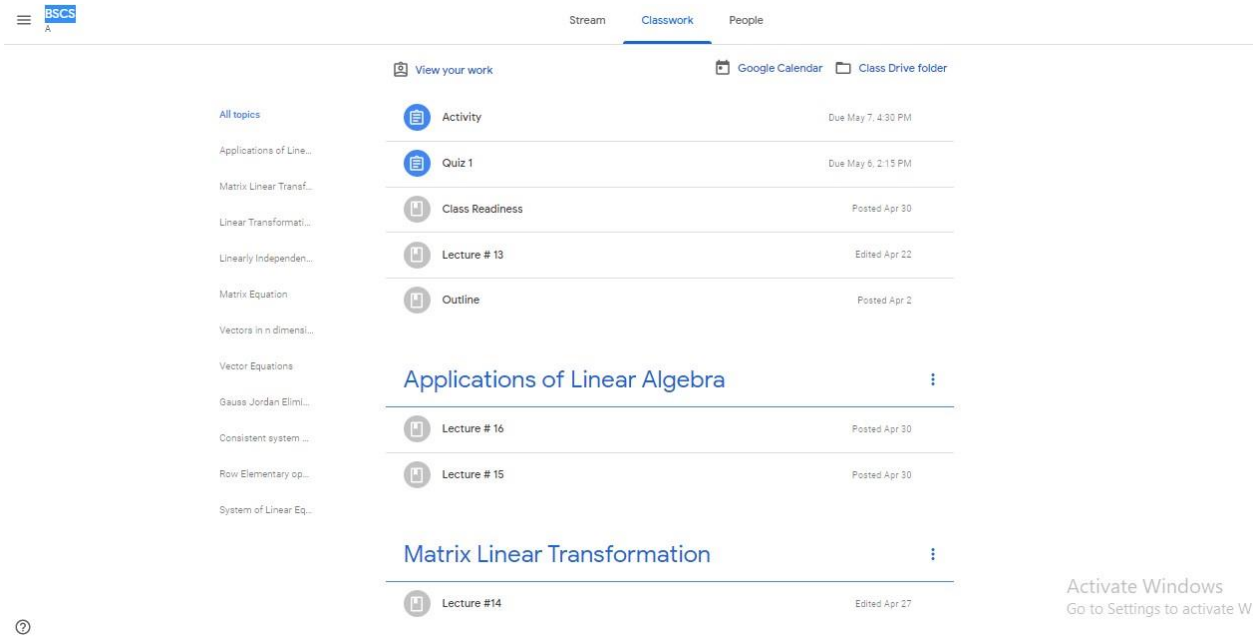


Figure -9:BSCS 4th Linear Algebra

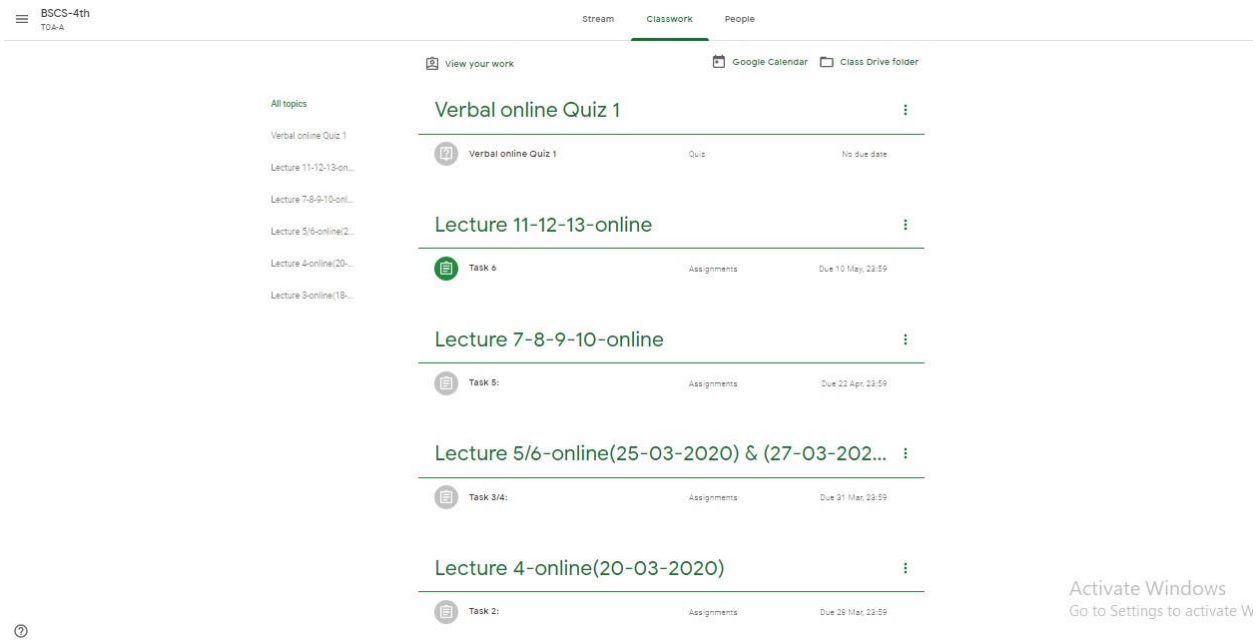


Figure ***Error! No text of specified style in document.****-10: BSCS 4th A Theory of Automata*

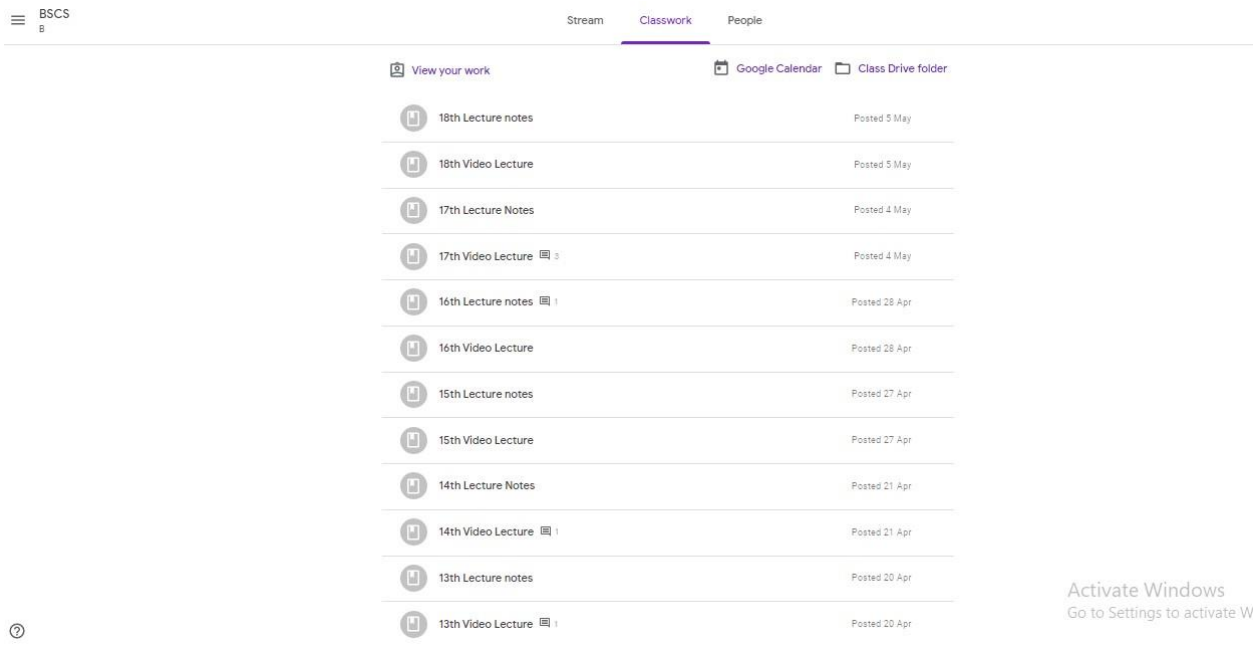


Figure-11: BSCS 2 B Statistics and Probability

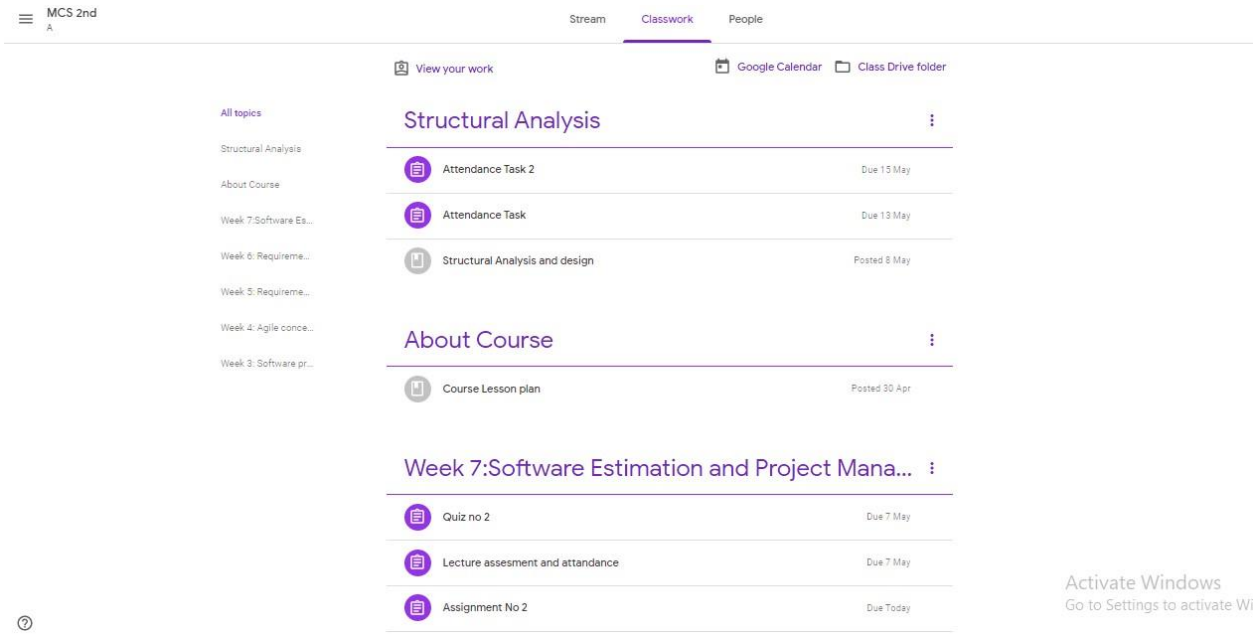


*Figure **Error! No text of specified style in document.**-12: MCS 2 Software Engineering*

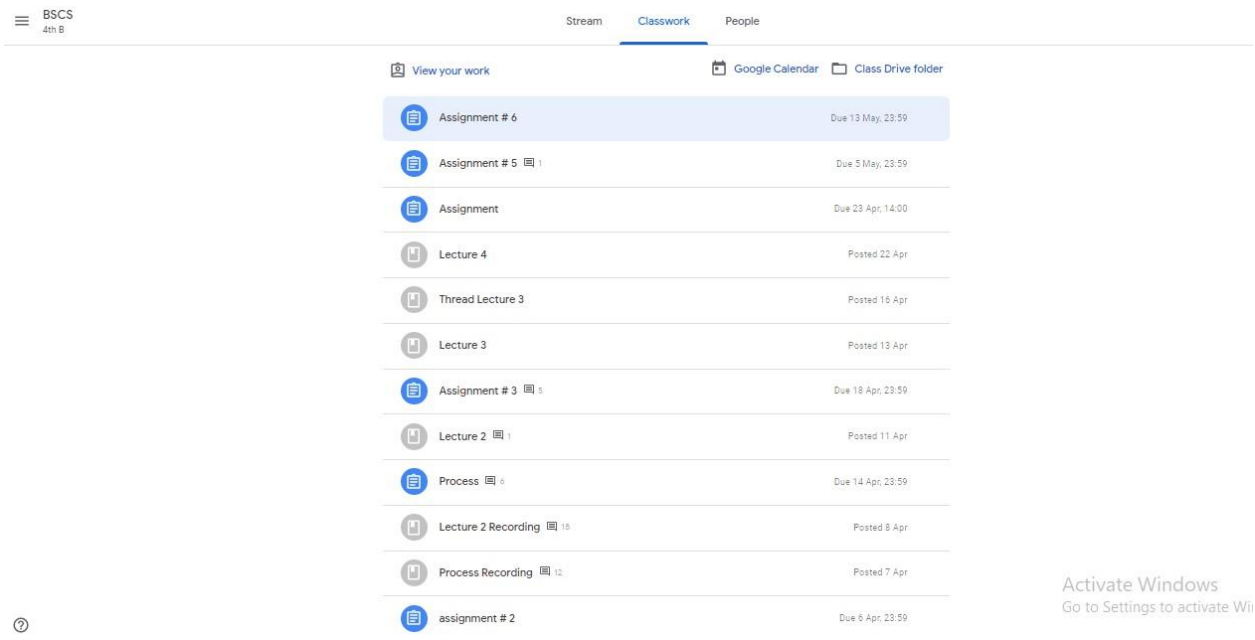


Figure -13: BSCS 4th B Operating System

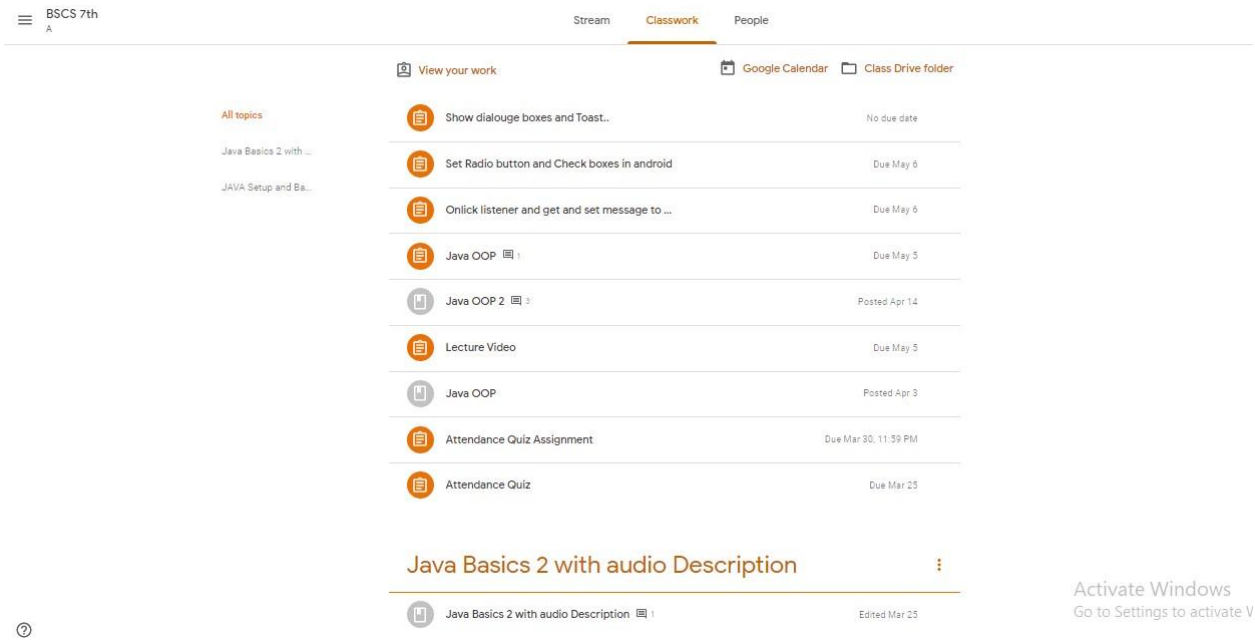


Figure-14: BSCS 7th Mobile Computing

instructor Manual
Online Class Instructions-Fall 2020

With reference to the deans/ directors meeting held on September 9, 2020, and notification PMAS-AAUR/3652 received on September 10, 2020, it has been decided that the classes of all semesters expect 1st semester will only be held online through University Learning Management. Here are some instructions for students and faculty to strictly follow during online classes for the semester Fall-2020.

1 Access to GIMS LMS

GIMS LMS login details had been already shared with all faculty members. You are requested to check your LMS before the commencement of classes on September 28, 2020, and ensure that you have access to timetable, resources (course material) attendance, and LMS (Quizzes, assignments, date sheet Mange Marks, etc.) and these are working for you. In case of any issues related to LMS, you are advised to connect to departmental coordinators ASAP via email and phone numbers. Here are the emails of departmental coordinators

Department of Management Sciences: coms@gim.edu.pk 0331-4081644

Department of Computer Science: cocs@gim.edu.pk 0345-6931085

Department of Information Technology: coit@gim.edu.pk 0335-4266771

2 Preparing to Teach

2.1 Course Readiness/Lesson Plan

Faculty assigned to teach a course that has already been developed for face to face teaching. Faculty are requested to develop a course readiness/lesson plan for each course in accordance with the provided template and upload in Google classroom/LMS a week prior to commencement of class.

2.2 Course Material

Faculty assigned to a course should identify and select any required textbooks/reference book, lecture handout/Case studies and/ or course materials in advance of the course start date. Use digital whiteboard/excel/ word/PowerPoint where it is required. When possible, faculty should upload the course content calendar for assignment and quiz one week prior to the course start

date For mathematical courses advised your students to use Mathtype, Mathalicious, and math editor.

2.3 Develop an Assessment Criteria

Clear expectations and directions for activities and assessments Providing explicit directions for course activities and assessments, as well as letting students know exactly (or as close as possible) what will be expected of them, is another way to reduce learners' confusion. This ultimately results in a better course experience for both students and instructor. Instead of spending time and energy worrying whether they are completing an assignment the way an instructor wants, students can focus that energy on the assignment itself. To help accomplish this, many online instructors provide their students with rubrics that students can use as a guide to help complete course assignments.

instructors have full authority to set his/her assessment policy for sessional marks and it can vary from course to course. For computer science and IT students term project is mandatory where is applicable to appear in the final term exam. However, the midterm and final term exams assessment will remain the same and the university plagiarism policy shall be applied. instructors are advised to take at least six quizzes and assignments for each course and give at least assigned 3-4 days for each task. Share assessment results on LMS within a reasonable time and also share a solution file in google classroom as well.

2.4 Survey student interests

Systematic, repeated quizzing integrated into learning is hard to pull off in a face-to-face classroom, but it is easily done online.

3 Class Schedule

Each Department has prepared the timetable with the consent of all faculty members and it is shared with students as well. All faculty members are requested to follow the timetable developed by the department coordinator. In case of any change in schedule please consult respective department coordinators. In case urgency instructor can reschedule the class however, to arrange a makeup class please communicate with CMO and CR/GR to avoid inconvenience and clash with other classes.

4 Maintain Googles classroom/LMS

- Create Google classroom with course code, course name, semester and section for instance **CS-323-Programming Fundamentals- BSCS-1st -Section A**
- Create and use a separate classroom for each class and section
- Upload course readiness/lesson plan before commencement of class
- Upload reference/textbook before commencement of class
- Upload lecture notes and related material week and lecture wise for instance Week 1- Lecture 01- PF- Introduction to PF
- Upload Zoom lecture Recordings with title -Zoom Recording -Week 1- Lecture 01- PF- Introduction to PF.
- Notify the students timely about class cancelation and reschedule of class

5 Maintain Attendance

The instructor is advised to maintain each course attendance week and lecture wise (please mention lecture number and date of lecture delivered) and shared with CMO via email cmo@gim.edu.pk with subject line **Attendance Record-Week 1- CS 323-PF**

6 Zoom Sessions

Take a separate zoom class for each section and class with the separate zoom id that you share with students. Please use the given formate and prepare a file for zoom meetings and send it to your respective department coordinators.

instructor	Course	Zoom Meeting ID	Passcode	Google Classroom Code

7 Communicate Information Using Multiple Channels

Communicate Information Using Multiple Channels If you have important information to convey to students, don’t use just one channel of communication, use multiple. For example, instead of simply posting information only in the announcements area of LMS, or only in the feedback area, or sending it only via email, include the information in all three of these places. This will reduce the number of students saying they did not get the memo.

8 Course Folders

You are requested to maintain your course folders as you did in last semester Spring 2020. Please follow the provided guidelines and ensure that you will put everything that is requested to you.

Manual For Students
Online Class Instructions – Fall 2020

With reference to the deans/ directors meeting held on September 9, 2020, and notification PMAS-AAUR/3652 received on September 10, 2020, it has been decided that the classes of all semesters expect 1st semester will only be held online through University Learning Management. Here are some instructions for students and faculty to strictly follow during online classes for the semester Fall-2020.

Instruction for Students

1 GIMS LMS

Before commencement of fall 2020 classes, all students ensure that they have their GIMS LMS login details and have access to timetable, resources (course material) attendance, and LMS (Quizzes, assignments, date sheet, etc.) In case of any issues related to LMS, you are advised to connect to departmental coordinators ASAP via email. Discussing your grievances on WhatsApp will not solve any issue, so kindly refrain from doing so. Follow the proper channel to communicate Here are the emails of departmental coordinators

Department of Management Sciences: coms@gim.edu.pk

Department of Computer Science: cocs@gim.edu.pk

Department of Information Technology: coit@gim.edu.pk

2 Username Policy for Google Classroom/Zoom

You are instructed to use a single email for zoom and google classroom. You are also advised to use a proper email address (e.g. arslanahmad16Arid526@gmail.com) and avoid joining the google classroom/zoom meeting with multiple emails and devices. Your google classroom and zoom must be named with your First name and university registration number**.**

3 Attendance Policy

Follow the timetable provided by departments, in case of any clash and issue communicate with your coordinator. Students ensure their presence for zoom meetings and attendance policy can vary from instructor to instructor. The student with attendance less than 80% would not be eligible for the final term exam.

4 Assessment Policy

instructors have full authority to set his/her assessment policy for sessional marks and it can vary from course to course. For computer science and IT students term project is mandatory where is applicable to appear in the final term exam. However, the midterm and final term exams assessment will remain the same and the university plagiarism policy shall be applied.

5 Course Material Access Policy

Visit your google classroom and LMS daily for course contents and notification. Course outlines/lesson plan, reference books, lecture notes/slides, assignment quizzes, lecture recordings, and other additional material will be shared both on google classroom and LMS

6 Class Rule Policy

- Check your google classroom/LMS daily for the latest notifications.
- Ensure your presence 10 minutes before your online class.
- Ensure you have a proper place/room to attend the class, without any disturbance/ distraction. m
- Ensure your system mice and webcam are working properly.
- Don’t mock or criticize the online classes or university/ instructor efforts
- The submission date for assignment and other assessments must be followed strictly.
- Prefer to use laptops instead of smartphone/tablets
- Actively participate in your class
- If you have any issue kindly bring them into the notice of The instructor and Coordinator
- Discussing your grievances on Whatsapp will not solve any issue, so kindly refrain from doing so. Follow the proper channel to communicate (google classroom, official Email) with your instructor.

Course Folder Link- Spring 2020

		ali.jutt1009@gmail.com	
1	Gulsher Ali		
		Compiler Constructions(CS-636)-BSCS-7th-A	https://drive.google.com/drive/folders/1jSkX8A5-mBUZinIskyMdDogh8JI18Fqi?usp=sharing
		Theory of Automata and Formal Languages(CS-536)-BSCS-4th-A	https://drive.google.com/drive/folders/1biKjjjjhhVX5zGysCRlpk6sy5IoDNirt?usp=sharing
		Theory of Automata and Formal Languages(CS-536)-BSCS-4th-B	https://drive.google.com/drive/folders/1lL_8CJQdzg8Cq_tHfER_Yz3nJcHelyRm?usp=sharing
		Theory of Automata and Formal Languages(CS-536)-BSCS-5th-A	https://drive.google.com/drive/folders/1eSXQCb_tyii9Gw6LAjM6NNzmbJCuPceq?usp=sharing
2	Maha butt CF		
		IT in Business-ll CF	https://drive.google.com/file/d/1_ckXcMg6-HsDoZnA_AOCYQ-DAlbJVDhw/view?usp=sharing
		Management Information System CF	https://drive.google.com/file/d/1Lpf8iStwaR8D3kAsrKMm42ksQzwR6Zzw/view?usp=sharing
		Professional Ethics CF	https://drive.google.com/file/d/1RGdxcSX8WpXdRD52mhG42mE3yqABxLoP/view?usp=sharing
		Professional Practices CF	https://drive.google.com/file/d/1Dfwl-42-xgoBVnekrV4mCuOXQf10xYt7/view?usp=sharing
3	Mam Maryam		
		Communication & presentation skills BSCS 2nd (A)	https://drive.google.com/drive/folders/1GY5krvhyafCOH3eY8fMENKAb9n7aXmcr?usp=sharing
		Communication & presentation skills BSCS 2nd (B)	https://drive.google.com/drive/folders/1z7ioNbrSCze6gTw24xCpwQpJmC8NUAlB?usp=sharing
		Communication & presentation skills BSIT 2nd	https://drive.google.com/drive/folders/12NhSrOTa5gbpHrBlpYObXj8rIhmmWuwR?usp=sharing
		Technical & business writing (MCS & CS7)	https://drive.google.com/drive/folders/1UkRB8bQXMkhEUEYfUTr1_my38KdmC20v?usp=sharing

4	Ms Natasha		
		introduction to marketing	https://drive.google.com/drive/folders/13EoKSkb3Q1TpDLg0QL1QAMSZ5TF-77gK?usp=sharing
5	Muhammad Abrar		
		COA	https://drive.google.com/drive/folders/1100jlb4gAy4jqnu04G2-c-8WX34CV60S?usp=sharing
		SE	https://drive.google.com/drive/folders/1oeqaU6QAjfedIIhrWNinBQuyz5h0oQYY?usp=sharing

21 Annexure K: Faculty Resume

<table>
<tr><td colspan="4">Performa 9
Faculty Resume</td></tr>
<tr><td>Name</td><td colspan="3">Abdul Sittar</td></tr>
<tr><td>Personal</td><td colspan="3">Department: Computer Science
Date of Appointment: Lecturer
Email Address: abdulsittar72@gmail.com
Contact No : +923319607134</td></tr>
<tr><td rowspan="4">Experience</td><td>Designation</td><td>Institute</td><td>No. of Years</td></tr>
<tr><td>Lecturer</td><td>GIMS</td><td>0.5</td></tr>
<tr><td>Software Engineer</td><td>Nextbridge (pvt) Lahore</td><td>4.5</td></tr>
<tr><td>Associate SE</td><td>Satistrum, Lahore</td><td>0.5</td></tr>
<tr><td>Honor and Awards</td><td colspan="3">List honors or awards for scholarship or professional activity.</td></tr>
<tr><td>Memberships</td><td colspan="3"></td></tr>
<tr><td>Post Graduate Students</td><td colspan="3"></td></tr>
<tr><td>Undergraduate Students</td><td colspan="3">Ameer Hamza, Sumbal Akhtar, Rafia, Pakeeza Arshad</td></tr>
<tr><td>Honour Students</td><td colspan="3"></td></tr>
<tr><td>Service Activity</td><td colspan="3">Lecturer and PMO</td></tr>
<tr><td>Brief Statement of Research Interest</td><td colspan="3">Interests : NLP and Machine Learning.
Research Work : (1) My research work focused on text reuse and plagiarism detection using Information Retrieval, (2) Author Profiling</td></tr>
<tr><td>Publications</td><td colspan="3">Abdul Sittar, Iqra Ameer. “Multi-lingual Author Profiling Using Stylistic Features In FIRE'18 - MAPonSMS.2018.
Sittar, Abdul, Hafiz Rizwan Iqbal, and A. Nawab. "Author Diarization Using Cluster- Distance Approach.” Working Notes</td></tr>
</table>

	Papers of the CLEF (2016) Pervaiz, Ifrah, Iqra Ameer, Abdul Sittar, and Rao Muhammad Adeel Nawab. "Identification of AuthorPersonality Traits using Stylistic Features." In Proceedings of CLEF. 2015. Cheema, Waqas Arshad, Fahad Najib, Shakil Ahmed, Syed Husnain Bukhari, Abdul Sittar, and Rao MuhammadAdeel Nawab. "A Corpus for Analyzing Text Reuse by People of Different Groups." (2015)
Research grants and Contracts.	-
Other Research or Creative Accomplishments	iPhone & iPad : Zameen, Bayut, Digital Life, Triwire, Curayt, Medical Resource, Exhibi, Traffic Friends, iMove, MyBiv, iQuran with voice tags Android: TrafficFriends, Intelligent Messeging,
SelectedProfessional Presentations	Machine Learning in iOS (Nextbridge (pvt.) Lahore)

Performa 9
Faculty Resume

Name	FAISAL MUNIR		
Personal	Department: Management Sciences Date of Appointment: 16 Oct 2016 Email Address: faisal.leo4@gmail.com Contact No: 0343-6231112		
Experience	Designation	Institute	No. of Years
	Lecturer	GIMS ARID	2.5
	Lecturer	UOG	1
	Lecturer	NCBA & E	1
Honor and Awards	List honors or awards for scholarship or professional activity.		
Memberships	NA		
Post Graduate Students	NA		
Undergraduate Students	NA		
Honour Students	NA		
Service Activity	NA		
Brief Statement of Research Interest	Main objective of my research line is to produce quality research on the issues in development economics, mainly focusing on measuring and determining the concepts of multidimensional inequality, poverty, gender, social inclusion, inclusive growth and wellbeing.		
Publications	Munir, F and Samiullah (2018). Inclusive growth in Pakistan: Measurement and Determinants. The Pakistan journal of Social Issues Vol. 6. Munir, F., Ashfaq, M and Ashfaq, A (2018). Financial Development and Inclusive Growth in Pakistan: A Threshold Analysis. International Conference of Economic. Munir, F and Samiullah (2018). External Efficiency of Education system of Pakistan: Measurement and Impact on Foreign Direct Investment. 2nd FCCU Economics Research Conference. Munir, F and Samiullah (2018). Income Inequality and Education in South Asia: Empirical Investigation under Persistence, Endogeneity, and Heterogeneity. National		

	Conference on CPEC, Institutions and Inclusive Growth in Pakistan. Faisal Munir, Khurram Shahzad, Sardar Shakeel and Abre Rehmat (2017). Rich-Poor Gap and Health Inequality Among Married Women in Pakistan. International conference on poverty and social inequalities in Pakistan Faisal Munir (2017). Impact of Ageing on equilibrium interest rate in Pakistan. Help Age conference, American institute on Pakistan studies Dr. Atif Ali Jaffri, Fatima Farooq and Faisal Munir (2016) Impact of Demographic Changes on Inflation in Pakistan. Pakistan Economic and Social Review Vol. 54. Faisal Munir, Nasir Mahmood and Amir Zeb (2015) Impact of Redistribution on Income Inequality and Economic Growth in Pakistan Journal of Global and Scientific Issues Vol. 3. Amir Zeb and Faisal Munir (2015).Impact of Foreign Direct Investment on Energy Saving in South Asian Countries. Journal of Asian Development Studies Vol. 4 Faisal Munir and Amir Zeb (2015). Impact of Population, Trade and economic development on Environmental degradation: A Cross Country Analysis. Journal of Global and Scientific Issues Vol. 4
Research grants and Contracts.	NA
Other Research or Creative Accomplishments	NA
Selected Professional Presentations	NA

Performa 9
Faculty Resume

Name	Nazish Mushtaq		
Nazish Mushtaq	Department: Faculty of Management Sciences Date of Appointment: 28th September 2018 Email Address: nzsh.mushtaq@gmail.com Contact No :		
Experience	Lecturer	University Of Gujrat	1.5
	Lecturer	Gujrat Institute of Management Sciences	0.5
	Lecturer	University of Central Punjab (Gujrat Campus)	0.5
Honor and Awards	List honors or awards for scholarship or professional activity.		
Service Activity			
	May be as brief as a sentence or contain additional details up to one page in length.		
Factor effecting the Stock Market Development: Evidence from Pakistan VOL 6. NO 6. November, 2014 (INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH)	List publications in standard bibliographic format with earliest date first. Manuscripts accepted for publication should be included under appropriate category as " in press;" Segment the list under the followi9ng standard headings: Articles published by refereed journals. • Books. • Scholarly and / or creative activity published through a refereed electronic venue. • Contribution to edited volumes. • Papers published in refereed conference proceedings. • Paper or extended abstracts published in conference proceedings. (refereed on the basis of abstract) • Articles appearing in in-house organs.		
Research grants and Contracts.	Entries should include: Date Title Agency / OrganizationTotal Award Amount Segment the list under following headings:CompletedFunded and in progress In review		
Impact of Merger and Acquisitions	List patents, software, new products developed, etc.		

oShareholder's Wealth	
Selected Professional Presentations	

Performa 9
Faculty Resume

Name	Yasmin Toor		
Personal	Department: Agricultural Sciences Date of Appointment: October 1st, 2918 Email Address: yasmintoor@gmail.com Contact No : +92-345-5303555		
Experience	Designation	Institute	No. of Years
	Research Coordinator	Islamic Online University	01
Honor and Awards	Talent Farming Scholarship (TFS) UOG Merit Scholarship Certificate of Merit (UOG, for BS Hons) Gold Medal (BS Hons)		
Memberships	N/A		
Post Graduate Students	06		
Brief Statement of Research Interest	Tropical Agriscience, Medicinal Plants & Natural Healing Practices, Solid State Fermentation, Antimicrobial Activities, Comparative Religion, Quranic Exegesis and Creed (Aqeedah)		
Publications	Nisar, Muhammad Farrukh, Farrukh Jaleel, Yasmin Toor, Sajil Ismail, Muhammd Arfan, Syed Mujtaba Haider and Robina Bashir. "Composition of Understory Vegetation in Major Shrub Species of Cholistan Desert, Pakistan." World Applied Sciences Journal 28 (5): 629-635. (2013) Nisar, Muhammad Farrukh, Farrukh Jaleel, Muhammad Waseem, Sajil Ismail, Yasmin Toor, Syed Mujtaba Haider, and Julia Li Zhong. "Ethno-medicinal uses of plants from District Bahawalpur, Pakistan." Current Research Journal of Biological Sciences 6, no. 5 (2014): 183-190. Nisar, Muhammad Farrukh, Farrukh Jaleel, Muhammad Waseem, Sajil Ismail, Yasmin Toor, Syed Mujtaba Haider, and Julia Li Zhong. "Ethno-medicinal uses of plants from District Bahawalpur, Pakistan." Current Research Journal of Biological Sciences 6, no. 5 (2014): 183-190.		

	Toor, Yasmin, and Umbrin Ilyas. "Optimization of cellulase production by Aspergillus ornatus by the solid-state fermentation of Cicer arietinum." American Journal of Research (2014). Toor, Yasmin, Khalid Nawaz, and Khalid Hussain. "Antibacterial activity of fumaria indica (hausskn.) pugsley against selected bacterial strains." PAKISTAN JOURNAL OF BOTANY 47, no. 5 (2015): 2031-2035.

Performa 9
Faculty Resume

Name	GUL SHER ALI		
Personal	Department: Computer Sciences Date of Appointment: Spring 2019-Visiting Email Address: gulsher.ali@gim.edu.cn Contact No: 03338498318		
Experience	Designation	Institute	No. of Years
	Lecturer	GIMS-AAUR-Grt	~1
	Lecturer(Contract/CTI)	Govt.Zamindar College, Grt	~1
	Software Engineer	NetSol Technologies, Lhr	~1
	Intern-S/W Engineer	PakExperts Technologies, Jhelum	~1
Honor and Awards	CSC Scholarship holder (China).		
Memberships	Toastmasters International.		
Post Graduate Students	N/A		
Undergraduate Students	20 Groups		
Brief Statement of Research Interest	My main research interests lie in the intersections between Human computer Interaction, User behavior, UX, persuasive computing, and information studies. I identify myself both as an applied computer scientist and an experimental behavioral scientist, working in the context of Human-Computer Interaction. I value basic and empirical understanding of people's behaviors, and I am particularly motivated to put such understanding in action, using mixed-methods and approaches to address problems identified by behavioral studies. My research encompasses components of understanding and problem solving.		
Publications	1- **Graphical layouts exploration from aesthetics & cognitive load perspective using EEG & eye tracking:** Titled research paper is under publication process in "International Journal of Human Computer Studies". 2- **BCI; Stroke patient's rehabilitation using game:** The paper is also submitted and under review in journal and I have been acknowledged in that paper.		

Research grants and Contracts.	Got fund of 100k RPs. for my final year project [Digital Event Management Portal] from National ICT R&D Fund under the scheme "National Grassroots ICT Research Initiative – (2012-13)".
Other Research or Creative Accomplishments	Completed "INTEL entrepreneurship basics training" under the Intel Youth Enterprise Program, Pakistan.
Selected Professional Presentations	n/a

Performa 9
Faculty Resume

Name	Zainab Mahmood		
Personal	Department: Computer Science Date of Appointment: October 2, 2017 Email Address: Zainab.cheema01@hotmail.com Contact No : 03016243297		
Experience	Designation	Institute	No. of Years
	College Teaching Internship	Government College for Women	8 month
	Lecturer	Gujrat Institute of Management Science	October 2, 2017 -Current
Honor and Awards	N/A		
Undergraduate Students	Supervised 12 Final Year Projects from Fall 2016 to Spring 2019		
Honour Students			
Service Activity	Student Service and Affair		
Brief Statement of Research Interest	May be as brief as a sentence or contain additional details up to one page in length.		
Publications	Zainab Mahmood, Javed Anjum, “Heuristic Evaluation Of E-Shopping Websites to Reach the Women in Pakistan" accepted for publication in Journal of Social Sciences and Interdisciplinary Research (JSSIR) Volume 6, No. 1, 2017 ZainabMahmood, Javed Anjum, Aneela Abbas "Design Consideration of Online Shopping Website to Reach Women in Pakistan" Published in Journal Procedia Manufacturing, Volume III, page 3582 to 3588, Published by Elsevier B.V., 2015. Amna Noor Elahi, Zainab Mahmood, Iqra Ilyas, "Digital Storytelling as Powerful Educational Tool for primary schools" published in International Conference of Information CommunicationTechnology (ICICT) 2015 Zainab Mahmood, Sana Shahzadi, Sahar Tariq “Content Management & user interface for uneducated users” Published in HCI International 2014” held in Greece (June 2014). Marcus (Ed.): DUXU 2014, Part III, LNCS 8519, pp. 432–441, 2014.		
Other Research or Creative Accomplishments	List patents, software, new products developed, etc.		

Performa 9
Faculty Resume

Name	Maryam Ashfaq		
Personal	Department: Management Sciences Date of Appointment: 25 Oct, 2016 Email Address: Maryam.warraich@hotmail.com Contact No: 0321-5991001		
Experience	Designation	Institute	No. of Years
	Lecturer	GIMS ARID	2.5
Undergraduate Students	Supervised 3 Final Year Projects from Fall 2016 to Spring 2018		
Honour Students	NA		
Service Activity	NA		
Brief Statement of Research Interest	My research interests: • Corporate Finance • Financial Economics • International Finance		
Publications	Munir, F., Ashfaq, M and Ashfaq, A (2018). Financial Development and Inclusive Growth in Pakistan: A Threshold Analysis. International Conference of Economic. Rashid, A., & Ashfaq, M. (2017). Financial Constraints and Corporate Cash Holdings: An Empirical Analysis using Firm Level Data. Annals of Financial Economics, 12(02), 1750009. Ashfaq, A., Ali, R., Habiba, U., & Ashfaq, M. (2017). Child labour in Pakistan: consequences on children's health. International Journal of Human Rights and Constitutional Studies, 5(1), 82-90.		
Research grants and Contracts.	NA		
Other Research or Creative Accomplishments	NA		
Selected Professional Presentations	NA		