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SELF-ASSESSMENT REPORT

B.Sc. in Electrical and Electronic Engineering

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B.Sc. in Electrical and Electronic Engineering

Departmet of Electrical and Electronic Engineering

University of Asia Pacific

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List of Acronyms

CLO	Course Learning Outcomes
CV	Curriculum Vitae
EPRT	External Peer Review Team
HEI	Higher Education Institution
HEQEP	Higher Education Quality Enhancement Project
ILO	Intended Learning Outcome
IQAC	Institutional Quality Assurance Cell
KPI	Key Performance Indicators
MoE	Ministry of Education
NEP	National Education Policy
PSAC	Program Self-Assessment Committee
QA	Quality Assurance
QAC	Quality Assurance Committee
QAACB	Quality Assurance]& Accreditation Council, Bangladesh
QAU	Quality Assurance Unit in the UGC
QF	Qualifications Framework
RPI	Research Performance Indicators
SA	Self-Assessment
SAC	Self-Assessment Committee
SAR	Self-Assessment Report
TPI	Teaching Performance Indicators
UGC	University Grants Commission of Bangladesh
UIC	University Industry Collaboration
VC	Vice Chancellor
WB	The World Bank

Chapter 1

Introduction

Self-appraisal is an organized procedure for evaluating present characteristics and conditions of academic program with an aim to improve the existing and future programs of educational institutions. It is considered as a prerequisite for any kind of future planning as well as a checklist to find whether the quality standards are being met. The accepted definition of self-assessment by UGC taken from Paloumbas and Banta's (1999) model states that "self-assessment means the systematic collection, review and use of information about educational programs taken from multiple sources for the purposes of improving student learning and development".

1.1 Significance of Program Self-Assessment

The self-assessment exercise is a globally practiced effective approach to gain a clear understanding of current situation which helps to judge the overall effectiveness of academic program and educational processes. It provides an opportunity to attain a deeper understanding of the areas that may need improvement. That is why, the self-assessment exercise has become one of the core activities of quality enhancement in the academic programs that department of Electrical and Electronic Engineering (EEE) at University of Asia Pacific (UAP) offers with the following objectives:

i. Identify learning needs.

ii. Assess the teaching learning capacity of the institution.

iii. Review the existing procedures.

iv. Identify the areas need to be improved.

v. Create a basis for external assessment and validation.

vi. Provide guidelines or direction to the program offering entity or to the University for Strategic planning.

Therefore, the significance of the program self-assessment lies in the following key points:

- Understanding the current state of quality of education the institution is providing
- Identifying the areas and issues that need to be addressed and improved to enhance and maintain quality in education
- Integrating the concerns of major stakeholders into the educational system to provide better experience

1.2 Process of Assessment

The process of assessment can be divided into several segments:

- Customizing the standards to be measured which includes the following areas:

  i. Governance

  ii. Curriculum content design and review

  iii. Student admission, progress and review

  iv. Physical facilities

  v. Teaching-learning and assessment

  vi. Student support services

  vii. Staff and facilities

  viii. Research and extension

  ix. Process management and continuous assessment

- Following these criteria as standard, model survey-questionnaire has been settled and 5 groups of participants student, alumni, faculty-member, non-academic staff and Employer have been chosen for this assessment purpose. The survey-questionnaire has been distributed among these 5 groups of stakeholders and the numbers of final respondents are –

Student	395
Alumni	197
Faculty member	31
Non-academic staff	18
Employer	37

  Moreover, all available documents associated with teaching-learning and research such as curriculum-course outlines, examination question-answer script and student's performance-assessment reports has been taken for review purpose.

- Standard statistical methodology has been followed to process and evaluate the collected data. In the questionnaires of the survey, the response thoughts were taken as strongly agree, agree, neutral, disagree, strongly disagree and not known which are counted in terms of scores 5, 4, 3, 2, 1 and 0. This report has been prepared using the analysis of the received data.

1.3 Overview of the University

University of Asia Pacific (UAP) started its journey in 1996 with three disciplines at some rented buildings in Dhanmondi. To accommodate its rapidly increasing students, UAP foundation has undertaken activities to hasten the construction of its own permanent "CITY CAMPUS" on a previously bought 99 decimals piece of land in the center of the capital at Green Road to shift there as many of the Departments as possible. Migration started in September, 2015 by shifting the Administrative office to permanent campus and by April, 2016 all Departments of UAP were shifted to the permanent campus in Green road except Civil Engineering Department who migrated just one semester later. City campus is located at House 74/A, Green Road, Dhaka and includes 2449.25 square meters (i.e 3,88,800 sq.ft) of space in a 10 storied building with 3 basements (with possible scope of extension of 2 more stories). The campus is designed to meet all academic, professional and social requirements of the university to provide a stimulating environment for education having standard class rooms, labs, large auditorium, library, reading rooms,medical supports and various clubs for different co-curricular and extra-curricular activities.

Vision

UAP holds steadfastly its passion to do better and better in fulfilling our young generation's needs and aspirations for a caring and quality education in casting their future career and become a desirable destination for an identity.

Mission

UAP mission is to offer best possible education to our young generation. Towards the mission, UAP continues to develop a sustained culture of ascending to a top-tier of vibrant academic environment; maintain and foster well qualified faculty, provide adequate research support for cutting-edge research in-house and in collaboration national and international peers; update curricula to keep up with advancing trend in science and technology, use state-of-the-art best practices in teaching-learning and modern facilities in laboratories and libraries; and provide other supports in aid to students' becoming competent graduates with their potential fully realized and personality well-developed for joining the global forces in making the future of society in a changing world.

Details of academic programs at UAP is given in Table 1.1.

Table 1.1: Academic Programs at University of Asia Pacific

Program and Name of Degree	Field/ Specialization	Full/ Part-time	Year of Starting	Duration (Years)	No of Current Students	No of Current Faculties
Undergraduate	Architecture, B. Arch.	Full Time	1997	5 years	299	18
	Business Administration, BBA	Full Time	1996	4 years	515	18
	Civil Engineering B. Sc. In CE	Full Time	1997	4 years	714	26
	Computer Science and Engineering, B. Sc. In CSE	Full Time	1996	4 years	947	25
	Electrical and Electronic Engineering, B. Sc. in EEE	Full Time	2004	4 years	723	37
	English, B.A. Hons	Full Time	2010	4 years	205	14
	Laws, LL.B. Hons	Full Time	2005	4 years	270	11
	Mathematics, B. Sc. Hons	Full Time	N/A	4 years	N/A	10
	Pharmacy, B. Pharm. (Hons)	Full Time	1996	4 years	826	27
Postgraduate Degree	Business Administration (MBA, EMBA)	Full Time	2000	1-2 Years	226	18
	Civil Engineering, M. Sc. in CE	Full Time	2009	1-2 Years	46	26
	Computer Science and Engineering (MCSE)	Full Time	2006	1-2 Years	20	25
	M.A. in English	Full Time		1 Year	15	10
	M.A in English	Full Time		2 Years	N/A	
	Laws, LL.M	Full Time	2005	1 Year	39	11
	Pharmaceutical Technology, MS. Pharm. Tech.	Full Time	2003	1 Year	243	27

1.4 Overview of the Program Offering Entity: Department of Electrical and Electronic Engineering (EEE)

Proper education in Electrical and Electronic Engineering is an essential element for the sustainable growth of a developing country like Bangladesh. Department of Electrical and Electronic Engineering (EEE) started its journey at the year of 2004. The Department of Electrical and Electronic Engineering aims to provide theoretical and practical education of the highest quality in this field to prepare its graduates with the necessary skills to serve both nationally and internationally as worthy professionals, academicians and researchers.

Vision:

- The vision of Electrical and Electronic Engineering Department at University of Asia Pacific is to reach at an educational excellence in full compliance to the international standards of quality assurance.
- The Department will produce quality graduates capable of taking the challenges of the rapidly changing field of Electrical and Electronic Engineering as well as capable of making significant contribution to individual and societal empowerment.

Mission:
The mission of the Department of Electrical and Electronic Engineering at University of Asia Pacific is:

1. to provide quality education at an affordable cost in the areas of Electrical and Electronic engineering.
2. to enhance the competitiveness of our graduates in the job market and contribute to the economic, scientific and social development of the country.
3. To maintain a positive academic environment that promotes excellence in learning and research through constructive interaction between students, faculty, industry and community.
4. to utilize the available resources to instill latest technical knowledge and research capabilities that encourage critical thinking, problem solving skills and ethical responsibility as well as develop students' verbal and written communication skills.

The long-term goal of the EEE department is to become a major center of higher education and research in Electrical and Electronic Engineering both nationally and internationally. The department is modeled to provide excellent teaching and research facilities for students with

teachers of the highest quality along with well-equipped and spacious classrooms with modern instructional tools, library, laboratories and research centers in various branches of Electrical and Electronic Engineering. The department already has the necessary faculty, classroom and laboratory facilities to run simultaneous undergraduate and graduate programs.

Over the last seven years, the department has grown to a largely classroom-based department with laboratory facilities in Electrical, Electronics, Power System, Machines, Control System, Power Electronics, Microwave Engineering, Computer Programming, VLSI, Measurement and Instrumentation etc. The departmental computer lab is equipped with sufficient number of quality computers with Internet facilities. The department has expanded to more than twice the area it had six years back and has graduated 19 batches of students, most of whom are well placed in the job market. The quality of the EEE faculty is excellent and most of them now possess post-graduate degrees and a number of publications, all of them with excellent academic records.

The recent purchase of land for the university's permanent campus opened up a new horizon of development for the department. Now it can rationally envisage an institutional strength of the highest quality for rapid growth of the department in the very near future. The dedication of the faculty and students as well as the other technical and non-technical staff to guide the department in the path of excellence is the main strength of the EEE department. The excellent working environment as well as relationship between faculty members and students is a great asset of the department. The EEE department is proud of its laboratory facilities, being the first among private universities to have established them. The department admits prospective undergraduate students in two intake of Fall and Spring sessions through admission test where the prerequisite to sit in the admission test is reviewed every year. At a glance, department of EEE at present is as following

Table 1.2: Overview of Department of Electrical and Electronic Engineering

No of current students	723
First year first semester enrollment (Fall 17)	66
No of graduates	929
No of existing faculty members	37
No of faculty member on study leave	07

1.5 Program Educational Objective and Program Learning Outcome

The academic programs in EEE Discipline offer opportunities for students to develop and demonstrate knowledge, understanding capability, professional qualities and research skills in three

major fields of knowledge including Electronics, Power and Communication Engineering. Few years after successful graduation from this program, students are expected to attain following abilities in their early career:

- *PEO-1*: Apply their Engineering knowledge and up-to-date skills to assume positions of techni-cal leadership in performing Professional work in Electrical and Electronic Engineering.
- *PEO-2*: Pursue their career through post-graduate education or professional activity and engage themselves in independent and life-long learning in the broadest context of technological change
- *PEO-3*: Develop Electrical and Electronics Engineering solutions, maintaining high ethical stan-dard and considering design criteria, realistic constraints, economic, environmental and social impact of the solutions
- *PEO-4*: Work either individually or through interdisciplinary teams and communicate effectively using graphic, verbal and written techniques to explain and defend their solutions to tech-nical and non-technical audiences

The mapping between above PEOs and Mission of the Department is given in Appendix-A.2.

Program Outcomes are the expected abilities of the graduate at the time of their graduation. Being an Engineering degree, B.Sc in EEE at UAP has recently adopted 12 Program Outcomes as stipulated by Washington accord. These Program Outcomes are given in Appendix-A.3. Moreover, Appendix A.4 provides the mapping between these POs with already stated PEOs and appendix A.5 gives the more detailed mapping between courses and POs so as to show how those POs will be addressed during 4 year of this program through different courses.

1.6 Brief Summary of the Program Reviewed

The department offers a four year Bachelor of Science degree program in Electrical and Electronic Engineering where each academic year consists of two semesters. The curriculum of the program is a composition of core and optional electrical courses along with basic social science and humanity courses. The design of the offered program is a completion of 152.5 credit hours which includes theory courses, sessional courses and 6 credit thesis in final year. Most of the theory and sessional courses have the prerequisite of course completion from previous semester. Theory courses completion are evaluated in one hour mid-semester and three or two hour semester-final examination for 3 or 2 credit course, respectively along with 30% class assessment. Without 70% class attendance, no one is allowed to sit in the semester-final examination. Simultaneously, the department offers the students for a wide range of extra and co-curricular

activities including IEEE student branch, debating club, project club, sports club, cultural club, field trip, study tour and many more. The grading distribution with marks are included in Table 1.3 and a recent academic calender is shown in Appendix F.1.

Table 1.3: Grading Policy

Numeric Grade	Letter Grade	Grade Point
80% and above	A+	4.00
75% to less than 80%	A	3.75
70% to less than 75%	A-	3.50
65% to less than 70%	B+	3.25
60% to less than 65%	B	3.00
55% to less than 60%	B-	2.75
50% to less than 55%	C+	2.50
45% to less than 50%	C	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00

Chapter 2

Governance

Self-assessment standards regarding *'Governance'*:

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 1-1: Mission and objectives are defined in respect of national relevance in compliance with the legal requirements, QA requirements and external reference standards.

Standard 1-2: The intended learning outcomes (ILOs) need to be defined specifying skills, results and behavior in the students that must be observable, measurable in a given condition.

Standard 1-3: There should be a well-defined graduate profile which will clearly and succinctly describe the competencies in the graduate that the academic program aims to produce.

Standard 1-4: Intended learning outcomes must satisfy the mission and objectives of the program and institution.

Standard 1-5: The University must have an organizational structure and organizational units with defined responsibilities in compliance with the legal framework under which the university is established.

Standard 1-6: The institution/program offering entity must review and ratify the policies and procedures periodically with an objective of further improvement.

Standard 1-7: Code of conduct for the students and code of conduct for staff members and disciplinary rules and regulations are well defined and well communicated.

Standard 1-8: The University must have a well-designed website, which will contain all sorts of information of the university and programs with easy access to the stakeholders.

Standard 1-9: A student handbook containing mission, objectives, graduate profile, academic calendar, rules, regulations and program related information in details.

Standard 1-10: Documentation at all levels of university administration from central to individual faculty members.

Standard 1-11: In order to be responsive to the emerging changes and needs universities and the academic units of the university must have effective institutional leadership and sufficient autonomy.

Standard 1-12: The academic leaders and the faculty members must be judicious and guided by the values of quality assurance.

Governance is an important issue regarding quality assurance in higher education. Governance at university encompasses the organizational structures, legislative framework and processes through which policies and programs are developed, managed and delivered. During the self assessment process, students along with faculties and non-academic staffs were asked about the current state of the governance of the university. This chapter includes the detail analysis description of governing structure and the analysis of the result of the survey.

2.1 Program Management

University of Asia Pacific has a well-defined organizational structure where each organizational unit has a separate set of properly defined duties and responsibilities. The duties and responsibilities of each unit are well structured which ensures the smooth operations of both academic and administrative works [Standard 1-5].

The President of the Republic of Bangladesh is the *chancellor* of the university. The office of the chancellor appoints the *Vice-chancellor* who is the chief executive of the university and responsible to the Syndicate, the Board of Trustees and the Chancellor. The Vice-chancellor is responsible to ensure the provision of the university statutes and regulations are faithfully observed and for this purpose, exercise such powers as may be necessary.

Authorities of the University

The highest authority of the university administration is the *Board of Trustees* which is responsible for creating and implementing appropriate policies based on the UGC and government guidelines. Next in the authority hierarchy is the *Syndicate*, which is the executive body of the university, is constituted by the Board of Trustees in accordance with the provisions of the Private University Act, 1992, and is authorized to make, amend and repeal regulations subject to the university ordinance. It consists of 11 Members of the Foundation and 4 representatives of the University. The Chairman of the Board of Trustees is the Chairman of the UAP Syndicate and the Vice-Chancellor holds the position of Co-Chairman of the Syndicate [Standard 1-5].

The highest academic body of the university is the *Academic Council*. The academic council is consist of the following members: the Vice-Chancellor, the Pro Vice-chancellor, the Deans of Schools, the Heads of the Departments, three professors of other universities and two persons from research bodies to be nominated by the Syndicate, two associate professors and one assistant professor of the university other than the Heads of the Departments to be nominated by the Vice-chancellor. The academic council is subject to the provisions of the university statues and

regulations, have the control and superintendence over and is responsible for the maintenance of the standards of instruction, education and examination within the university and responsible to exercise such powers and perform such other duties as may be conferred upon it by the university statutes.

The university also has a *Finance Committee* which has the authority to provide guidelines for financial activities and to ensure the proper implementation of the guidelines. The members of the finance committee is nominated by the Board of Trustees, the Vice-chancellor and the Treasurer of the university. The finance committee is responsible for supervising and monitoring the income and expenditure of the university. This committee also advise the Syndicate and the Board of Trustees on all matters relating to finance, fund, property and accounts of the university.

UAP has two selection boards. The *Selection Board for Faculty positions* is constituted by Vice-chancellor/ Pro-Vice-chancellor (Chairman), Treasurer, three members of the Foundation, two relevant experts, Dean of the school concerned and/or, departmental head (or equivalent). While the *Selection Board for positions of Officers/ Staff* is constituted by Vice-chancellor/ Pro Vice-chancellor (Chairman), Treasurer, Registrar, one member of the Foundation (nominated by the Syndicate). Appointment of Senior Management positions and periodical determination of their pay and other personnel matters are, however, dealt with by the Board of Trustees.

Officers of the University

The followings are the officers of the university: Chancellor, Vice-chancellor, Pro Vice-chancellor, Treasurer, Registrar, Deans of Schools, Heads of the Department, Controller of the Examinations, Proctor, Directors and such other officers as may be declared by the university or required by the regulations to be officers of the university. After the Vice-chancellor, next in the hierarchy is the *Pro Vice-chancellor* who is appointed by the Vice-chancellor based on the recommendation of the Board of Trustees. The responsibility of pro-vice chancellor is to work as a key member of the university's executive leadership team, playing a central role in the development and implementation of the university's strategic plan. Similarly, the UAP *Treasurer* is also appointed by the Vice-chancellor based on the recommendations of the Board of Trustees. The Treasurer oversight the general financial activities of the university which also includes advising on financial policies of the university. The *Registrar* is the secretary of the Syndicate and the Academic Council and acts as the custodian of the records. Registrar maintains liaison with the deans and heads of the departments regarding various academic and administrative issues and as per the delegation of the Vice-chancellor [Standard 1-5]. A complete diagram of the organizational

structure can be found in Appendix-F.2.

The Schools of Study

UAP has seven schools of study: School of Engineering, School of Sciences, School of Humanities and Social Sciences, School of Business, School of Environmental Sciences and Design, School of Medicine and School of Law. Each school of study consists of a Dean and all the teachers of related departments assigned to that school.

In addition, each department is lead by a Head of the department who is responsible for planning and co-ordination of the work of the department in co-operation with the other members of the department. UAP has a Academic Monitoring and Coordination Committee (AMCC) headed by Vice-chancellor and comprised of Pro Vice-chancellor, Registrar and Heads of Departments/ Deans of Schools. AMCC is responsible for taking primary decisions on all types of academic issues. Moreover, Each school has a *Committee of Courses and Curricula* which is responsible for preparing appropriate courses and contents for each disciplines of study. They are also responsible for observation, evaluation and recommend periodic modification in curriculum, syllabus and policies. The proposed modifications were eventually sent to the UGC for approval after being assessed and approved by AMCC, Academic Council and the Syndicate.

The administrative rules and regulations of all level of university structure are reviewed periodically and necessary changes are approved by the academic council and the syndicate members. Moreover, Department of EEE has a committee comprising four senior most faculty members of the Department that reviews its different policies including academic curriculum and recommends necessary modifications from time to time to comply with program mission and vision. Very recently, this committee reviewed the total syllabus of EEE program, compared it with similar programs in reputed national and international universities and therefore made some significant changes which includes adding or removing courses, change the content of a course to meet the demand of time, shifting a course between semesters or between core and optional and specifying major areas more clearly. This revised syllabus will come into effect after it is approved by the academic council, syndicate and finally the UGC. [Standard 1-6].

Stakeholders' View

During the self assessment process, the stakeholders evaluated different questions regarding different managerial and governance practices of the university and the department. One of the question in the survey was "the entity reviews its policy and procedures periodically for further improvement". Almost 82% of students, 64 % faculty members, 83% alumni and 56% non-

academic staff agree that the university and the program authority review its policy and procedure periodically for further improvement. On the other hand, only 8% of students, 19% faculty members, 5% alumni and 27% non-academic staffs disagree. Figure 2.1 shows the response to the question "The entity reviews its policy and procedures periodically for further improvement". The average score for the question from students, faculty, alumni and non-academics staffs were 4.01, 3.55, 4.04 and 3.33 respectively.

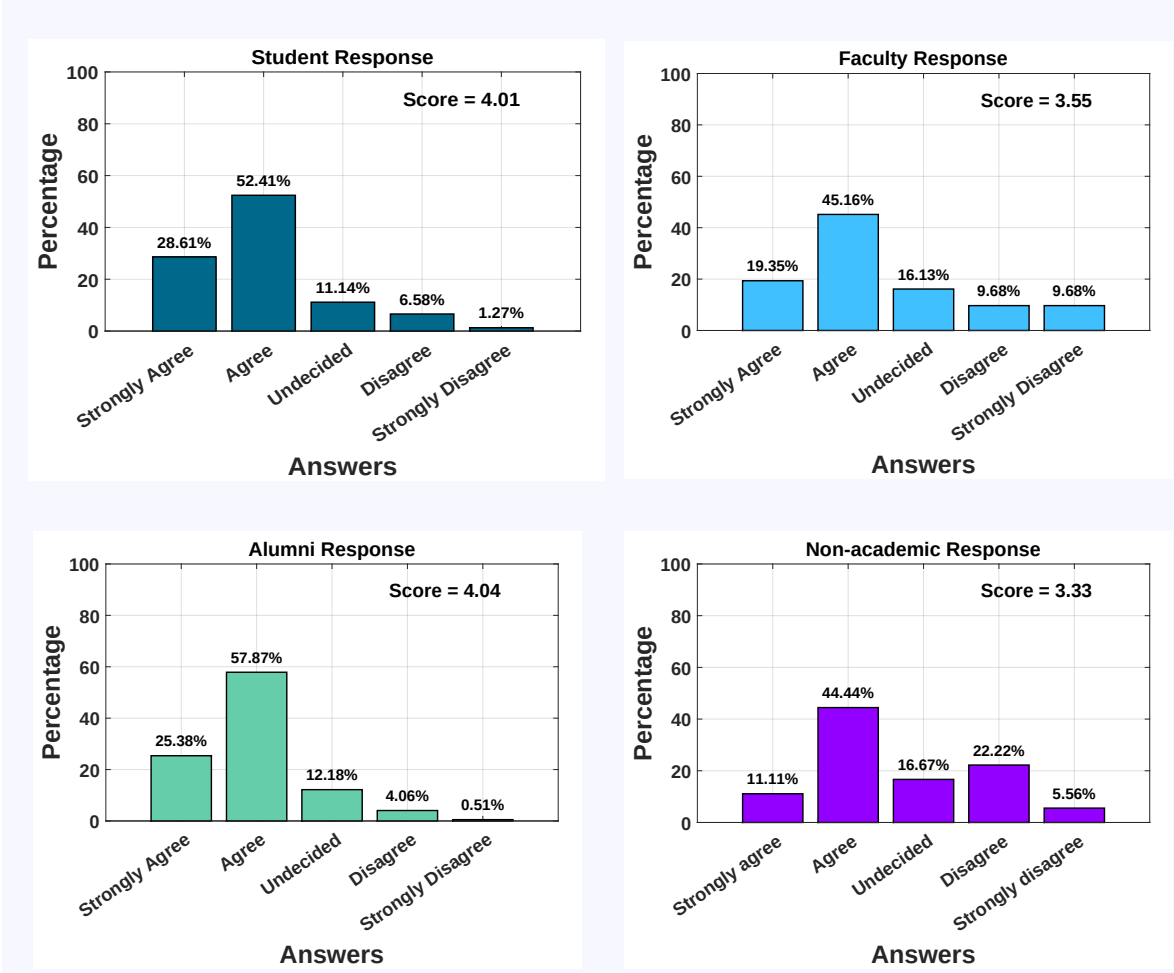

Figure 2.1: Response for the question 'The entity reviews its policy and procedures periodically for further improvement'

Moreover, the students were asked about the fairness and transparency of the academic decisions taken by the university and department authorities. 87% of the students think that the authority is fair and transparent in their decision making. However, 6% students do not agree them while another 6% students could not decide. Similarly, 62% of faculties agree with the statement that decisions taken by the authority are fair and transparent where only 23% faculties disagree. In case of Alumni, almost 93% of them think that the relevant authority is fair and transparent in their decision making and only 6% disagree. Likewise, 73% non-academic staffs

agree with the statement where only 6% disagree; however, a larger number of non-academic staffs, 17%, were undecided. Figure 2.2 shows the response to the question "Academic decisions are taken by the entity with fairness and transparency". The average score for the question from students, faculty, alumni and non-academics staffs were 4.20, 3.70, 4.29 and 3.94 respectively.

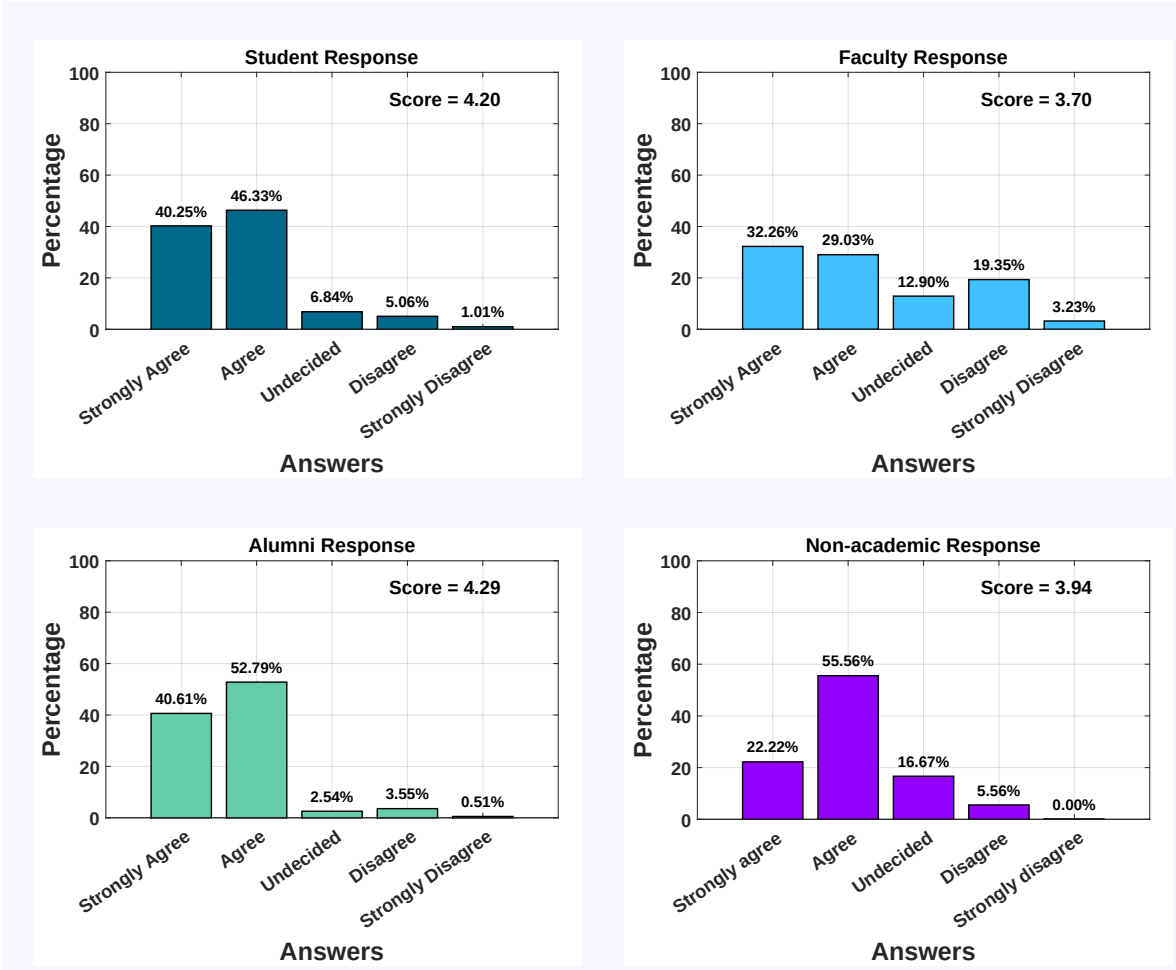

Figure 2.2: Response for the question 'Academic decisions are taken by the entity with fairness and transparency'

The stakeholders were also asked whether the code of conduct for the students and employees are well communicated by the management. According to the survey results, 77% of students agree that the code of conduct of the university was properly conveyed to them where 11% of students disagree. In addition, 71 % of faculty members, 82% of Alumni and 89% non-academics staff agree that the code of conducts for the employees was conveyed effectively. Figure 2.3 shows the response to the question "Codes of conduct for the students and employees are well communicated". The average score for the question from students, faculty, alumni and non-academics staffs were 3.94, 3.68, 4.06 and 4.11 respectively.

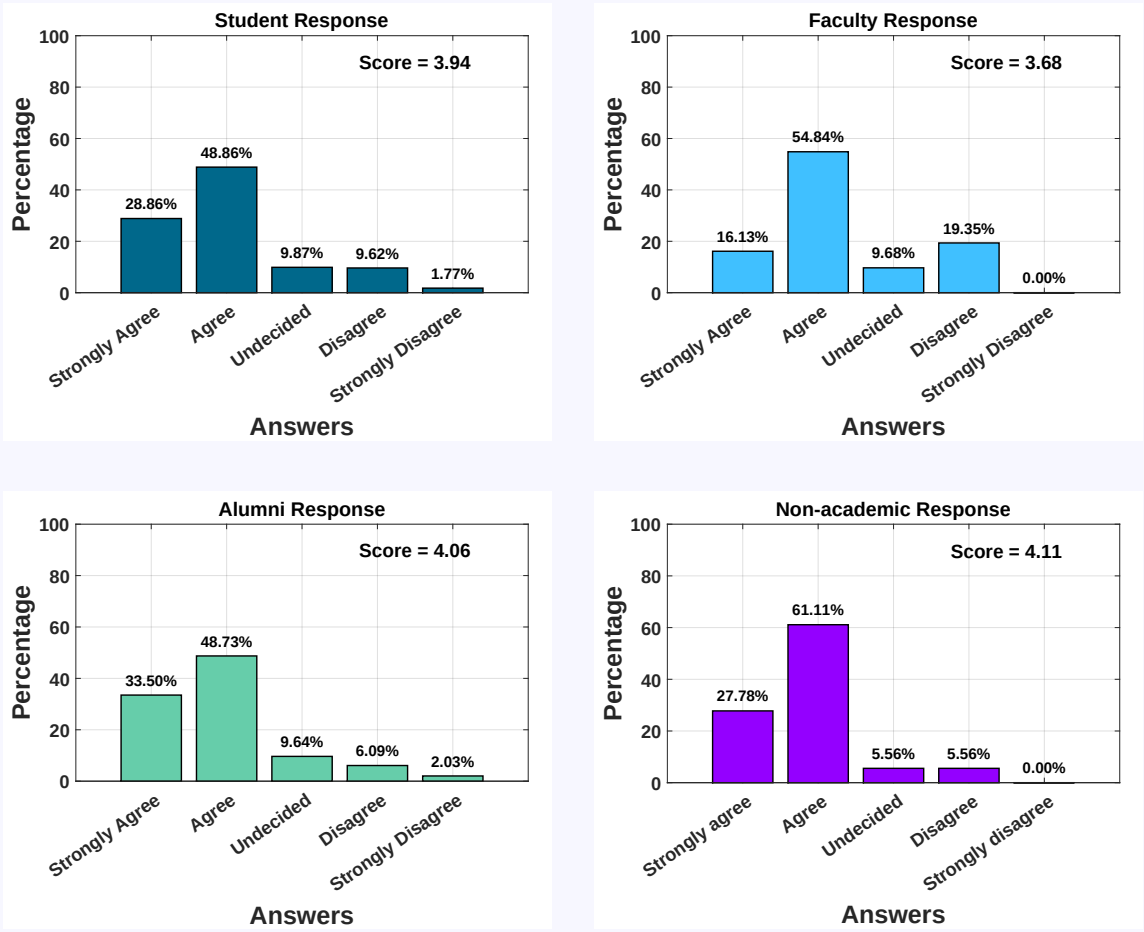

Figure 2.3: Response for the question 'Codes of conduct for the students and employees are well communicated'

During the self-assessment process, the stakeholders expressed their opinion whether the academic calendar is maintained strictly. All most all the students, 97% student think that the academic calendar is maintained strictly. Similarly, 96% faculties, 96% of alumni and 100% of non-academic staff agrees that academic calendar is maintained strictly. Figure 2.4 shows the response to the question "Academic calendars are maintained strictly by the entity". The average score for the question from students, faculty, alumni and non-academics staffs were 4.64, 4.55, 4.43 and 4.83 respectively.

Furthermore, when the stakeholders were asked whether the management publishes the results in compliance with the ordinance or not, the responses from each stakeholder were similar. 91% students, 97% faculties, 92% alumni and 100% of non-academic staff answered positively saying that the results are published timely in compliance with the ordinance. Figure 2.5 shows the response to the question "Results are published timely in compliance with the ordinance."

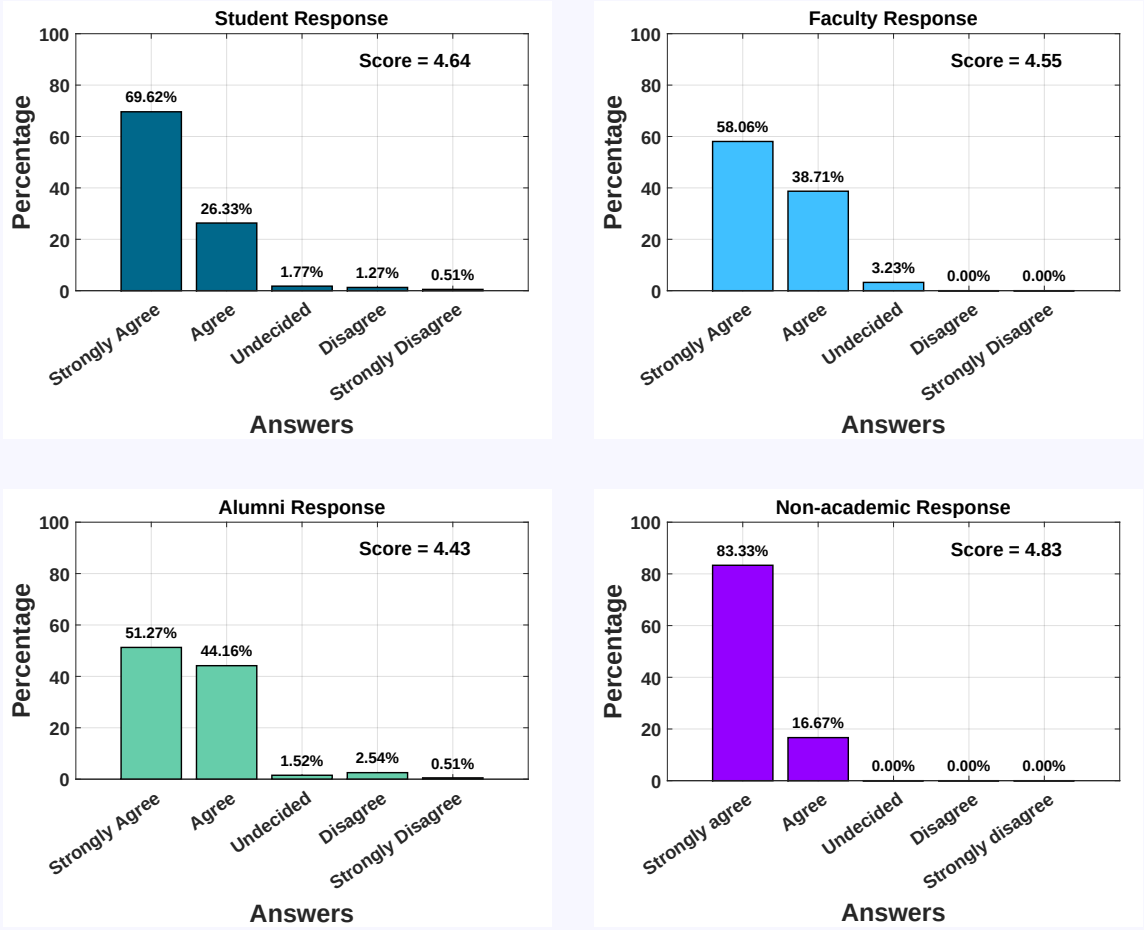

Figure 2.4: Response for the question 'Academic calendars are maintained strictly by the entity'

The average score for the question from students, faculty, alumni and non-academics staffs were 4.38, 4.55, 4.39 and 4.72 respectively.

2.2 Mission, Vision and Objectives

University of Asia Pacific has clearly stated mission, vision and objectives which were devised to ensure the academic, personal and social development of students [Standard 1-1].

University Vision: UAP holds steadfastly its passion to make itself better in fulfilling the young generation's needs and aspirations for a caring and quality education in casting their future career and become a desirable destination for an identity.

University Mission: UAP mission is to offer best possible education to our young generation. Towards the mission, UAP continues to develop a sustained culture of ascending to a top-tier

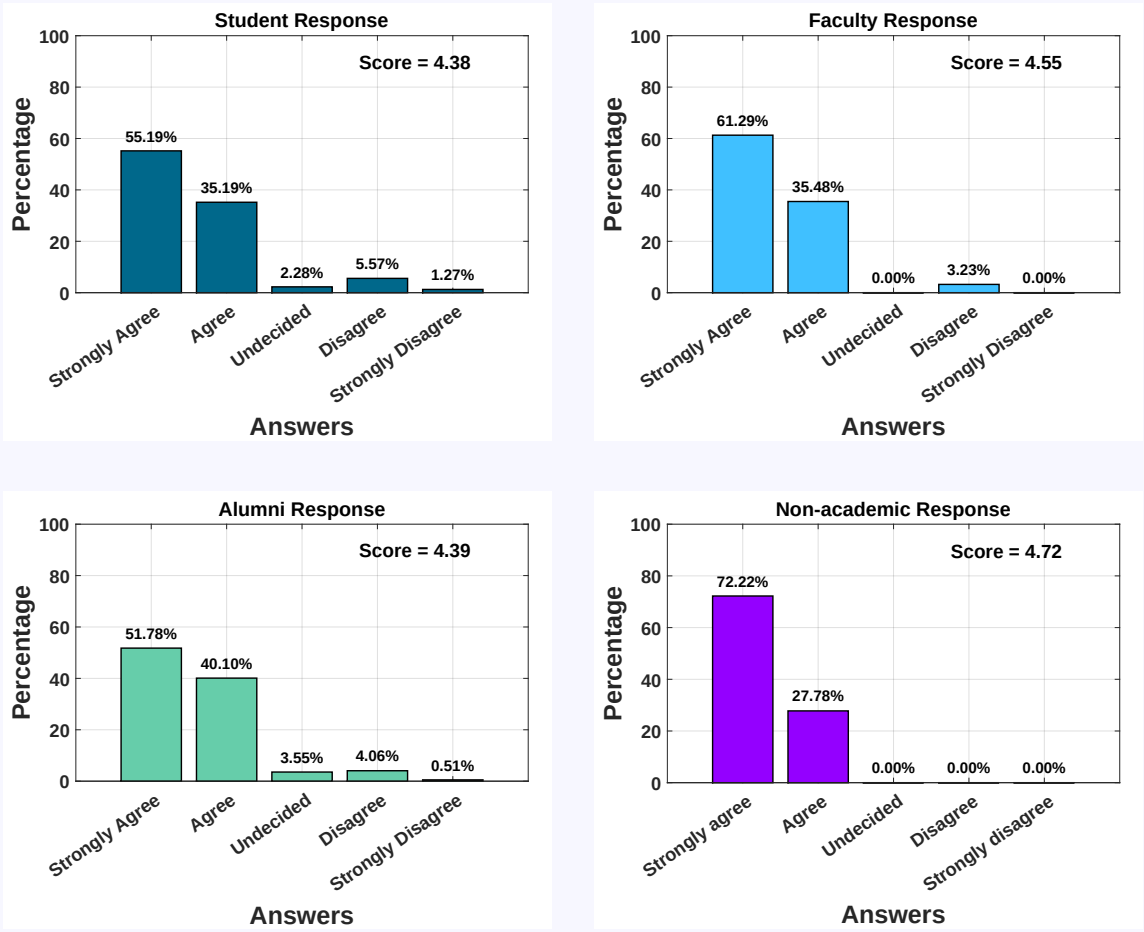

Figure 2.5: Response for the question 'Results are published timely in compliance with the ordinance.'

of vibrant academic environment; maintain and foster well qualified faculty, provide adequate research support for cutting-edge research in-house and in collaboration national and international peers; update curricula to keep up with advancing trend in science and technology, use state-of-the-art best practices in teaching-learning and modern facilities in laboratories and libraries; and provide other supports in aid to students' becoming competent graduates with their potential fully realized and personality well-developed for joining the global forces in making the future of society in a changing world.

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department is to become a major center of higher education and research in Electrical and Electronic Engineering both nationally and internationally. The department is modeled to provide excellent teaching and research facilities for students with teachers of the highest quality, very well-equipped and spacious classrooms with modern instructional tools, library, laboratories and research centers in various branches of Electrical and Electronic Engineering. [Standard 1-3].

Vision of the Department: The vision of Electrical and Electronic Engineering Department at University of Asia Pacific is to reach at an educational excellence in full compliance to the international standards of quality assurance. The Department will produce quality graduates capable of taking the challenges of the rapidly changing field of Electrical and Electronic Engineering as well as capable of making significant contribution to individual and societal empowerment.

Mission of the Department: The mission of the Department of Electrical and Electronic Engineering at University of Asia Pacific is,

- *Mission 1*: to provide quality education at an affordable cost in the areas of Electrical and Electronic engineering.
- *Mission 2*: to enhance the competitiveness of our graduates in the job market and contribute to the economic, scientific and social development of the country.
- *Mission 3*: to maintain a positive academic environment that promotes excellence in learning and research through constructive interaction between students, faculty, industry and community.
- *Mission 4* to utilize the available resources to instill latest technical knowledge and research capabilities that encourage critical thinking, problem solving skills and ethical responsibility as well as develop students' verbal and written communication skills.

Stakeholders' View

In the conducted survey, all the stakeholders - students, faculties, non-academic staff and alumni were asked about their opinion regarding the vision, mission and the objectives of the university and the program. 92% of students agree that university and program has clearly stated vision, mission and objectives. On the other hand, only 6% students think that university vision, mission and objectives are not clearly defined. Similarly, 66% of faculty members and 89% non-academic staff think that university and the program's vision, mission and objectives are clearly defined; however, almost 10% of the faculties and 6% of non-academic staff disagree with them. Figure 2.6 shows the response to the question "vision, mission and objectives of the university

and the program are clear stated." The average score for the question from students, faculty, alumni and non-academics staffs were 4.28, 3.84, 4.30 and 4.61 respectively.

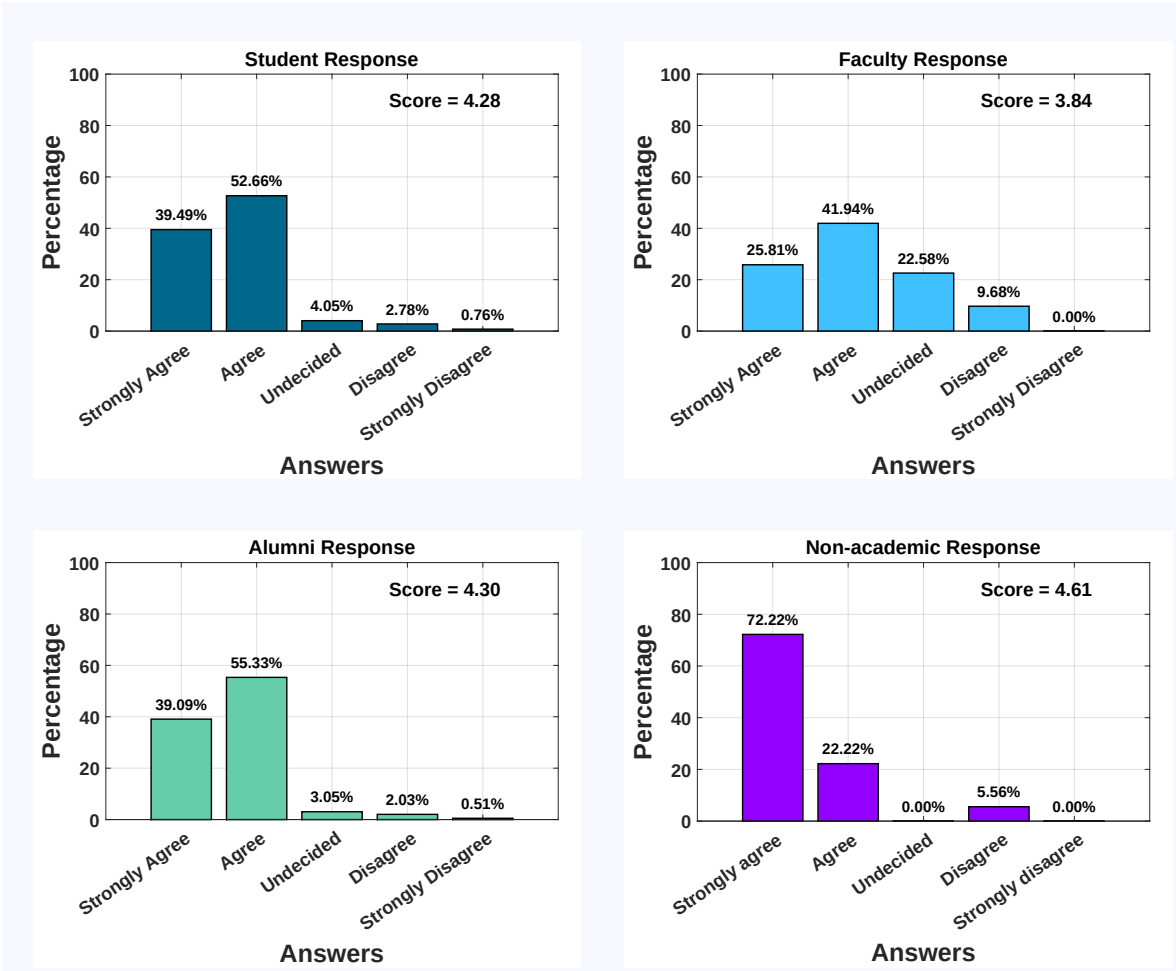


Figure 2.6: Response for the question 'vision, mission and objectives of the university and the program are clear stated.'

With respect to the previous questions, stakeholders were also asked about the availability of infrastructure to fulfill the mission and objectives. More than 80% students answered that the university has enough facility to satisfy its stated mission and objectives while only 6 % disagrees. However, around 10% students were undecided about their opinion. According to the responses of faculty member, 26% of them agree that university has adequate infrastructure to satisfy its mission and objectives. Similarly, 83% alumni and 67% non-academic staff also think that the infrastructure is adequate in accordance with the stated mission and objectives. Figure 2.7 shows the response to the question 'The entity has adequate infrastructures to satisfy its mission and objectives.' The average score for the question from students, faculty, alumni and non-academics staffs were 3.99, 3.10, 4.04 and 3.78 respectively.

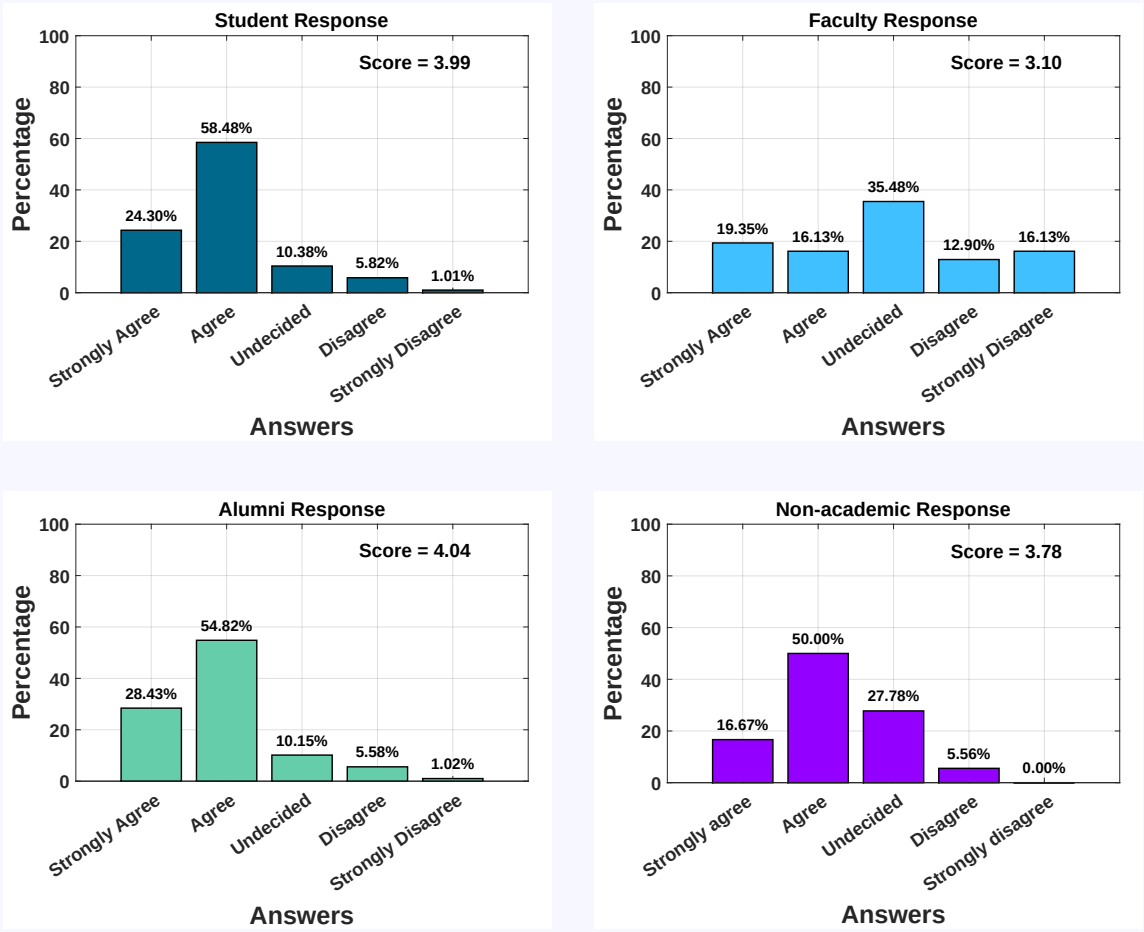


Figure 2.7: Response for the question 'The entity has adequate infrastructures to satisfy its mission and objectives.'

2.3 Academic Documentation

The university provides an information booklet to all the students, faculty members and staff that include most of the important and relevant information regarding governance. This booklet contains necessary information about the organizational structure of the university including the personnel name and designation. This booklet also provides the summary of different programs with the registration process. Moreover, the booklet includes all the necessary information about the infrastructure available to the students and staffs. In addition, it includes the student code of conduct and the punishments in case of any misconduct. This booklet also contains the summary of examination and grading process of the university. Moreover, in addition with the information booklet, each department provides a prospectus which provides necessary information relevant to specific program. In this prospectus the mission and objectives of specific departments are mentioned. The prospectus of department of EEE also contains a sum-

mary of the courses including the course outline, syllabus and reference books. This book also describes different academic rules, registration process, grading system and examination rules for the program [Standard 1-9].

The department of EEE arranges faculty meetings regularly to discuss about the various academics and administration affairs of the department. The agenda of the meeting are sent to the concerned faculties before the meeting and the resolution of the meetings are recorded. Apart from the departmental meetings which involves all the faculties of the department, there are also some other meetings held for different purposes, such as Examination committee meeting, special waiver meeting etc. Resolutions for all the meetings are recorded and preserved properly at the department office.

UAP maintains a commercial automation system to process and store academic records. Examination marks, attendance, grades are stored using that online platform. The department of EEE also keeps a printed record of each examination as backup. Other academic data such as lesson plan, lecture slides etc is stored in Google drive which is maintained by the university domain [Standard 1-10].

University of Asia Pacific also has a Website from where all the necessary information about university mission, vision, and objective are accessible. The university website also contains the information about student code of conducts, examination process, and registration process and advising system. The university is undergoing the process of new modern website which will be more informative.

Stakeholders' View

The stakeholders were asked about whether the entity provides comprehensive guidelines to the students in advance by means of brochure or handbook. According to the survey result, 83% student, 80% faculty, 83% alumni and 96% non-academic staff agrees that the university and the program provide comprehensive guidelines to the students in advanced. However, 7% of students, 3% of faculty member and 7% alumni do not agree with the statement. Figure 2.8 shows the response to the question 'The entity provides comprehensive guidelines to the students in advance by means of a brochure/handbook.' The average score for the question from students, faculty, alumni and non-academics staffs were 4.02, 4.03, 4.03 and 4.67 .

Stakeholders were also asked about the website of the university. According to the response, more than 45% students, 51% faculties, 28% alumni and 11% non-academic staff think that the website is not updated properly and regularly. On the other hand, 48 % students, 39% faculties,

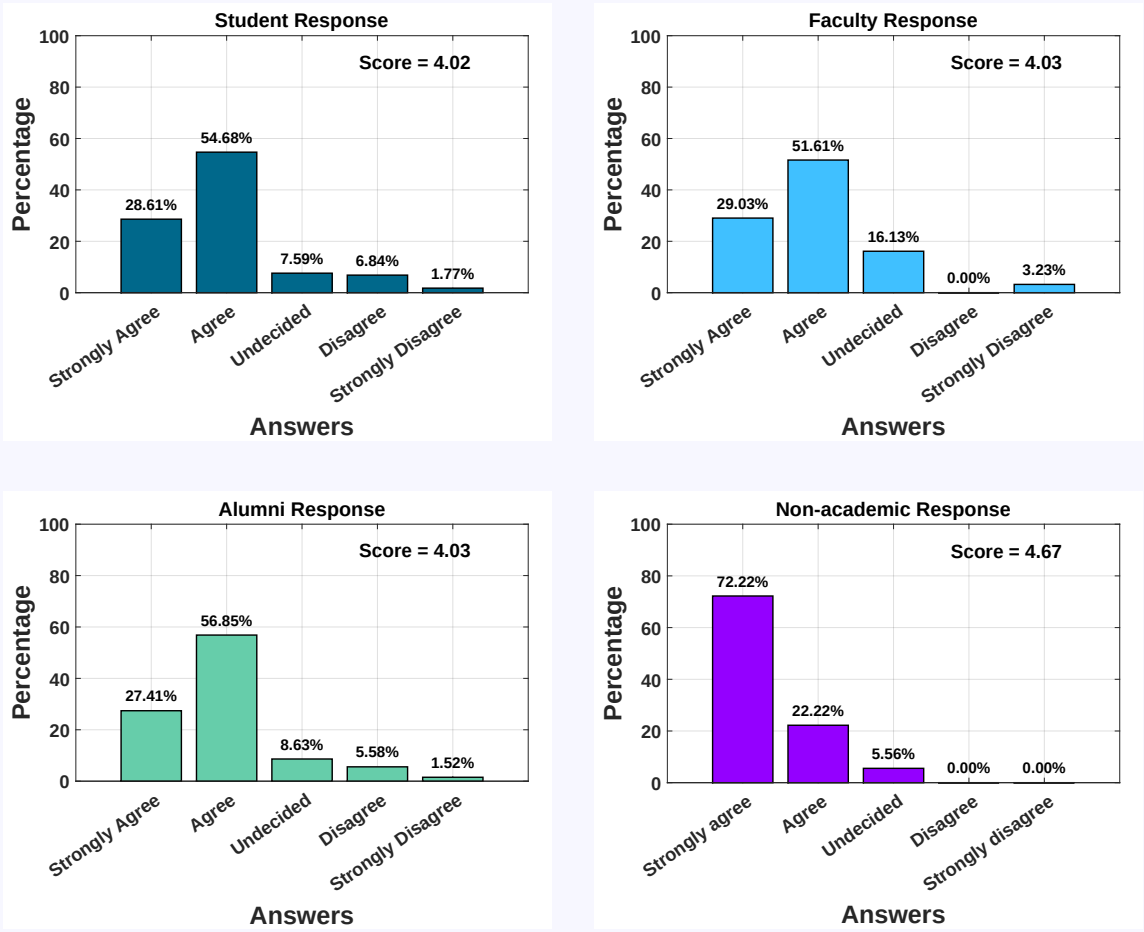


Figure 2.8: Response for the question 'The entity provides comprehensive guidelines to the students in advance by means of a brochure/handbook.'

64% alumni and 89% non-academic staff answered that the websites is updated regularly. Figure 2.9 shows the response to the question 'Website is updated properly.' The average score for the question from students, faculty, alumni and non-academics staffs were 3.03, 2.71, 3.64 and 4.33 respectively.

2.4 Academic Leadership and Autonomy

The University of Asia Pacific has a well structured organizational structure where each part of the governance structure enjoys a reasonable autonomy. The Vice-chancellor is the principal academic and administrative officer of the University and provides academic and administrative leadership. He also plays an integral part in developing and evolving the university's strategy and vision along with playing a leading part in shaping the academic development of the University. The Vice-chancellor is also a member of the Syndicate, the highest executive body of the university that acts with great autonomy. The Syndicate of UAP has complete jurisdiction over

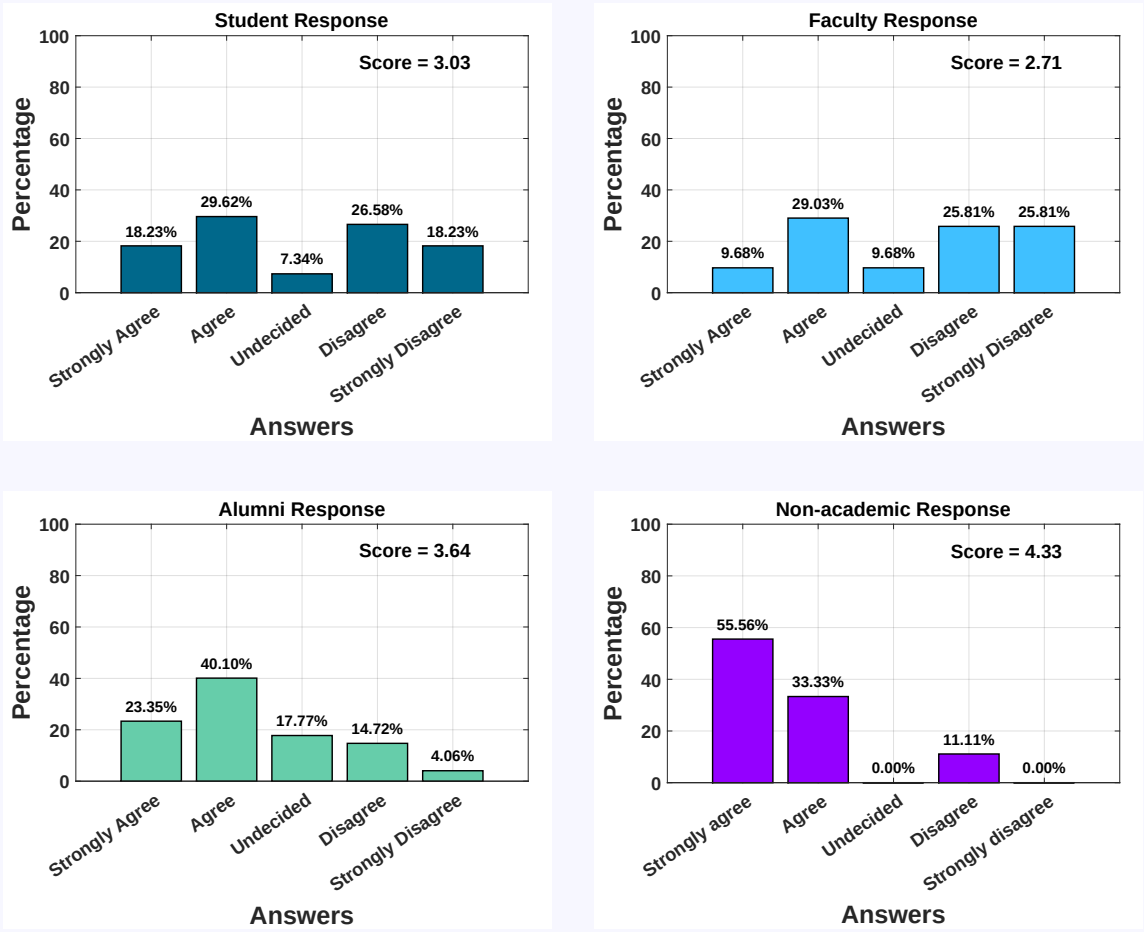


Figure 2.9: Response for the question 'Website is updated properly'

all academic matters which are placed before the Board of Trustees as per necessity.

Similarly, the highest body regarding academic decisions, the *Academic Council*, also exercise a great deal of academic freedom. The council employs regulations prescribing the courses of studies and curricula, proper standards of instruction, research and examination. The committee of courses and studies at each department recommends the curricula and syllabi of courses prepared by each program and advances to the Academic Council for its approval to forward to UGC for permission to engage in offering the course/s. Moreover, each department of the University is lead by the Head of the department and the organization structure of UAP allow them to act with great deal of autonomy in both academic and management issues of the respective departments [Standard 1-11].

2.5 Peer Observation and Feedback Process

UAP organizes a 30 hours long program divided in 10 classes in each semester for improving proficiency of faculty members of UAP. The recently recruited faculty members from each department of UAP participate in this special and comprehensive training session on 'Teaching Pedagogy'. This program addresses different aspects of teaching-learning process through which a faculty member can improve his/her performance as an educator.

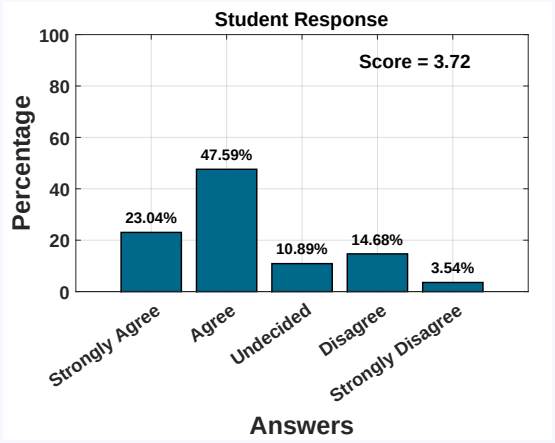
The performance of the faculties are assessed both semester wise and annually based on different criteria. After each semester, the teaching performances of the faculties are evaluated by both the students and head of the department. Other non-teaching performances such as student activities, arranging seminar/workshop, co-curricular activities are assessed by the head of the department annually. Moreover, a final feedback is given to the faculties based on their academic and non academic performances annually by the UAP administration which finally affects the salary of faculties. In UAP, yearly increment of faculty members is dependent on the performance of the individual faculty. Faculty members ranked from Assistant Professor to Professor (Except Lecturer) need to publish at least one paper in a peer reviewed journal or conference proceedings per year to get their respective increment. Apparently, this rule seems to be unfavorable for the faculty members as it truly bars their scheduled yearly increment if they fail to publish a paper within the period. But, indirectly it enhances the overall number of publications by the faculty members as no one likes to be deprived from his due yearly increment.

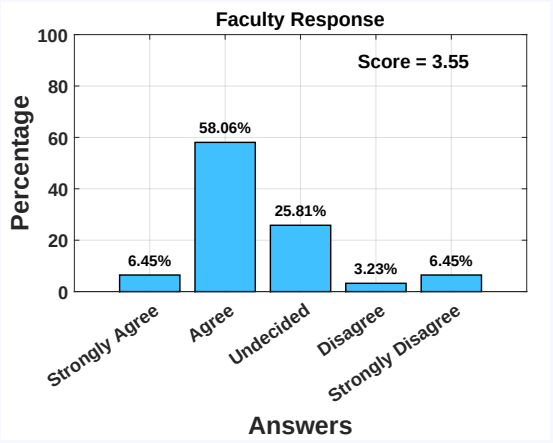
The students' feedback about the teaching performances of faculties is also taken quite seriously and teachers are advised to improve their teaching performance if the score from the student evaluation of a particular faculty is below the combined average score of faculty members. On the other hand, faculties provide their feedback about academic and non-academic aspect of the university and department during the departmental meeting which is arranged on monthly basis.

Stakeholders' View

Regarding the peer observation and feedback process, the student, faculties and alumni were asked the question whether the opinion of students' regarding academic and non-academic matters are addressed properly. According to the result of the survey, almost 70% students think that their opinions are addressed properly while only 17% do not agree with them. Moreover, response from the faculties and alumni also shows the similar results. 65% of faculties and 72% of alumni thinks that the opinions of student are taken into account regarding academic and non-academic matters. Figure 2.10 shows the response for students, faculties and alumni for

the same question. Figure 2.10 shows the response to the question 'Students opinions regarding academic and extra-academic matters are addressed properly.' The average score for the question from students, faculty and alumni were 3.72, 3.55 and 3.84 respectively.





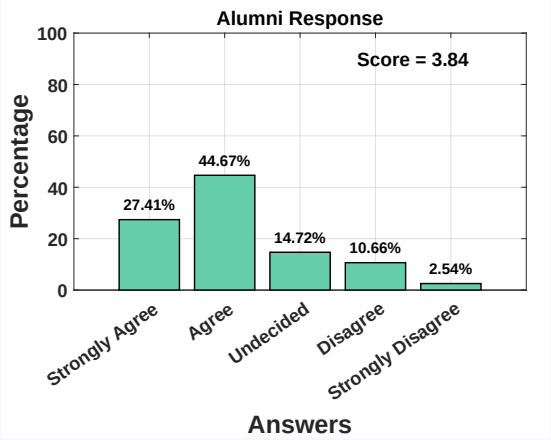


Figure 2.10: Response for the question 'Students' opinion regarding academic and extra-academic matters are addressed properly'

2.6 Internal Quality Assurance Process

Since 2016, UAP is under the umbrella of Higher Education Quality Enhancement Project (HEQEP) jointly funded by World Bank and GOB and implemented through UGC. Institutional Quality Assurance Cell (IQAC) is established in UAP under that project to assure overall quality of education in all Departments of UAP. Self-Assessment Committee of EEE Department is formed under IQAC, UAP in November, 2016 and since then this committee is working in a systematic process for evaluating the various aspects of Department and its program to check whether quality standards are being met. For the purpose of further improvement SA collects information and evidences from the stakeholders like Faculty members, students, Staffs, Alumni and

Employers to review those and identify the weaknesses and areas need further improvement to enhance quality of teaching learning and education [Standard 1-12].

Partly in harmony with the above self-assessment activities, Department also takes a number of initiatives to move its academic program towards Outcome based Education (OBE) Model. A number of workshops have been arranged to introduce OBE and how to redesign the curriculum, question papers, course outlines, evaluation process and the overall teaching-learning mechanism to meet OBE criteria. Rewriting the mission and vision of the Department, setting Program Educational Objective (PEO), Program Outcomes (PO) according to Washington accord for Engineering programs, Course Learning Outcome (CLO) and mapping between all these components are now being addressed though it requires some time to achieve perfection as the process has been started very recently [Standard 1-2].

Stakeholders' View

In the conducted survey, the stakeholders were also asked that whether the intended learning outcomes (ILO) satisfy the stated mission and objectives. In 23% cases students strongly agree with the statement that ILOs defined properly satisfy missions and objectives set by the program while another 55% students agree with the statement. However, 6% students do not agree with the statement where 1% showed strong disagreement. Similarly, according to the opinion of 25% faculty, 6% alumni and 23% non-academic staff, the specified ILOs do not satisfy programs mission and objectives. Figure 2.11 shows the response to the question 'The intended learning outcomes (ILOs) are clearly stated and they satisfy the stated mission and objectives of the entity.' The average score for the question from students, faculty, alumni and non-academics staffs were 3.92, 3.13, 4.05 and 3.50 respectively.

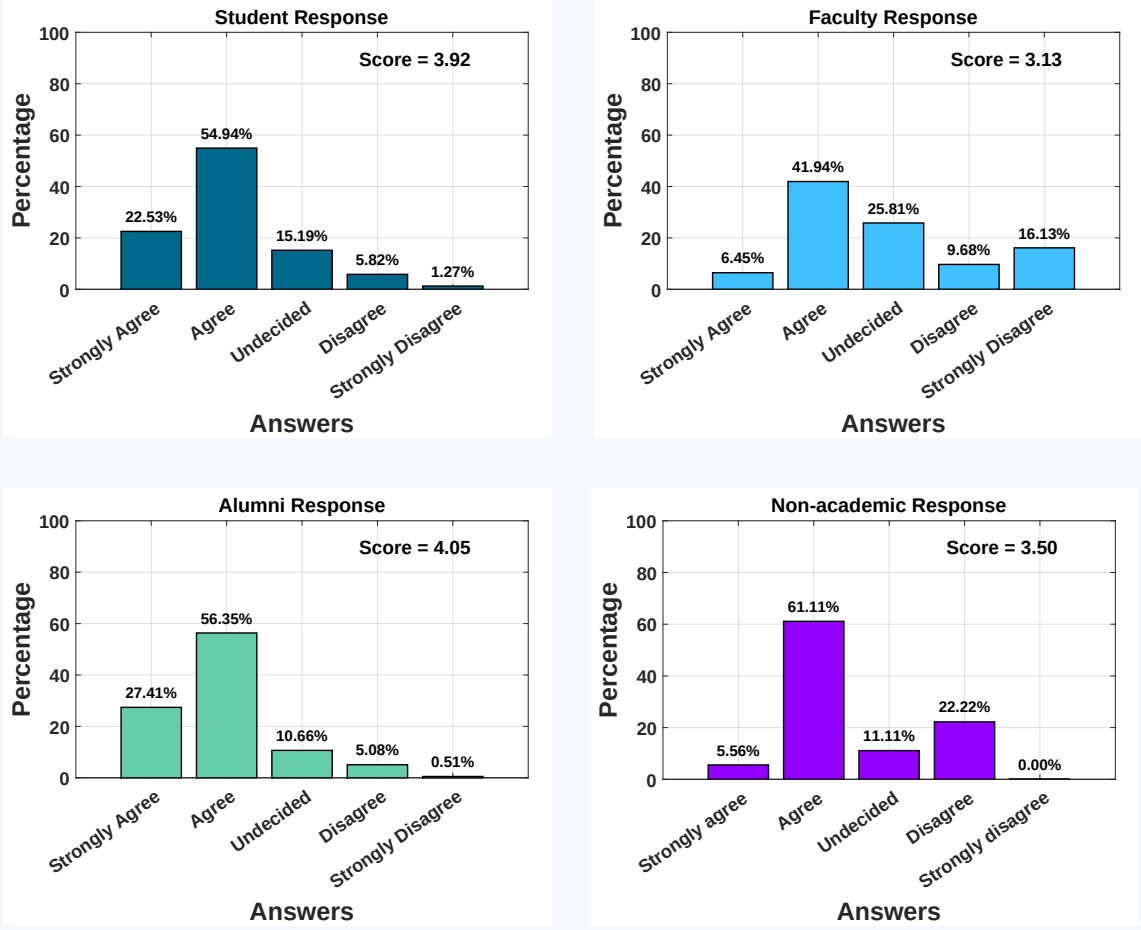
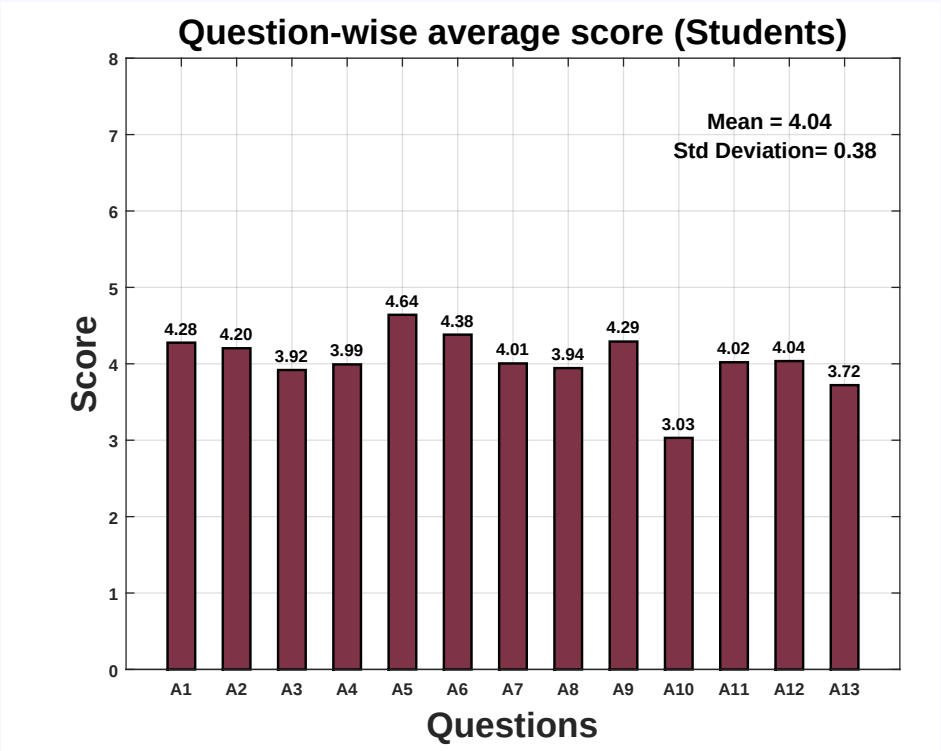
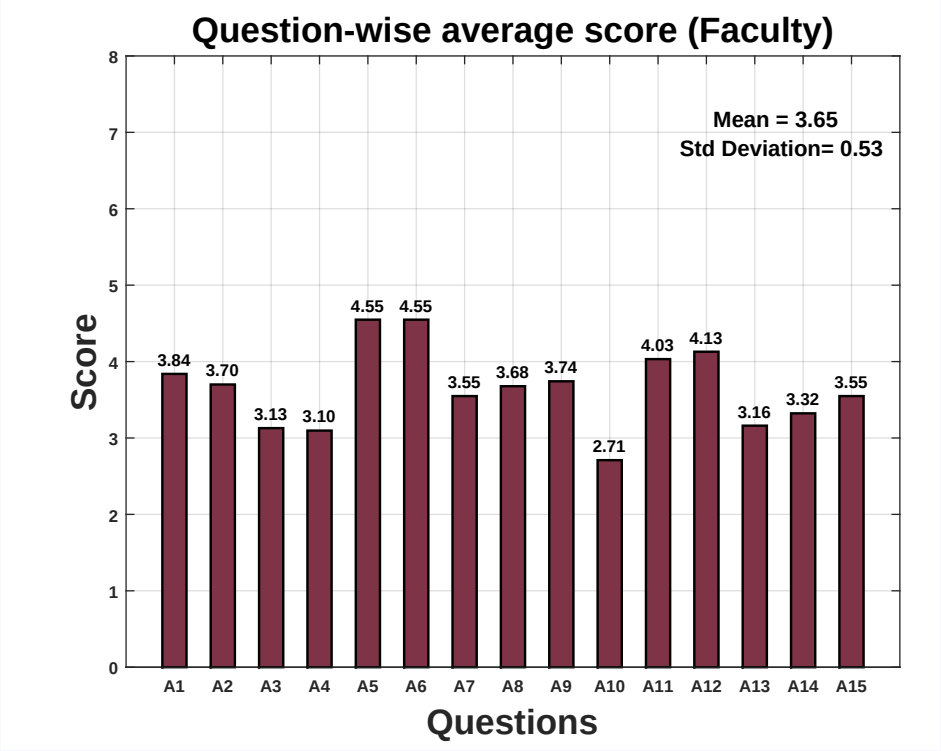


Figure 2.11: Response for the question 'The intended learning outcomes (ILOs) are clearly stated and they satisfy the stated mission and objectives of the entity'



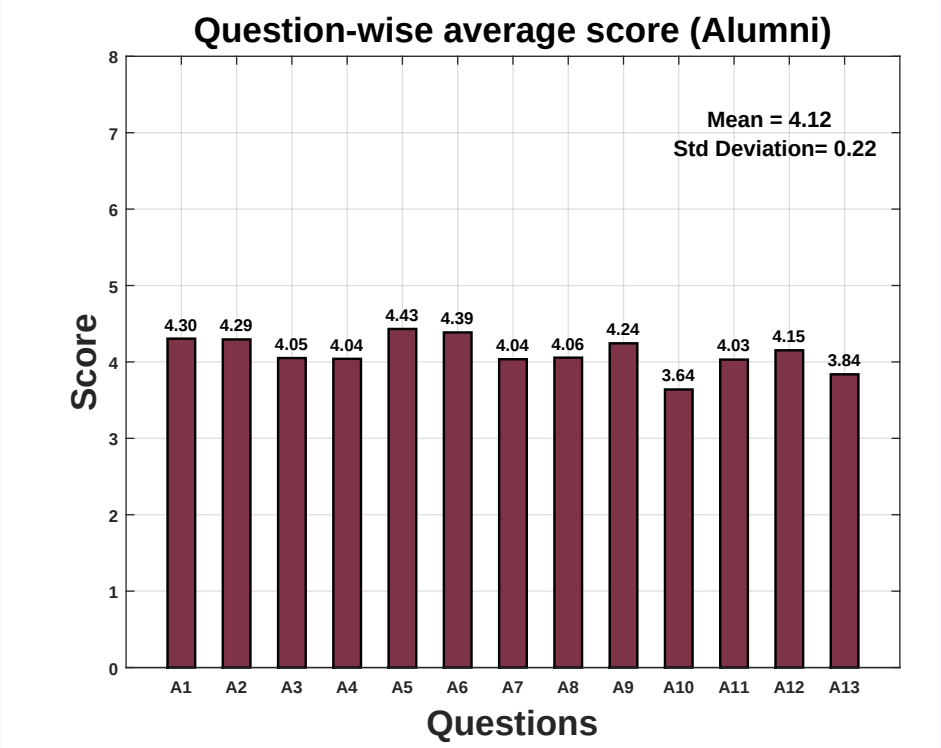
A1	Vision, mission and objectives of the entity are clearly stated
A.2	Academic decisions are taken by the entity with fairness and transparency
A.3	The intended learning outcomes (ILOs) are clearly stated and they satisfy the stated mission and objectives of the entity
A.4	The entity has adequate infrastructures to satisfy its mission and objectives.
A.5	Academic calendars are maintained strictly by the entity
A.6	Results are published timely in compliance with the ordinance
A.7	The entity reviews its policy and procedures periodically for further improvement
A.8	Codes of conduct for the students and employees are well communicated
A.9	Disciplinary rules and regulations are explicitly defined and well circulated
A.10	Website is updated properly
A.11	The entity provides comprehensive guidelines to the students in advance by means of a brochure/handbook
A.12	The entity ensures a conducive learning environment
A.13	Students? opinion regarding academic and extra-academic matters are addressed properly

Figure 2.12: Response summary for Students



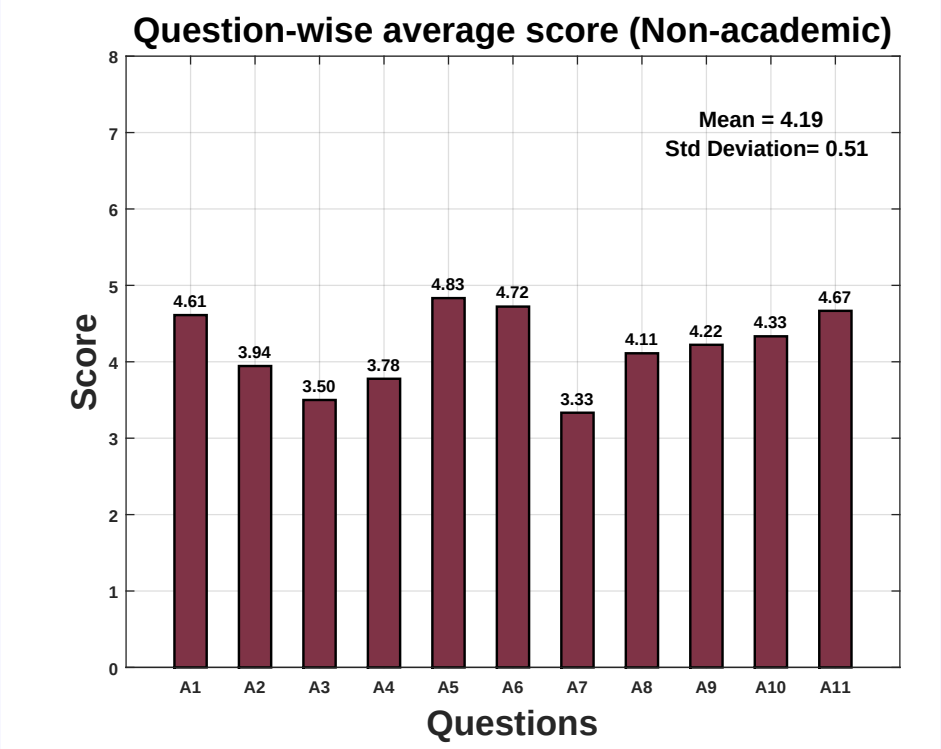
A1	Vision, mission and objectives of the entity are clearly stated
A.2	Academic decisions are taken by the entity with fairness and transparency
A.3	The intended learning outcomes (ILOs) are clearly stated and they satisfy the stated mission and objectives of the entity
A.4	The entity has adequate infrastructures to satisfy its mission and objectives.
A.5	Academic calendars are maintained strictly by the entity
A.6	Results are published timely in compliance with the ordinance
A.7	The entity reviews its policy and procedures periodically for further improvement
A.8	Codes of conduct for the students and employees are well communicated
A.9	Disciplinary rules and regulations are explicitly defined and well circulated
A.10	Website is updated properly
A.11	The entity provides comprehensive guidelines to the students in advance by means of a brochure/handbook
A.12	Documentations (decisions of committees, class attendance registers, questions, answer scripts, marks, examination results, students' progress etc) are maintained properly
A.13	Decision making procedure in the entity is participatory
A.14	The entity ensures a conducive learning environment
A.15	Students' opinion regarding academic and extra-academic matters are addressed properly

Figure 2.13: Response summary for Faculty



A1	Vision, mission and objectives of the entity are clearly stated
A.2	Academic decisions are taken by the entity with fairness and transparency
A.3	The intended learning outcomes (ILOs) are clearly stated and they satisfy the stated mission and objectives of the entity
A.4	The entity has adequate infrastructures to satisfy its mission and objectives.
A.5	Academic calendars are maintained strictly by the entity
A.6	Results are published timely in compliance with the ordinance
A.7	The entity reviews its policy and procedures periodically for further improvement
A.8	Codes of conduct for the students and employees are well communicated
A.9	Disciplinary rules and regulations are explicitly defined and well circulated
A.10	Website is updated properly
A.11	The entity provides comprehensive guidelines to the students in advance by means of a brochure/handbook
A.12	The entity ensures a conducive learning environment
A.13	Students' opinion regarding academic and extra-academic matters are addressed properly

Figure 2.14: Response summary for Alumni



A1	Vision, mission and objectives of the entity are clearly stated
A.2	Academic decisions are taken by the entity with fairness and transparency
A.3	The intended learning outcomes (ILOs) are clearly stated and they satisfy the stated mission and objectives of the entity
A.4	The entity has adequate infrastructures to satisfy its mission and objectives.
A.5	Academic calendars are maintained strictly by the entity
A.6	Results are published timely in compliance with the ordinance
A.7	The entity reviews its policy and procedures periodically for further improvement
A.8	Codes of conduct for the students and employees are well communicated
A.9	Disciplinary rules and regulations are explicitly defined and well circulated
A.10	Website is updated properly
A.11	The entity provides comprehensive guidelines to the students in advance by means of a brochure/handbook

Figure 2.15: Response summary for Non-academic staff

Chapter 3

Curriculum Design and Review

Self-assessment standards regarding *'Curriculum Design and Review'*:

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 2-1: University must have a well-defined procedure to design and review the curriculum of academic programs periodically.

Standard 2-2: There must be a program specific body or committee with representation from the major stakeholders to take care of design and redesign of curriculum.

Standard 2-3: Designed curriculum with valid basis and all changes in the curriculum with specific reasons must be properly documented.

Standard 2-4: Curriculum must be aligned with program objectives, intended learning outcomes through proper skill mapping.

Standard 2-5: Designed curriculum must satisfy the mission and defined graduate profile.

3.1 Need Assessment

Marking the changes in the global education system and to keep up with the ever-changing tools and methods used to deal with new challenges, the department of Electrical and Electronic Engineering at University of Asia Pacific (UAP) keeps a vigilant eye at its curriculum. This is of utmost importance as it will shape the future of the current and prospective Electrical Engineers of the country. A strong up-to-date curriculum ensures an overall better equipped graduates both in the theoretical and practical field of various specializations. The department follows a very systematic process in the design and development of the curriculum.

In addition to the technical courses within the curriculum, Department of EEE has been imparting knowledge in non-major fields such as history, accounting, business ethics, etc. to provide the graduates with competitive edge in their respective fields. The curriculum is also designed to instill its learners with proper ethical and moral values to contribute to societal and community needs.

3.2 Curriculum Design

The Department of Electrical and Electronic Engineering offers a curriculum approved by the University Grants Commission (UGC) to cover all the major specializations of this discipline. The courses are divided in eight semesters for four years. The first two semesters mostly consist of basic courses to provide necessary background for more specialized study in the future within this field. From 2^{nd} years onward, students get familiarized with the core courses of the discipline. In the final year, students are presented options to chose course based on their desired field of specialization. Moreover, the last two semesters, students are also required to complete a thesis on a specific topic of their choice.

Stakeholders' View

In the conducted survey stakeholders were asked specific questions on the curriculum design and review. Figure 3.1 illustrates the percentage distribution of opinion from different stakeholders regarding curriculum design. On this particular aspect, three stakeholders: alumni, students and academic staff/faculties have participated. However, in many questions, the employers' survey are indirectly linked with curriculum like job, knowledge, etc.

Results of the survey show that highest responses from every stakeholder agree that the courses in the curriculum from lower to higher levels are consistently arranged. On the other

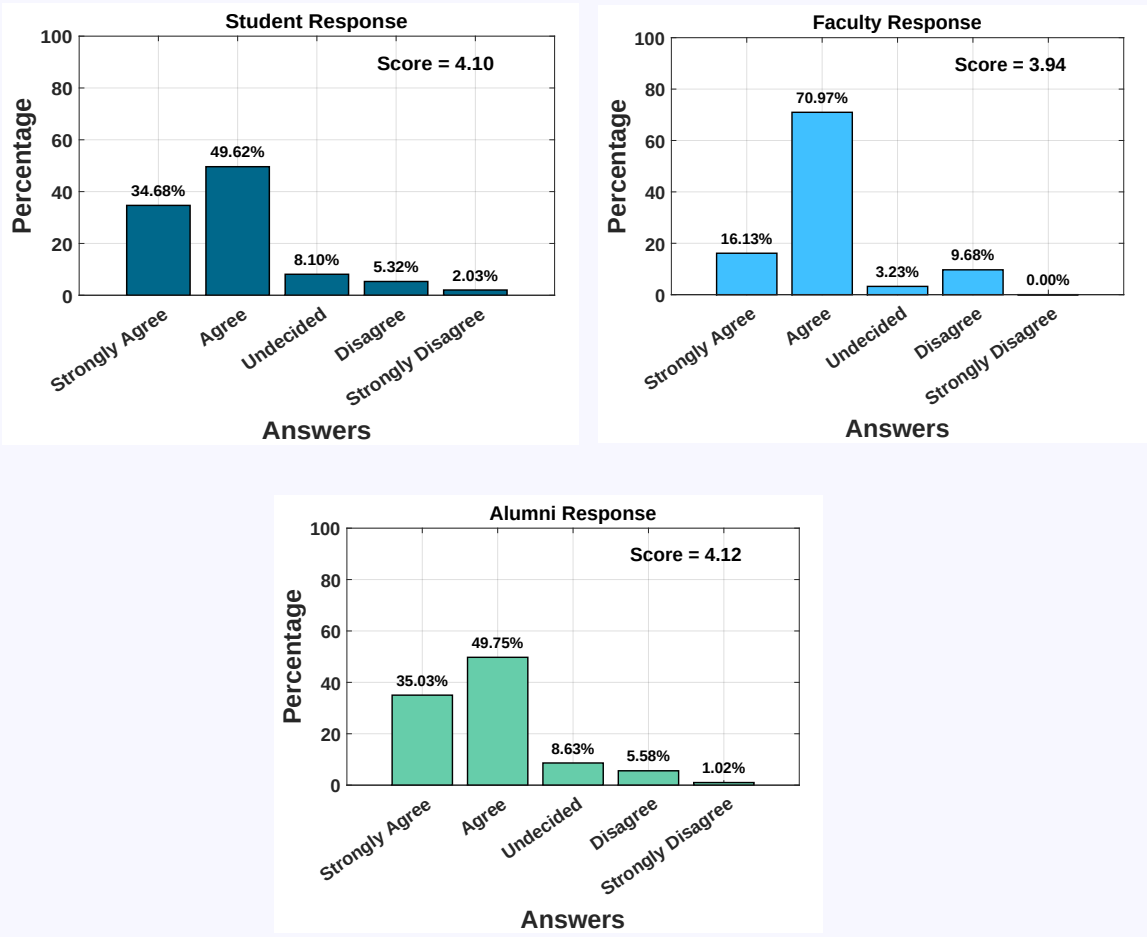


Figure 3.1: Response for the question 'Courses in the curriculum from lower to higher levels are consistently arranged'

hand, a very low percentage of them argued in the opposite direction. In actual scenario, these responses are logical as department's stance regarding the placement of each course in semester due to the fact that students can comprehend and feel what they have to do to acquire the eligibility to enroll into the courses of higher semesters. Department of EEE ensured a fair amount of consistency in designing and maintaining the course structure.

With the increasing population, the society now is more diverse than ever and the technologies are also getting more sophisticated which making the workplace environment increasingly complex. Keeping this into consideration, courses and curricula at UAP are modeled and structured in such a fashion that a student graduated from our outcome focused education can face these challenges with confidence. Furthermore, our curricula defines explicitly the key competencies along with a clear set of principles and values that encourages students for proactive participation in the society and more importantly, it guides to lifelong learning. Thus, the sets

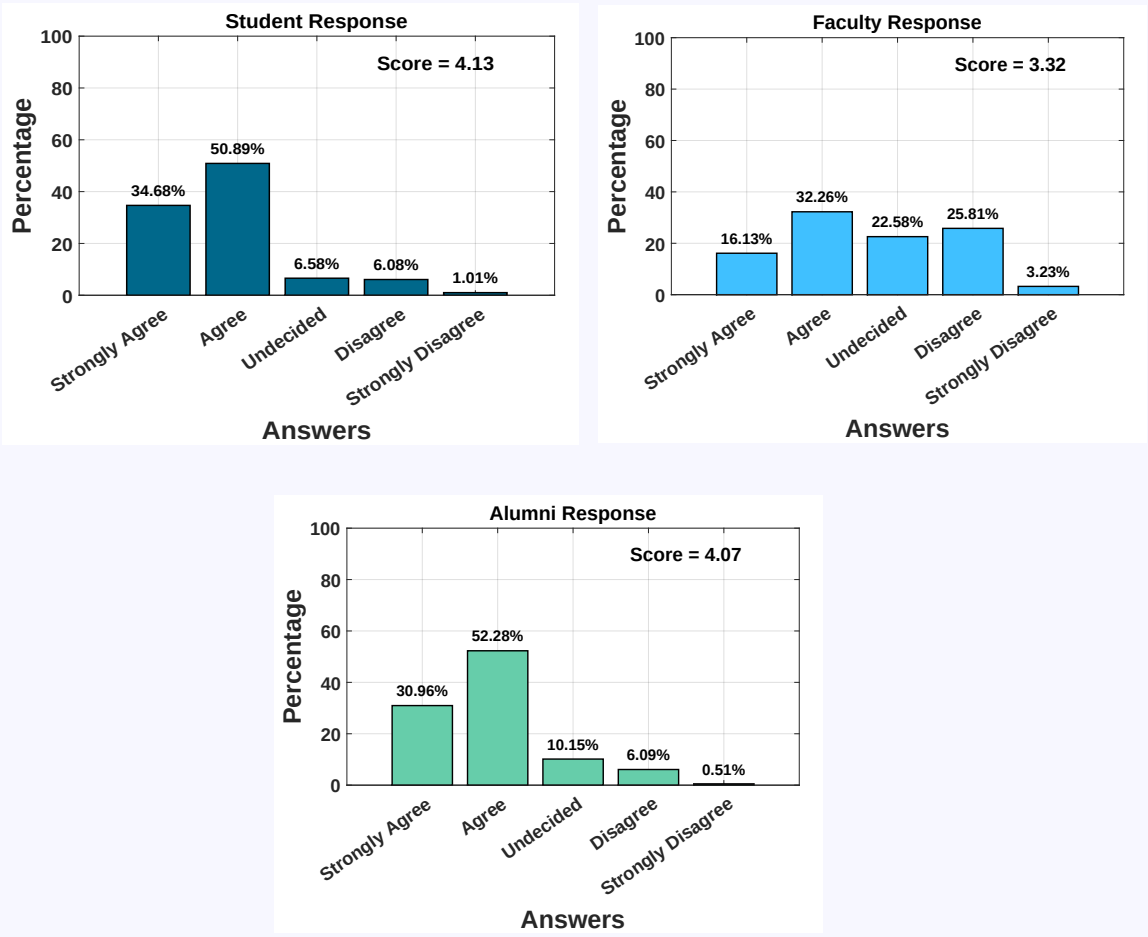


Figure 3.2: Response for the question 'Teaching strategies are clearly stated in the curriculum'

of academic objectives have been carefully revised by teams of academics and faculties to affirm that they are modern, relevant and well defined that provide excellent outcomes for students.

From the Figure 3.2 and Figure 3.3, it is observed that for all the stakeholders, particularly students and alumni response have a score higher than 4.0 which evidently demonstrates that students bear a very optimistic view regarding curriculum assessment and the teaching strategies.

In addition, students, the most important stakeholders, evaluate the respective course teachers at the end of each semester where they explicitly provide views not only regarding their perception of instructors' knowledge & preparation but also on their organization and manifestation of the course materials. At the beginning of the class in each semester students are provided with very clear OBE (Objective Based Education) based course outline and guideline

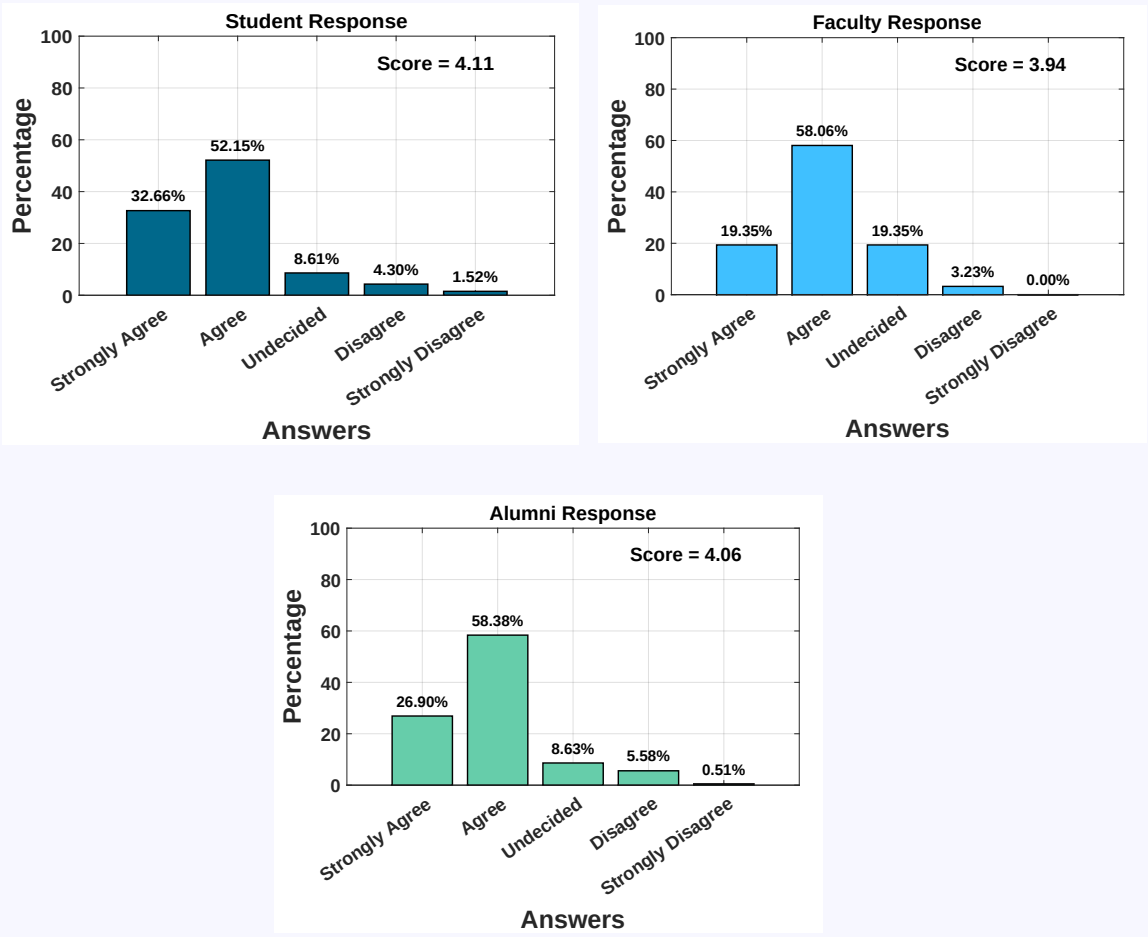


Figure 3.3: Response for the question 'Assessment strategies are explicit in the curriculum'

where student assessment strategies, chapter wise course learning, reference books and course outcomes are explicitly mentioned. After the commencement of class, if teachers feel to give presentation based assignments instead of quizzes to make the course more useful, students are informed well ahead of time so that they can prepare themselves.

3.3 Review Process

At UAP, curriculum review is a dynamic and continuous process guided by university policies and procedures. It involves making decisions about how to effectively address the particular needs, interests, and circumstances of the university's students and community.

UAP has eight different departments, and in each of the department, there is a course curriculum committee. Syllabus is subjected to periodic updates. Feedback from each course

teacher is collected by the respective coordinators which is consolidated and forwarded to the Board of Concerns to be considered at the time of revision. Faculty members are asked to maintain a separate file regarding the changes needs to be made in the next curriculum revision based on their day- to-day experience about the course content & current issues [Standard 2-2].

Feedback from employers and alumni gives direction on the required modifications to be made in the syllabus. Subject experts from both academia and concerned faculties are consulted before revision of syllabus. The Board of committees frame the curriculum and the detailed syllabi of each program, after the discussion among its members. The suggestions of the board will be then taken up by the Academic Monitoring and Coordination Committee (AMCC). The AMCC meets every month and discusses any issues pertaining to academia. If the proposed suggestion regarding the changes are concurred by the members of AMCC, it is then subjected to the further decision from the Academic Council (AC). Once it overcomes the stage of AC, the University Syndicate holds it for further verification. Upon approval of the Syndicate, the proposed revised curriculum is sent to UGC for finalizing and validating the proposed modifications. Through such a rigorous review process, a new and improved version of the syllabus comes into effect [Standard 2-1].

The responsibility of the department is to assess the impact of the proposed changes in the curriculum and consult with those who may be affected. New programs and new courses will often have implications for the use of resources within academic affairs or the availability of support services across the university. Furthermore, programs are often interdependent. Courses from one program may be requirements or electives in other majors, minors and changes to them have impact beyond the originating department.

Under the IQAC guidelines, the department has concentrated its attention to design the entire EEE course curriculum to organize and prepare the course contents of all the courses using the OBE model under the Washington Accord. In connection to that the SA committee arranged several training sessions and number of seminars for the faculty members during last few months to train up and provide directions how to implement these strategies in designing as well as modifying the course contents under OBE model. In each session, the proposed changes made by the declared group members from faculty of EEE was reviewed by SA committee again. It can be added that within this short period of time Department of EEE already demonstrated a significant contribution to update and reshape the whole course contents and course structure to maximize the effectiveness of a course for the students to ensure that it has got utmost relevance to the constantly evolving industry demands.

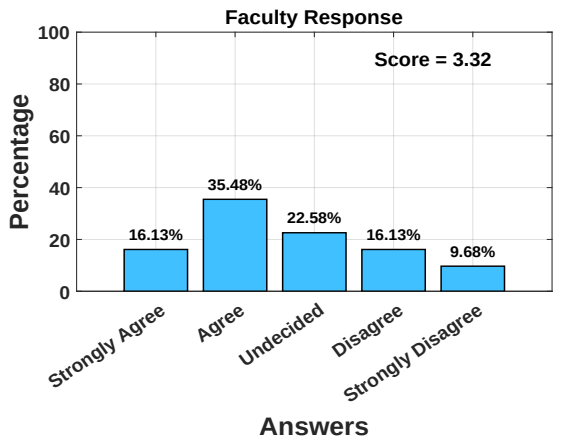


Figure 3.4: Response for the question 'Curriculum is reviewed and updated at regular intervals in compliance with the rules of the Universities'

Stakeholders' View

As seen the response from the faculty of the department in Figure 3.4, more than 35.48% agree that curriculum is reviewed over time to meet the current needs. This response, however, should not be deemed as a negative response either, as the whole process is undergoing through lot of changes in recent times which is little bit difficult to keep pace with. To make an effective teaching-learning process concerned faculty of a course always takes into consideration the updated curriculum and always remain focused to make an alignment with the generic skills to be attained by the students mentioned in the course content which has been highlighted in the overall responses.

Figure 3.5 to 3.6 shows the response regarding the fact whether the stakeholders' (students and teachers) opinions are considered during the review process. The average derived from the faculties' opinions stands below 4.0 whereas the score for the non-academic and alumni responses are below 3.0. This infers that the faculties' opinions differ with other stakeholders.

This difference in opinion may arise due to the recent modifications of EEE course structures. The OBE based model has just found its implementation in the course contents and it requires a good amount of time to get the maximum benefits from this model. Therefore, students are a bit confused on how welcoming this would be but gradually they are adapting with it. Those who already have graduated they did not get this opportunity and as a matter of fact, their opinion in our course modifications is less focused. In recent times, the views and inputs are being valued accordingly so that future graduates enjoy the fruition of the process [Standard 2-3].

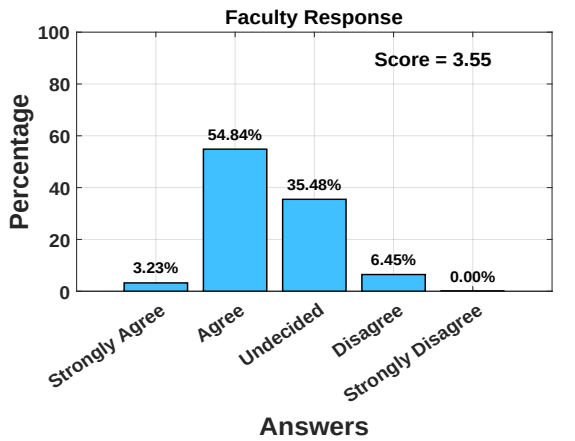


Figure 3.5: Response for the question 'Opinions from the relevant stakeholders (students and teachers) are duly considered during review of the curriculum'

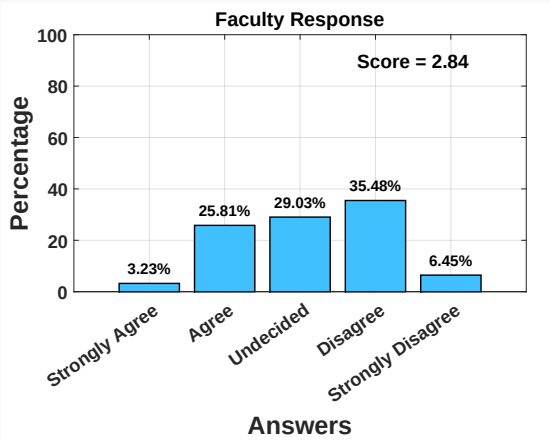


Figure 3.6: Response for the question 'Opinions from the relevant stakeholders (employers and alumni) are duly considered during review of the curriculum'

3.4 Curriculum and Skill Mapping

Each course outline consists of a certain number of a Program Outcomes (POs) which is expected to be achieved by the students by their time of graduation. To define and implement these POs number of sessions and seminars has taken place in our department where faculties received training from the experts on their respective field. After having participated in consecutive training, seminars and intensive discussions, all faculties have given their consent to follow the 12 POs. The twelve POs along with their definitions/explanations are presented in Table

Table 3.1: Program Outcomes with Their Definitions/Explanations

No.	Program Outcomes	Definitions/Explanations
1	Engineering Knowledge	Breadth and depth of education and type of knowledge, both theoretical and practical
2	Problem Analysis	Complexity of analysis
3	Design/ development of solutions	Breadth and uniqueness of engineering problems i.e. the extent to which problems are original and to which solutions have previously been identified or codified
4	Investigation	Breadth and depth of investigation and experimentation
5	Modern Tool Usage	Level of understanding of the appropriateness of the tool
6	The Engineer and Society	Level of knowledge and responsibility
7	Environment and Sustainability	Type of solutions.
8	Ethics	Understanding and level of practice
9	Individual and Team work	Role in and diversity of team
10	Communication	Level of communication according to type of activities performed
11	Project Management and Finance	Level of management requiredfor differing types of activity
12	Lifelong learning	Preparation for and depth of Continuing learning.

3.1[Standard 2-4]. More information regarding Programs outcomes can be found in Appendix A.

The learning outcomes (LOs) of each course is related only to a certain number of POs mentioned in the table. Finally, the aggregate of all of the LOs stated in the course outline would capture all the POs as specified in the revised curriculum.

Stakeholders' View

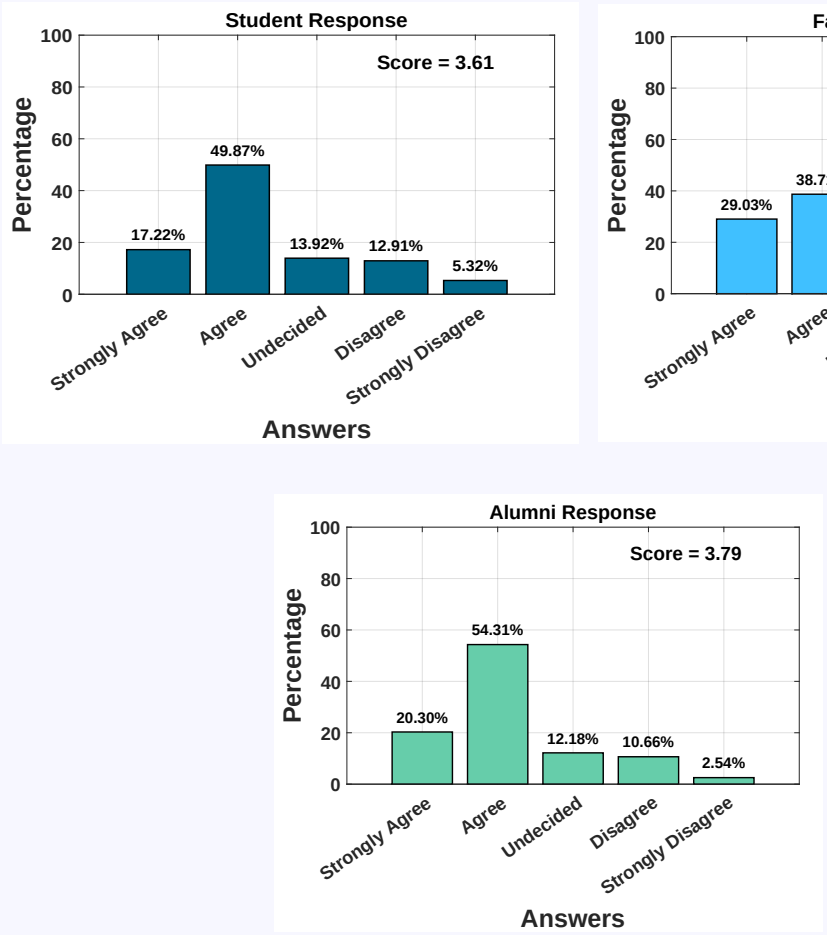


Figure 3.7: Response for the question 'Curriculum load is optimum and exerts no pressure'

From the Figure 3.7 it is observed that the overall responses from all the stakeholder averaged slightly below 4. The score of 3.79 and 3.61 of the alumni and the current students respectively implies the fact that the curriculum load seems to be 'heavy' for them. The inconsistencies in the few current course structure have also contributed to the feelings of the stakeholders on this particular issue.

The response for the statement that 'curriculum addresses the program objectives and program learning outcomes' were surveyed to only the faculty members, no other stakeholders are included here and results are provided in Figure 3.8. From this figure, it is found that the mean faculty response does not hold the optimistic view with the above statement. It can be noted that students are well informed with regard to the program objectives and program Outcomes of course outline and every teacher tries hard and gives their utmost sincere efforts to make these

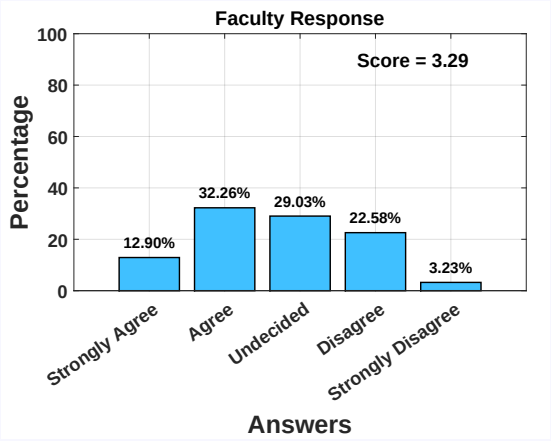


Figure 3.8: Response for the question 'Curriculum addresses the program objectives and program learning outcomes'

concepts clear and comprehensive for the students. However, these deviations are still there because sometimes it becomes very difficult to maintain the standard of teaching and to complete the whole syllabus as described in course outlines. Furthermore, there is a large variation in the quality of students who are not capable of coping up the volume of syllabus as well as with the standard of contents of course material. To make the contents more comprehensive for them sometimes teachers has to go in very details of topic and that's what make it difficult to complete the syllabus. Students of good qualities are supposed to carry out self-study to have deeper learning which actually make the class more dynamic and it also helps the teacher indirectly to remain focused in the class enabling them cover up more syllabus and become more focused on the students. Due to lacking of of these qualities of students, program objectives and Program Outcomes vary quite largely.

In line with meeting the objectives of mission statement and generic skill, much modifications have been proposed in the revised curriculum. As to carrying out impactful research, both faculties and students remain greatly involved through 'faculty quality improvement circle' (FQIC) activities.

3.5 Gaps in Curriculum

Syllabus is framed incorporating cognitive learning levels with technical and professional concepts. There is a wise saying by August Swanson, "changing a curriculum is more difficult than moving a graveyard." Our Department with a view to keeping its stance for being center for

academic excellence where young innovative and inventive minds with novel ideas, our Department can interact to evolve new technologies relevant in meeting the societal need. It tries to keep pace with changing curriculum dynamically to enable its students eligible and fit for competition. By fostering human values and all-round personality development in the student community, they not only excel as practitioners and entrepreneurs, but also become useful and responsible members of the industry and society that they serve or lead.

In the existing curriculum, there are a number of gaps that have been identified during the review process of course outline of individual courses and hence there were some lapses in achieving the Program Outcome. Several recommendations has come out from the current students, alumni, faculty members and employers.

A brief enumeration on this issue is highlighted below.

1. Although professional and technical software are being employed at different levels of course curriculum, however these have not been incorporated in course curriculum and therefore students face difficulties after graduations to acquire technical competence.

2. Lack of collaboration with other departments with regards to integrating curriculum to bring about the diversity in research developments.

3. Few core courses in certain specializations should be developed in such a way so as to prepare students for higher studies home and abroad. This would make them more competent for research funds.

4. Guest speakers of different expertise may be invited to conduct certain topics for different courses which will enlighten as well as motivate the students about the practical aspects of that said field.

5. Even though optional courses like Power system protection are being offered in the department, however laboratory equipment with switch gears have not been installed due to lack of space allocation. This gap has been already addressed within the departmental committee and have been proposed to concerned authority.

6. Interpersonal communication skills of the students may be enhanced by increasing the numbers of presentations throughout the four year period of study.

Stakeholders' View

The statement of "Relevance of Curriculum in Achieving Day-one Skill " has been surveyed from alumni and faculty members and the average response is approximately '3.6' and it does

not reflect a complete negative response either . This situation arises because of the gap in implementation of course objective in real life scenario. Since our curriculum is just started following the OBE model and it is now expected that in coming years, graduates will find the effectiveness of the curriculum to face the challenges in practical field with a higher confidence level.

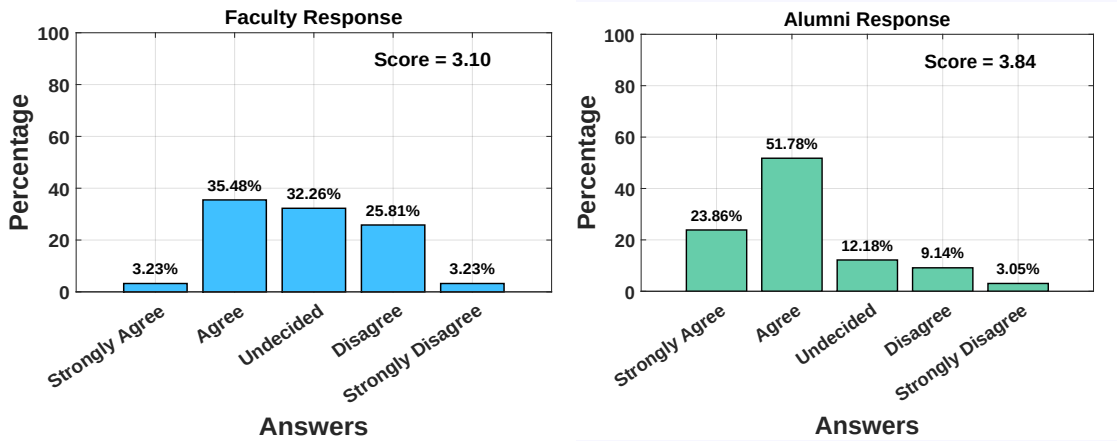
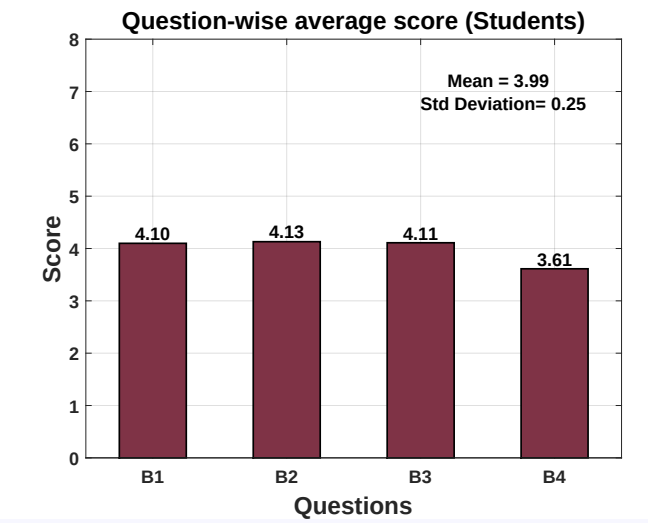
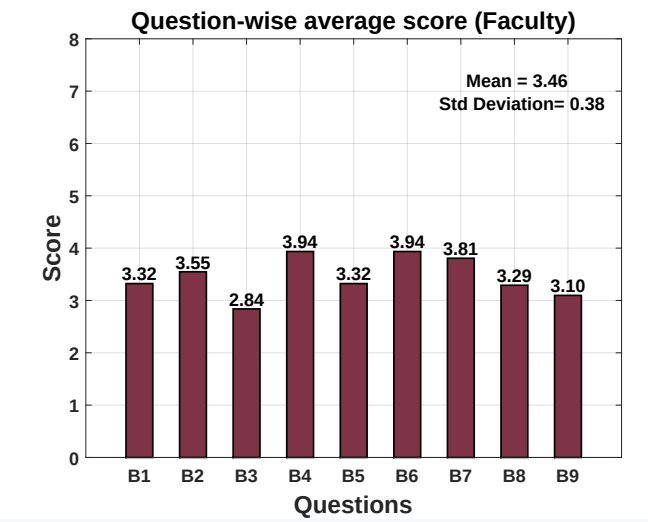


Figure 3.9: Response for the question 'The curriculum is effective in achieving day-one skill (which happens right at the beginning in the first day at job place)'



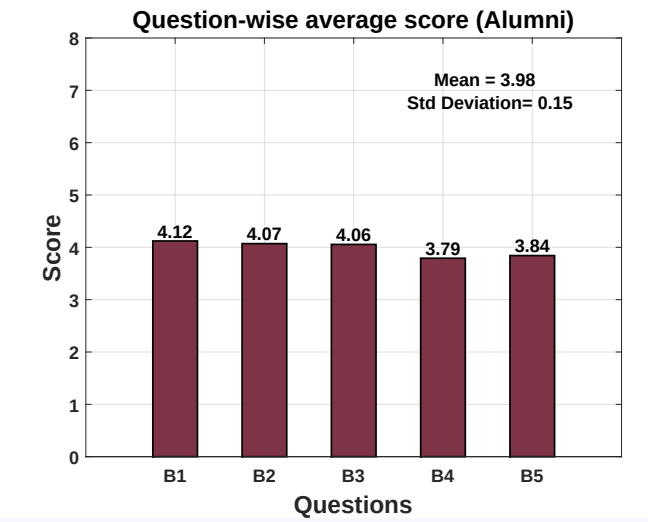
B1	Courses in the curriculum from lower to higher levels are consistently arranged
B2	Teaching strategies are clearly stated in the curriculum
B3	Assessment strategies are explicit in the curriculum
B4	Curriculum load is optimum and exerts no pressure

Figure 3.10: Response summary for Students



B1	Curriculum is reviewed and updated at regular intervals in compliance with the rules of the universities
B2	Opinions from the relevant stakeholders (students and teachers) are duly considered during review of the curriculum
B3	Opinions from the relevant stakeholders (employers and alumni) are duly considered during review of the curriculum
B4	Courses in the curriculum from lower to higher levels are consistently arranged
B5	Teaching strategies are clearly stated in the curriculum
B6	Assessment strategies are explicit in the curriculum
B7	Curriculum load is optimum and exerts no pressure
B8	Curriculum addresses the program objectives and program learning outcomes
B9	The curriculum is effective in achieving day-one skill (which happens right at the beginning in the first day at job place)

Figure 3.11: Response summary for Faculty



B1	Courses in the curriculum from lower to higher levels are consistently arranged
B2	Teaching strategies are clearly stated in the curriculum
B3	Assessment strategies are explicit in the curriculum
B4	Curriculum load is optimum and exerts no pressure
B5	The curriculum is effective in achieving day-one skill (which happens right at the beginning in the first day at job place)

Figure 3.12: Response summary for Alumni

Chapter 4

Student Admission, Progress and Achievements

Self-assessment standards regarding *'Student admission, Progress and Achievements'*:

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 3-1: Entry Requirements must be well defined, measurable and communicable to the potential candidates for admission.

Standard 3-2: Entry requirements must reflect the level of qualifications required to afford the academic load of a particular program and match with the nature of the discipline.

Standard 3-3: The admission process ensures fair treatment to all applicants with transparent and good practices and do not discriminate applicants in any way.

Standard 3-4: Everyone has confidence in the integrity of the admissions process.

Standard 3-5: The admission process is competent enough to differentiate between apparently equally qualified and non-qualified candidates for courses with competitive entry.

Standard 3-6: The admissions procedure enables the institution to select students who have potentials and are able to complete the academic program successfully.

Standard 3-7: The quality assurance system of universities should be in place to assure that levels of students' achievements and progress are monitored and recorded duly for the use of reference points, evaluation of achievement and meaningful academic guidance and counseling.

Standard 3-8: The quality assurance system of university maintains a record of the total number of years, semester, and credits, for each student, to be eligible for certification and other credentials.

Standard 3-9: Student progress and achievement monitoring system is comprehensive enough to identify the students, who are showing poor progress, who are not achieving and who are at risk.

Students are one of the major stakeholders of an academic institution. Reputation of the institution depends on the quality of students and their achievements. Academic institution like university pays huge attention and effort during student's intake. Transparent and fair admission procedure ensure quality students enrollment. After enrollment students regular progress and achievement has recorded by the university.

4.1 Entry Qualification

Each institute/university has its own type of requirements for enrollment of students. The fundamental aim is to select the capable students who will be able to complete the program successfully. Ultimately, the results of the last public examinations and admission test has considered for final enrollment in a program. [Standard 3-1].

Admission office of UAP is responsible for primary contact with the prospective candidates. Usually two types of communication media has used one is print media and another one is online communication. Admission office circulates ad in the national Bangla and English newspaper to make attention the candidates and the ad also available on the website of UAP (http://www.uap-bd.edu) from where candidates can get the application form for admission into various undergraduate programs. After that, the students and guardians contact with the admission office to know about the different programs, set of rules and tuition fees. To enroll in the Department of Electrical and Electronic Engineering (EEE) the prospective candidates must sit meet entry qualifications and then have to sit for a written test followed by a viva-voce.

Department of EEE has the following requirements that suggests the prospective candidates will be able to successfully complete the program-

- Candidates scoring total GPA of 7.50 in SSC and HSC or equivalent public examinations can sit for the admission test in EEE program.
- Candidates scoring total GPA of 7.00 in SSC in Science and Diploma can sit for the admission test in EEE program.
- Candidates with 'O' level and 'A' level in Science background subject to equivalent to SSC and HSC of total GPA of 7.50 are eligible to apply for admission.
- Candidates having a break of study of not more than two years may apply for admission.

- Department of EEE ensures the competency level of the eligible candidates by conducting admission test in two phases. In the first phase, students sit for written test and in the second phase, the selected candidates from the written test face viva-voce.

A survey was carried out among the students, alumni and faculty members regarding student admission, progress and achievements. The survey result is given in the Figure 4.1.

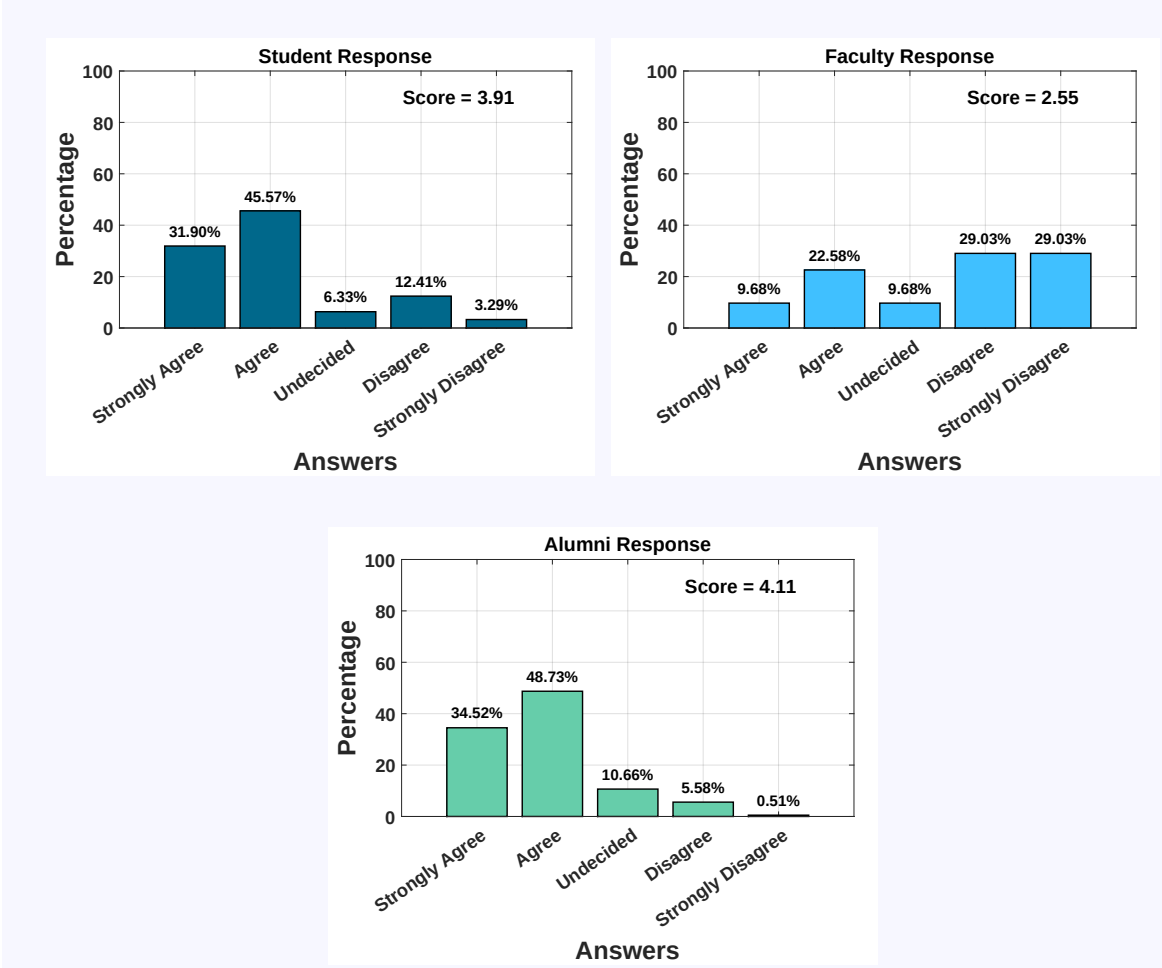


Figure 4.1: Response for the question 'Admission policy ensures entry of quality students '

From the survey data, it can be interpreted that students and alumni were agreed with the statement but responses from the faculty members suggests that there needs to be improvement during students intake. Admission office is responsible for primary communication among the prospective candidates for admission into EEE program [Standard 3-2].

- Admission Office of UAP circulates admission test notice where the date of admission test has mentioned. The prospective students then may come to admission office or may visit

UAP website to know the details like the sample question, marks distribution and any other set of procedure.

- GPA 7.50 is the prerequisite for appearing in the admission test for the department of EEE. However, this entry qualification does not give assurance to enroll the desired program.
- The prospective candidates for EEE program has to sit for one and half hour written exam which is designed in such a way by which candidates' mathematics, physics, English and quantitative are evaluated.

Table 4.1: Subject wise weight allocation in EEE Admission Test

Subjects	Marks
Physics	30%
Mathematics	40%
English	20%
Aptitude	10%
Total	100%

In the survey, the three stakeholders namely students, alumni and faculty members have asked a question 'Commitment among students is observed to ensure desired progress and achievement' and the scores received were 3.87, 4.06 and 3.13. The results manifest that the alumni scores highest with their response while the students responded next to them. Score from the faculty members suggests that there need to be some improvements in this sector.

4.2 Admission Procedure

To enroll in the Department of EEE for B. Sc. in EEE the students must come from Science background of secondary and higher secondary education/diploma. Therefore, to maintain quality in education, Department of EEE develops an admission procedure which aims to select the best candidates.

University of Asia Pacific runs on bi-semester system namely Spring semester and Fall semester. Therefore, Department of EEE enrolls students in these two semesters only. Usually the admission test date has published as an ad in the national daily Bangla and English newspapers and in the website. To know details about admission procedure and collect any addition material like brochure, sample question prospective candidates/guardians may visit admission office at UAP or website. Usually the prospective candidates have to fill up an online form by providing necessary information to sit for admission test. The selected candidates must submit attested

Figure 4.2: Response for the question 'Commitment among students is observed to ensure desired progress and achievement '

photocopies of their educational certificates and other documents before admission to any program at UAP. [Standard 3-3].

Results of SSC, HSC examinations and marks obtained in admission test are assessed for selecting prospective candidates. In the Department of EEE, marks distribution for admission into EEE program is as follows:

- 40% marks from SSC exam
- 60% marks from HSC exam and
- 100% marks from Admission test

In the EEE program, admission test is carried out by the admission test committee in following two phases:

- Written Test
- Viva Voce

To conduct the written test, the committee divides the total tasks into several duties like question setting, question moderating, seat planning, invigilating, script checking, scrutinizing, preparing result. Responsibility of result publishing has done by Admission office. They publish the list of students qualified for next phase i.e. viva voce.

Head of the department of EEE as chair has formed three member viva board for the candidates who pass the written test. The admission committee is responsible for preparing the final result and pursue it to the admission office who finally publish the list of selected candidates for enrollment in the EEE program. Figure 4.3 shows the survey opinions from three stakeholders in this regard.

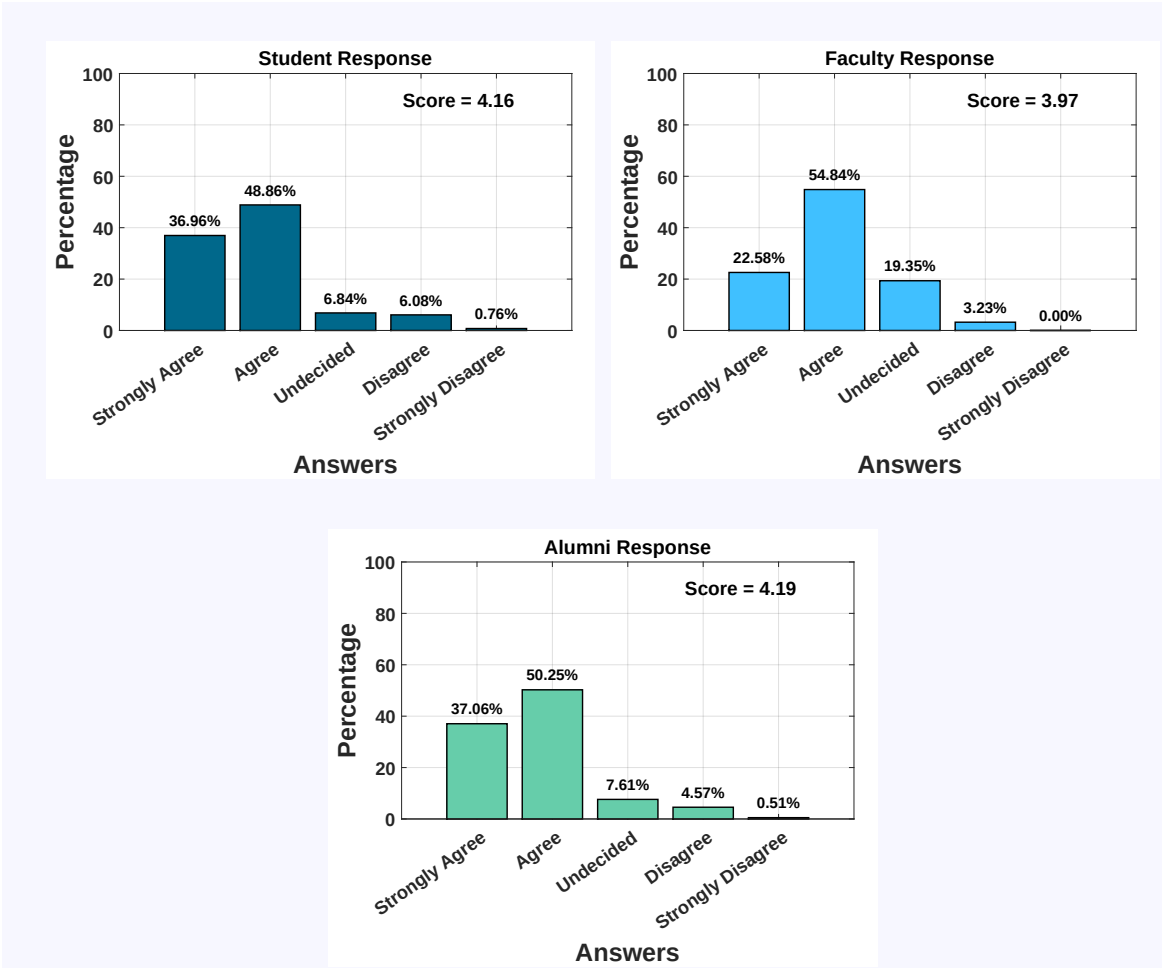


Figure 4.3: Response for the question 'Admission procedure is quite fair '

In the above Figure 4.3 groups namely students, alumni and faculty members have been asked the question 'Admission procedure is quite fair'. Students and Alumni scored 4.16 and 4.19 respectively whereas the faculty members were 3.97 in favor of the same. Due to maintain transparency and fairness in all phases of admission test the three stakeholders responded redundantly.

Department of EEE ensures transparency and fairness in completing the admission process although. As mentioned earlier, a separate committee named "admission test committee" is formed to conduct the admission process. [Standard 3-4, 3-5]. Prospective candidates HSC and SSC result is the primary factor for preliminary selection for admission test. To select deserving candidates a set of questions has set by maintaining standard. For two students getting same marks in the written test, the viva voce board select the deserving candidate.

EEE Program includes Science subjects and advanced courses for specialization in the field of Electrical and Electronic Engineering. Therefore, during question setting the admission test committee focuses on evaluating the candidates' Physics, Mathematics, Quantitative aptitude and English proficiency. Questions on Physics and Mathematics test the students' capability in Science. Whereas questions on quantitative aptitude test candidates' intellectual skill. Questions of English and Essay writing part measure English proficiency and correct grammatical usage and writing skills. [Standard 3-6].

4.3 Progress and Achievements

After completing the all admission procedure the finally selected for admission into the B. Sc. in EEE program in the Department of EEE. After enrollment students' progress has monitored continuously. An academic advisor has assigned from the department for a group of students to monitor, guide and advice the students throughout their bachelor study at UAP. In each semester advisors must meet their advisees trice. At the beginning of the semester for course registration purpose the students consult with their advisor. The second meeting between them conduct on 8th week of the semester and the last meeting held on 12th week of the semester. By these meeting the advisors consult with their advisees about their progress, problems and any further assistance from the department as well as the university. Advisors accompanied several duties like- selection of courses for course registration, financial assistance for poor but meritorious students and extra guidance for week students. At the beginning of each semester advisor provides his/her consulting time to advisees for discussing these issues.

In addition, the academic results and achievements has recorded by the office of the exam controller. Currently an automation software is using to store the students results and all academic information. [Standard 3-7].

UAP has a waiver policy which is given on the basis of Semester GPA. The following table mentions tuition fee waiver (only for merit-based) based on GPA achieved on each semester.

Table 4.2: Tuition Fee Waiver based on GPA

GPA	Percentage of Tuition Fee Waiver
3.50 - 3.74	25%
3.75 – 3.89	50%
3.90 – 3.99	75%
4.00	100%

In addition, to the merit based waiver policy top 3% students study in EEE program has offered 100% tuition waiver based on semester results. Also 10% - 100% Vice Chancellor's special tuition fee waiver is offered to poor but meritorious students.

Three groups of respondents namely students, alumni and faculty members were involved in this survey and the survey result is given in the Figure 4.4 and Figure 4.5.

In response to the question "Students' progresses are regularly recorded and monitored" the Figure 4.4 shows the responses from three stakeholders students, alumni and faculty members. The figure shows that, the alumni scores highest regarding the process of recording and monitoring the student' progress whereas the existing students were closed to alumni response.

In response to another question, 'Teachers provide regular feedback to the students about their progress' Figure 4.5 shows the results. The scores imply that both of the stakeholders responded positively and nearly to each other although the alumni remained highest in terms of their opinion. The scores indicates that regular feedback from the faculties will definitely improve the students progress.

While enrollment each student academic records has stored in the automation software. The software stores academic result and other academic information of each and every student. The faculties' gives input the required information into the software. Usually office of the exam controller is responsible to store and provide students records and provide when needed. Issuance of Mark sheets and certificates is one of the major responsibility of the office of the exam con-

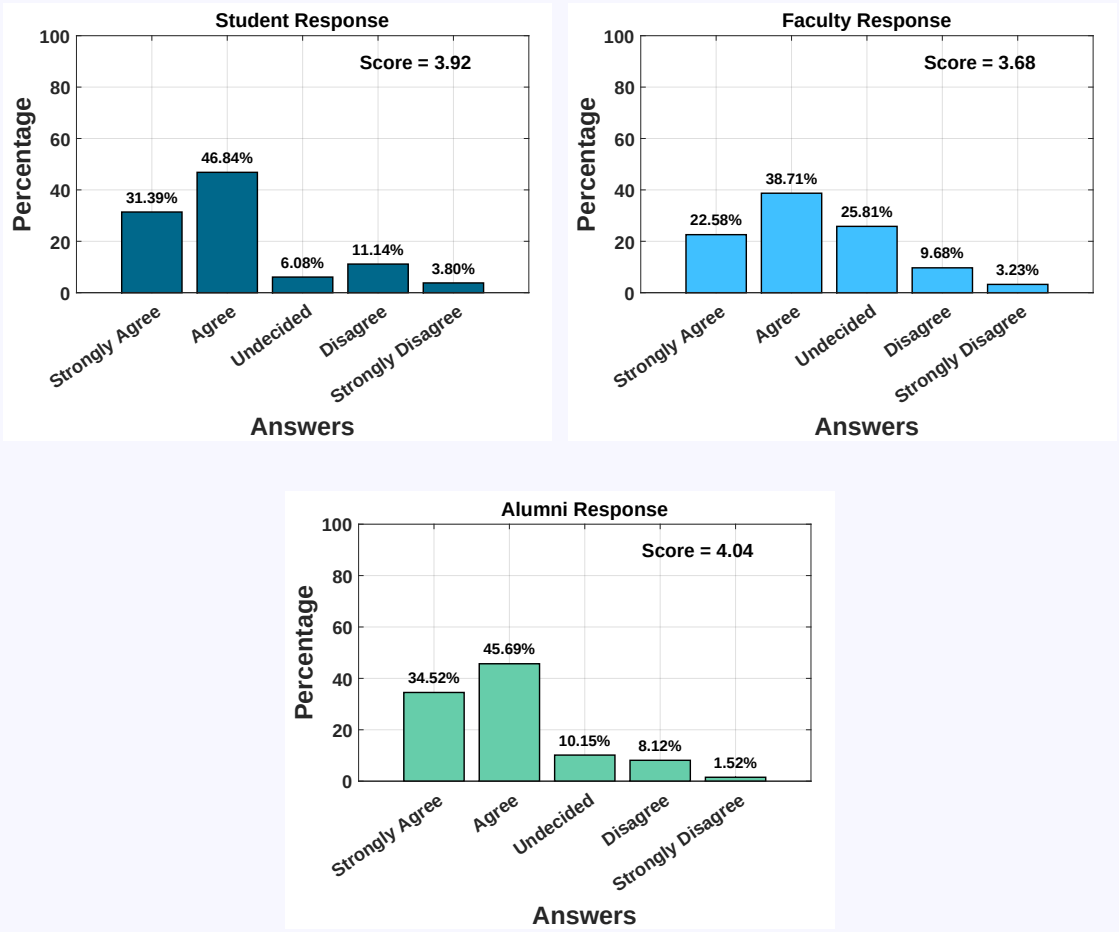


Figure 4.4: Response for the question 'Students' progress are regularly recorded and monitored'

troller [Standard 3-8]. Figure 4.6 indicates the responses.

This survey took opinion on three stakeholders namely faculty, alumni and students regarding the question "The entity maintains individual student's record properly" and the mean scores were 4.19, 4.10 and 4.07 respectively. This proves that without any doubt all the stakeholders responded positively.

Throughout the B. Sc. Engg. in EEE program the students' academic performance is graded by Grade Point Average (GPA) in each semester and Cumulative Grade Point Average (CGPA) for whole semester. Award has given to the deserving students in each semester. Those who achieve GPA 3.75-3.89 receive Dean's Award and those who achieve 3.90-4.00 receive Vice-Chancellor's Award. A candidate is awarded his/her degree with honors if his/her CGPA is 3.75 or above during passing out. [Standard 3-9].

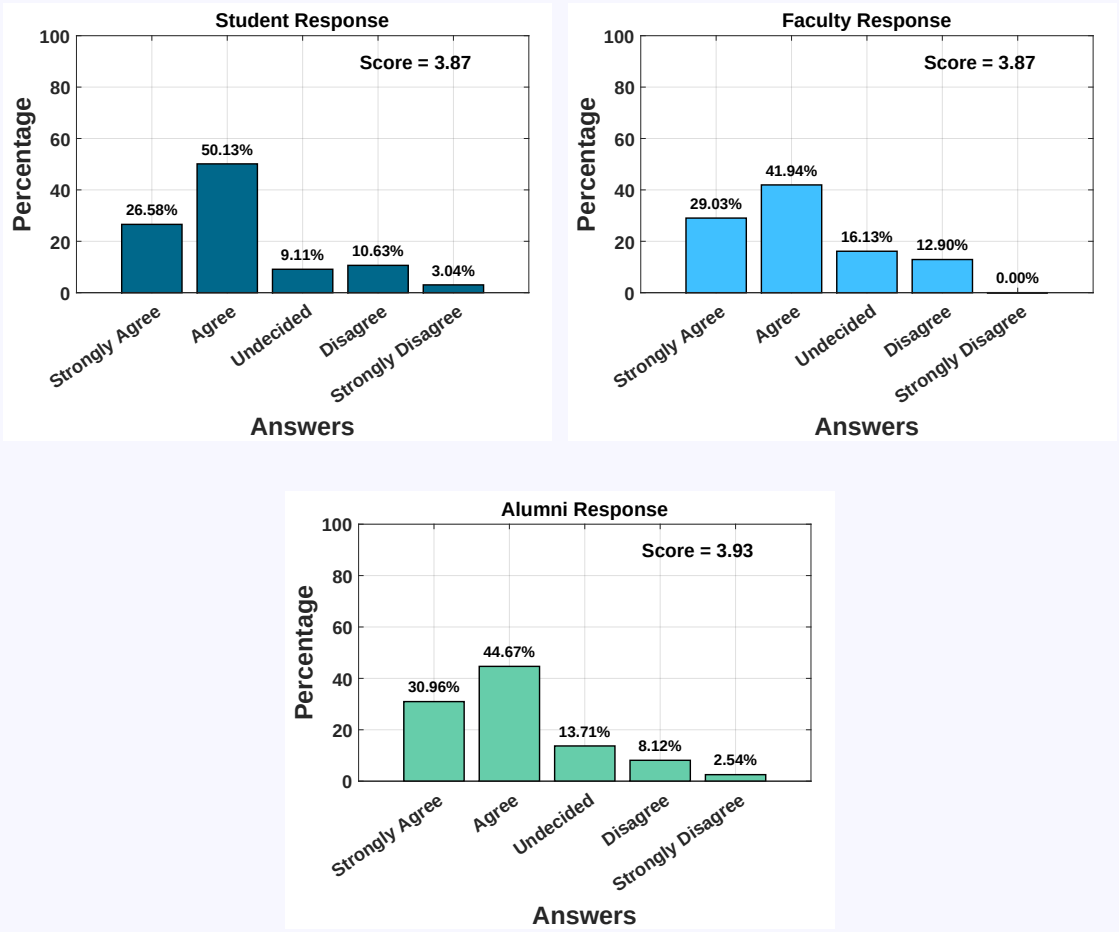


Figure 4.5: Response for the question 'Teachers provide regular feedback to the students about their progress '

4.4 Summary of the Responses

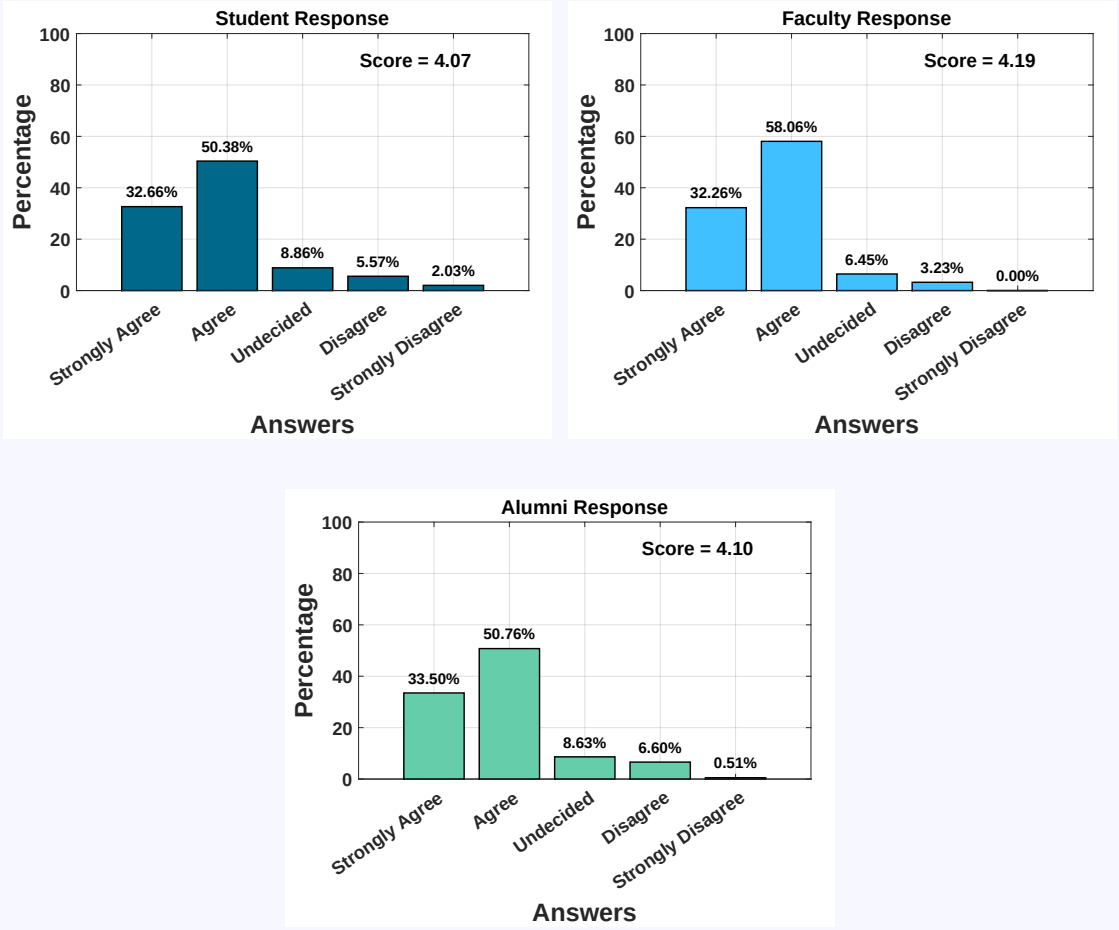
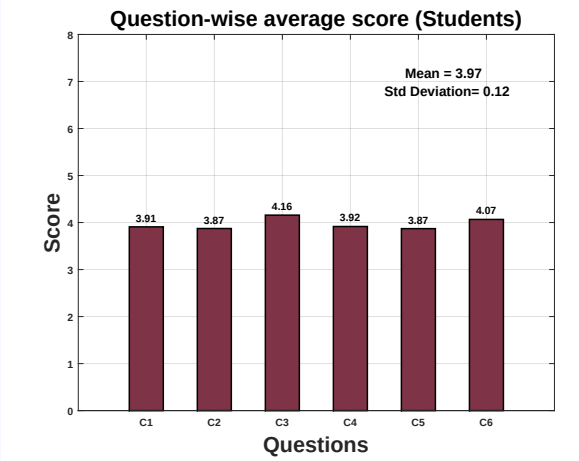
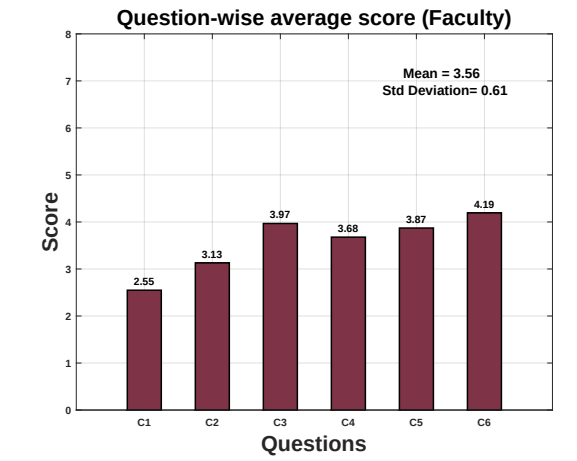


Figure 4.6: Response for the question 'The entity maintains individual student's records properly'



C1	Admission policy ensures entry of quality students.
C2	Commitment among students is observed to ensure desired progress and achievement.
C3	Admission procedure is quite fair.
C4	Students' progress are regularly recorded and monitored.
C5	Teachers provide regular feedback to the students about their progress.
C6	The entity maintains individual student's record properly.

Figure 4.7: Response summary for Students



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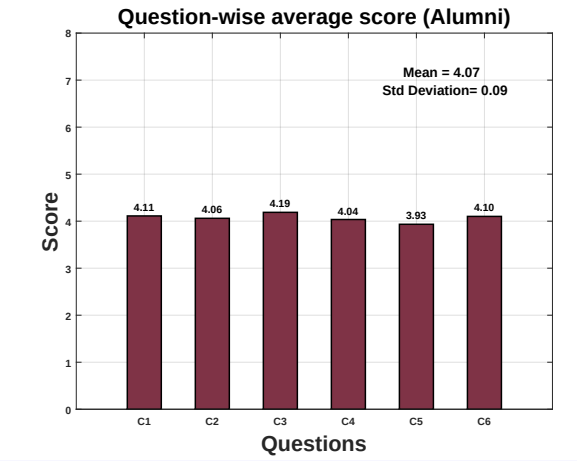
C3	Admission procedure is quite fair.
C4	Students' progress are regularly recorded and monitored.
C5	Teachers provide regular feedback to the students about their progress.
C6	The entity maintains individual student's record properly.

Figure 4.8: Response summary for Faculty



C1	Admission policy ensures entry of quality students.
C2	Commitment among students is observed to ensure desired progress and achievement.
C3	Admission procedure is quite fair.
C4	Students' progress are regularly recorded and monitored.
C5	Teachers provide regular feedback to the students about their progress.
C6	The entity maintains individual student's record properly.

Figure 4.9: Response summary for Alumni

Chapter 5

Physical Facilities

Self-assessment standards regarding *'Physical Facilities'*:

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 4-1: For the purpose of quality assurance in higher education, it is to be ensured that the physical facilities as required for a particular academic program area are appropriate, adequate, comfortable, safe, aesthetically pleasing and well managed.

Standard 4-2: The higher education institution provides and ensures access to the necessary information technology resources, computers, Internet, and other communication equipment for the teachers and students.

Physical facility is an essential part of effective learning environment. University of Asia Pacific is one of the few leading private Universities in Bangladesh which has its own permanent campus, that too in central Dhaka, which is situated in 74/A Green Road, Farmgate, Dhaka-1215, Bangladesh. Department of Electrical and Electronic Engineering of University of Asia Pacific is located on the 5th floor of the building. The department of EEE of University of Asia Pacific is self-contained as it has its own classrooms, laboratories for sessional and research activities along with other facilities. To create the utmost favourable learning environment and to assure quality education, the University has taken initiative to provide excellent physical facilities. The details of department's physical facilities including the quality and quantity have been provided as follows.

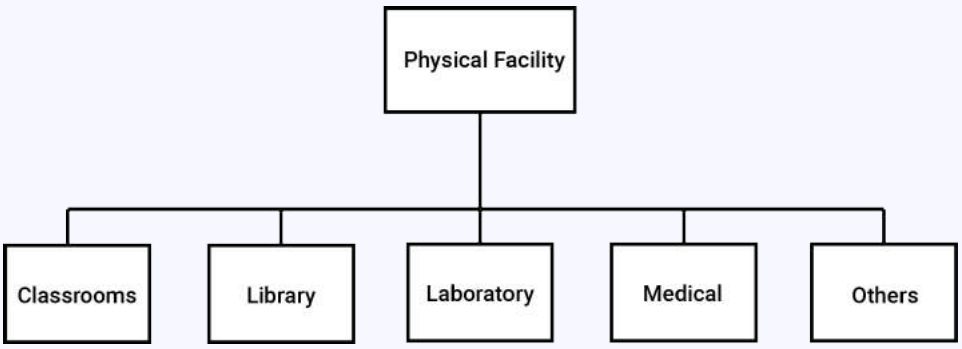


Figure 5.1: Layout of Physical Facilities

5.1 Classroom

Department of Electrical and Electronic Engineering is well-equipped with modern infrastructure based air-conditioned classrooms which are further equipped with electronic teaching aids, computers and projectors. Each semester, the classrooms are allocated centrally each semester as per the requirements. Our current semester (Fall 2017) includes 9 independent classrooms allocated for the department. The details of which are given as follows.

Stakeholders' View

As it can be observed from Figure 5.2, the average weighted score of faculty response for classroom facilities is 3.35 having 38.71% on the agreed side. Moreover, the student gave an average score of 3.38 in which majority, almost 75% and above are on the positive edge of the analysis. In addition, with a good weighted score of 4.17, alumni gave a strong positive feedback in respect to the class facilities in accordance with standard 4-1 and 4-2.

Table 5.1: Classroom Specification

Purpose of the Classroom	Room No	Area (Square Meter)	Computer	Projector	Air Condition
Lecture	303	50	✓	✓	✓
Lecture	306	50	✓	✓	✓
Lecture	407	42	✓	✓	✓
Lecture	414	50	✓	✓	✓
Lecture	415	35	✓	✓	✓
Lecture	513	60	✓	✓	✓
Lecture	514	60	✓	✓	✓
Lecture	610	56	✓	✓	✓
Lecture	615	50	✓	✓	✓

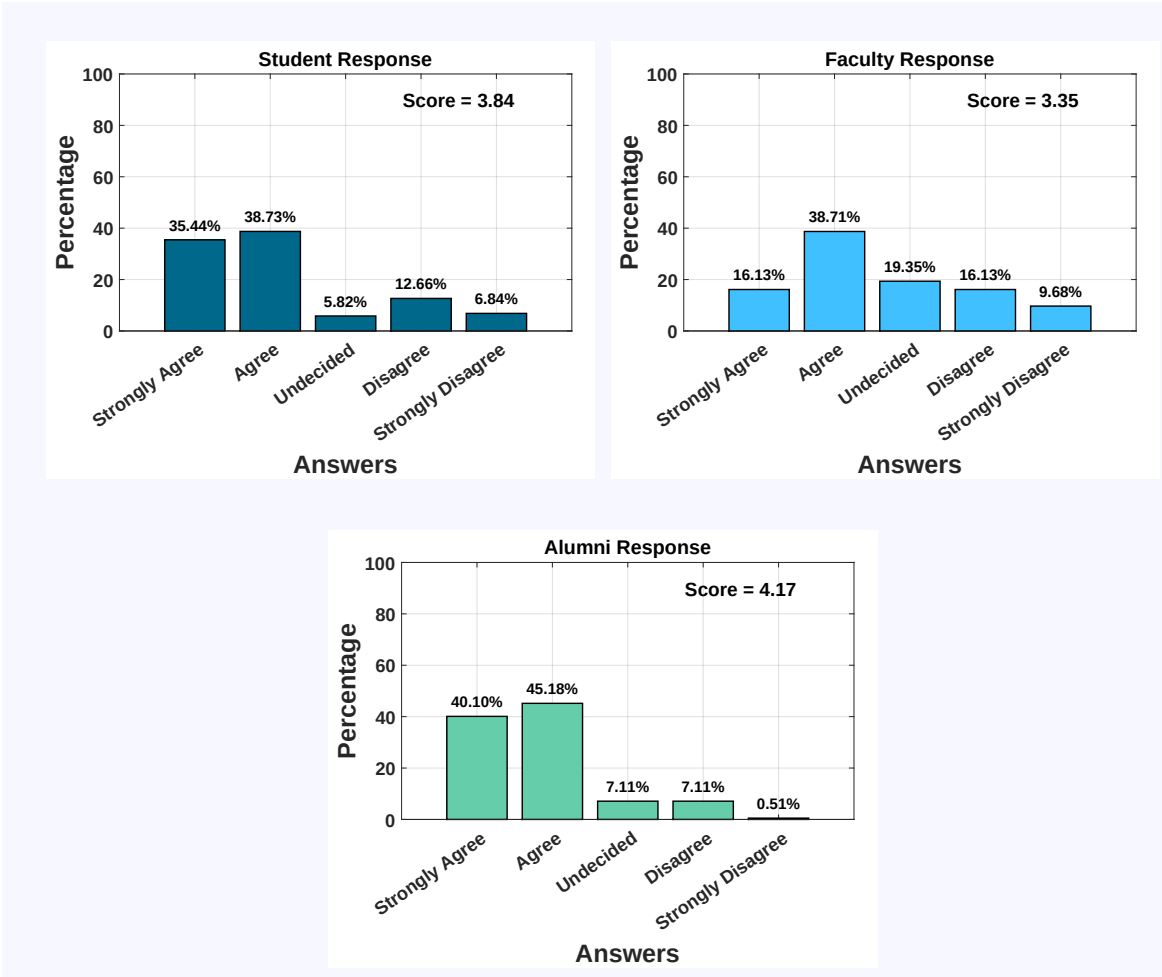


Figure 5.2: Response for the question 'Classroom facilities are suitable for ensuring effective learning'

Coming to Figure 5.3, with a moderate score of 3.55, more than 60% faculty thinks that entity has competent manpower to run the academic affairs. While considering office equipment with self-assessment requirements of standard 4-1, Figure 5.4 indicates that more than 50% faculty with a mean score of 3.35 are on the positive edge confirming the facilities associated are appropriate and adequate.

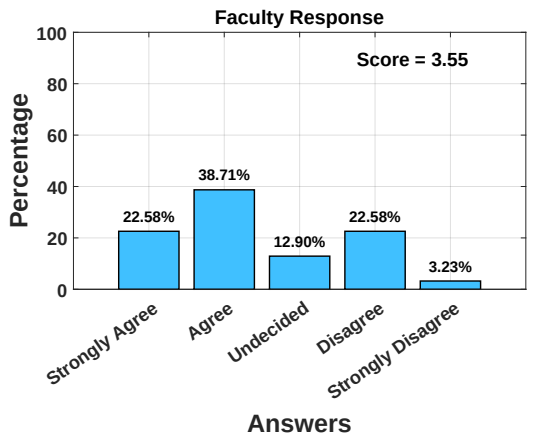


Figure 5.3: Entity has competent manpower to run the academic affairs

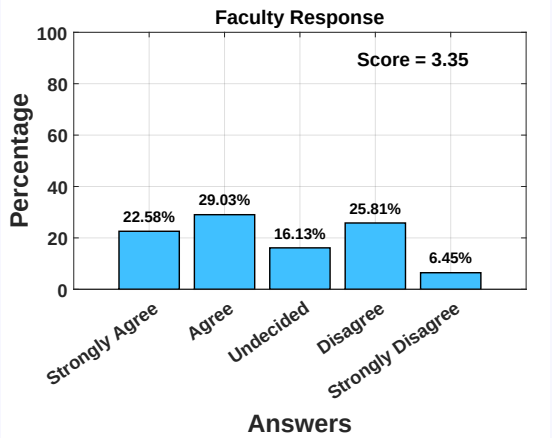


Figure 5.4: Office equipment are adequate to support the students' need

5.2 Library

Library facilities include adequate up to date collection of relevant books, journals, periodicals, reports, magazines; a well-organized database of the entire collection with location, skilled staffs for helping out students and faculties through database, adequate space for sitting arrangements and a peaceful environment for comfort reading. The central library of University of Asia Pacific has a separate spacious section for EEE department that has a good number of relevant books, periodicals, journals and magazines for students as well as faculty members. It is located in the 9th floor of the main building at the permanent campus. Students as well as faculties can borrow these books for their academic studies as well as research purpose. There is also ample space in the library and arrangements have been made there to sit and study in a calm and quite environment. Total area of the central library is 604 square meters (6500 sft) and around 160 students can study in the library at a time. Every year, the collection is reviewed and new updated list of the books and journals are provided to the authority for purchase. It is centrally air-conditioned with proper reading arrangements. The library contains around 19640 books including textbooks, reference books and other necessary literature which are being regularly

updated. It also provides an open access to 32 online journals. Different types of newspapers are being provided. The library is supervised by 7 employees. Database software is installed for effective functioning. The library is open every day for the convenience of the students.

Stakeholders' View

Considering the standard of 4-1 and 4-2, it is interesting to observe that although almost 70% students gave feedback as strongly agree or agree for library having adequate up-to-date reading and reference materials to meet the academic and research needs with an average weighted score of 3.66, feedback from almost 50% faculty think that there are scopes of improvements on this category with a mean score of 3.32. Therefore, steps have been initiated to enrich the collection of the library as a new list of books has been provided to the management for department of electrical and electronic engineering. Figure 5.5 shows the response for the question 'The library has adequate up-to-date reading and reference materials to meet the academic and research needs'.

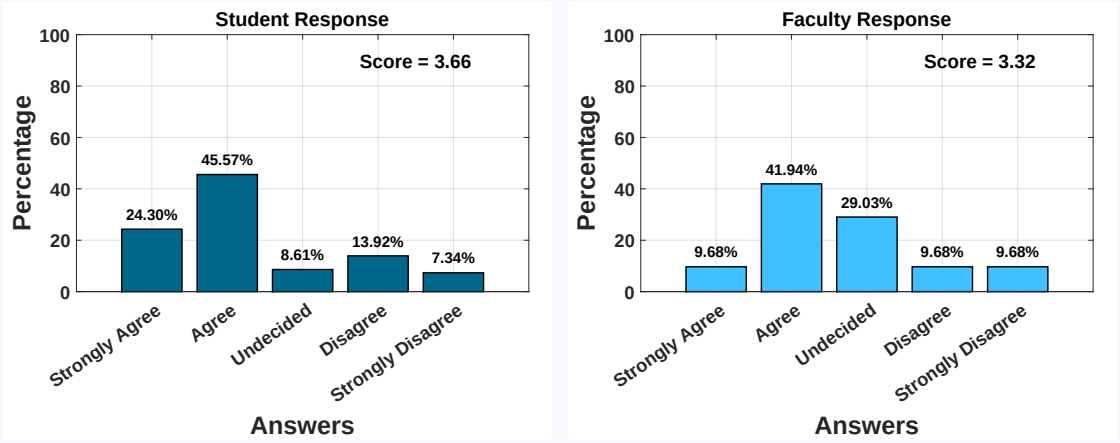


Figure 5.5: Response for the question 'The library has adequate up-to-date reading and reference materials to meet the academic and research needs'

5.3 Laboratory and Field Laboratories

There are total 16 laboratories under the department of EEE which are housed in nine laboratory rooms. All laboratories are functioning in full swing and they are also well equipped with sufficient modern apparatus. Moreover, each laboratory has a good number of well-trained personnel to provide the students best supports as well as services for conducting their lab works smoothly. Additionally, multiple lab courses are conducted in every laboratory which indicates

efficient and effective utilization of available resources. Besides, each laboratory is well-spacious to facilitate around 20-25 students simultaneously. Furthermore, students can utilize lab facilities in the free time of that laboratory with permission from the proper authority i.e. faculty member/ lab-in-charge. In addition, each lab is visited by a committee consisting of the faculty members of the department at the end of semester to investigate about the condition of the equipment. The committee places any requisition for equipment if necessary. However, there is no field laboratory under EEE department. The following table indicates the detailed information regarding each laboratory in summarized form. Table 5.2 shows the students conducting experiments in laboratory during lab classes.

Stakeholders' View

The conducted survey aimed the responses of the students, alumni and faculty members on the question based on Standard 4-1: "Laboratory facilities are congenial for practical teaching-learning". The survey results for the stakeholders are shown in Figure 5.6. It is very clear from the response that 39.49% of the students, 48.73% of the alumni and 35.48% of the faculty members are agreed with the question. Moreover, 30.13% of the students, 41.12% of the alumni and 16.13% are of the faculty members completely agreed with the query. The average score found for the responses from the students is 3.71, where a score of 3 denotes "Undecided" and a score of 4 means "Agreed". Besides, the survey reflects the average score from the responses of the alumni is 4.24, where a score of 5 denotes "Strongly Agreed" and a score of 4 signifies "Agreed". Furthermore, the faculty member stood with a score of 3.33, where a score of 3 means "Undecided" and a score of 4 denotes "Agreed". So, the survey results reflect that the students and the alumni are in compliance with providing convenient lab facilities from the department where the faculty members share neutral opinion regarding lab facilities.

5.4 Medical Facilities

All the students of UAP share the medical center within the campus which provides medical facilities for class hours. Not only students but also faculties and employees of UAP can get the medical facilities from the medical center. Besides, the medical center of UAP has three rooms where two beds and others medical resources are available to give medical supports by experienced physicians. However, the available medical resources may not adequate for serious issues but can facilitate emergency services. Further, UAP does not have any ambulances right now but can arrange transportation service which can be fulfilled by UAP owned mini-vans for emergency purposes. Moreover, the medical center of UAP is also linked with nearest hospital

Table 5.2: Summary of information regarding different laboratories

Sl. No.	Room Number	Name of the Lab	Available Area Size	Maximum Batch Engagement	Weekly Hrs. required	No. of Experiments Conducted	Conducted Lab Courses
1	R-507	Machine Lab – 01	48.5	25	42	15	EEE302 EEE204
2	R-510	Machine Lab – 02	51.13	25	45	48	ECE 202 ECE 302 EEE 208 EEE 202 EEE 122
3	R-509	Electronics Lab DLD Lab	50	25	45	37	EEE 300 EEE 210 EEE 206 ECE 304
4	R-507	Circuit Lab-01	42	26	45	42	EEE 102 EEE 122 EEE 202 ECE 202 ECE 202 (CE)
5	R-511	Circuit Lab-02	47	25	45	42	EEE 202 EEE 122 EEE 104 EEE 102 ECE 202
6	R-512	Microwave Lab Communication Lab Microprocessor Lab	54	30	9	17	EEE 310 EEE 434
7	R-505	Computer Lab	69	25	45	26	EEE 106 EEE 424 EEE 454
8	R-507	Power Electronics Lab Control System Lab Biomedical Electronics Lab	48	25	45	57	EEE 456 EEE 202 EEE 404 EEE 314 EEE 318 ECE 304 ECE 202
9	R-705	Simulation Lab VLSI Lab DSP Lab	640	25	21	28	EEE106 EEE312 EEE414 EEE438

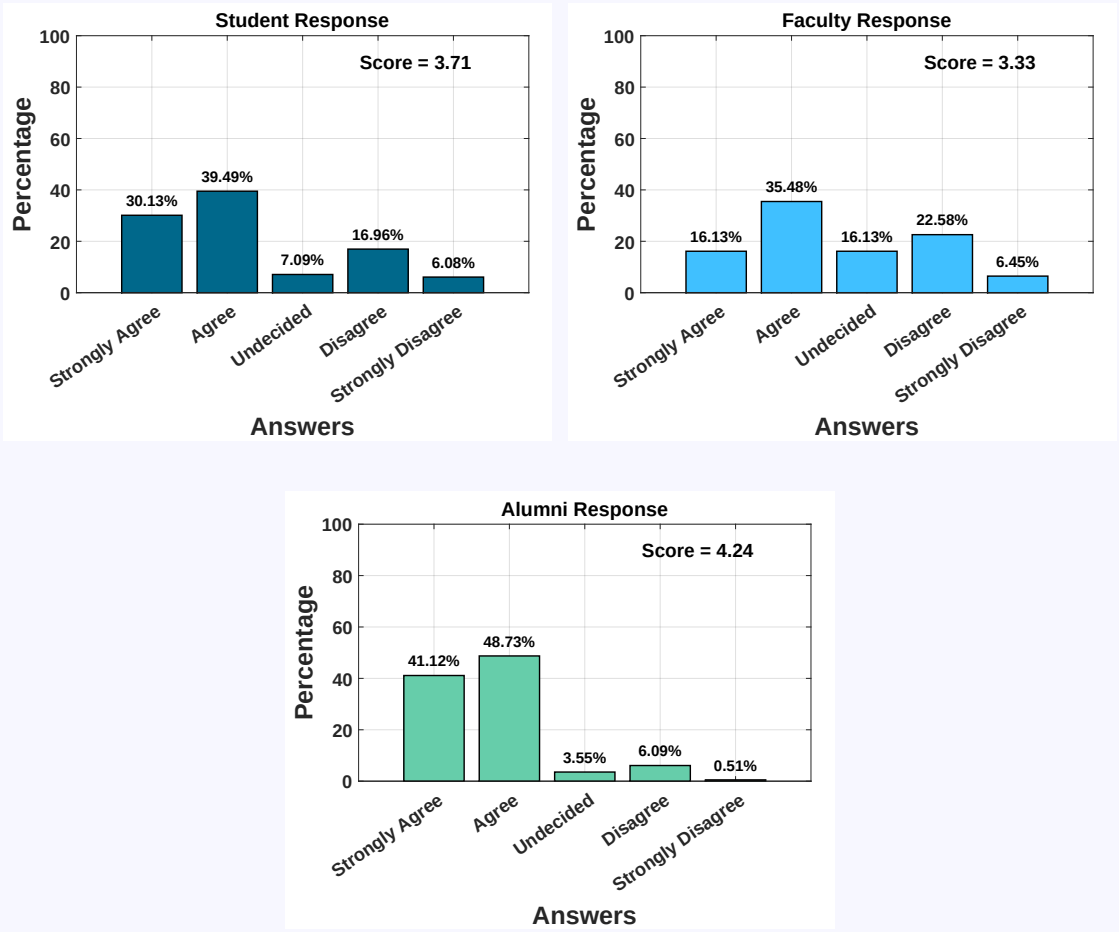


Figure 5.6: Response for the question 'Laboratory facilities are congenial for practical teaching-learning'

for providing supports to emergency issues. Moreover, students, staffs and other concerns of the university receive 15% discount from Medinova Hospital. Figure 5.7 depicts the indoor medical center of UAP.

Stakeholders' View

Figure 5.8 depicts the responses of the alumni and faculty members on the question based on Standard 5-1: "Indoor and outdoor medical facilities are adequate". 40.61% of the alumni are complied with the question where 20.3% of the alumni are totally complied with the query. Moreover, 32.26% of the faculty members are agreed with the same question. The survey results conveyed a score of 3.57 for the alumni, where a score of 3 denotes "Undecided" and a score of 4 signifies "Agreed". So, the alumni acknowledge for providing adequate medical facilities by the UAP authority. Besides, the feedback from the faculty members gave a score of 2.9, where a

Figure 5.7: Medical Room at UAP

score of 3 means "Undecided" and a score of 2 signifies "Disagree". Hence, the respondents have neutral opinion due to the fact of providing sufficient medical facilities.

The feedback from the students on the question according to Standard 4-1: "Indoor medical facilities are adequate" illustrates in Figure 5.9. It is evident from the feedback that 44.56% is complied with the question. However, 25.82% of the respondents are fully agreed with the query. The feedback states that the students stood for this question at a score of 3.69, where a score of 3 denotes "Undecided" and a score of 4 means "Agreed". Therefore, the respondents accept the statement regarding the adequate medical facilities provided by indoor medical centre.

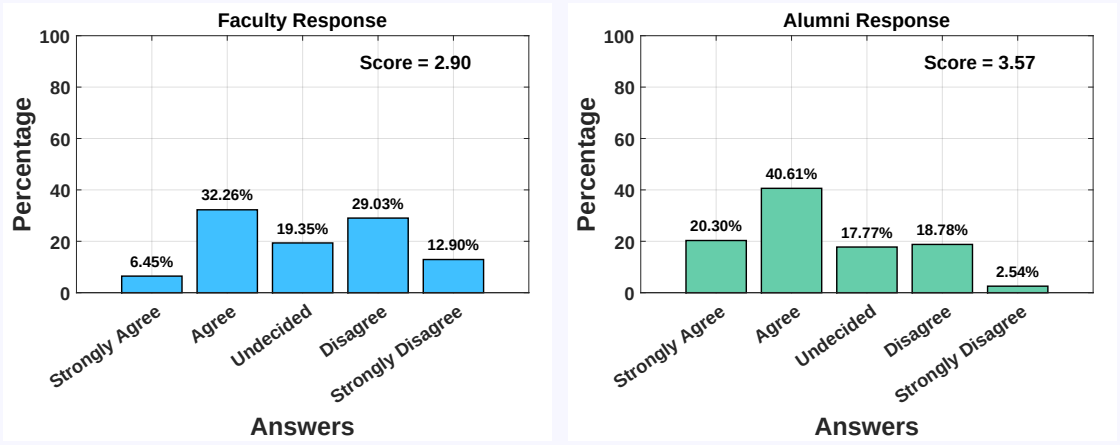


Figure 5.8: Response for the question 'Indoor and outdoor medical facilities are adequate'

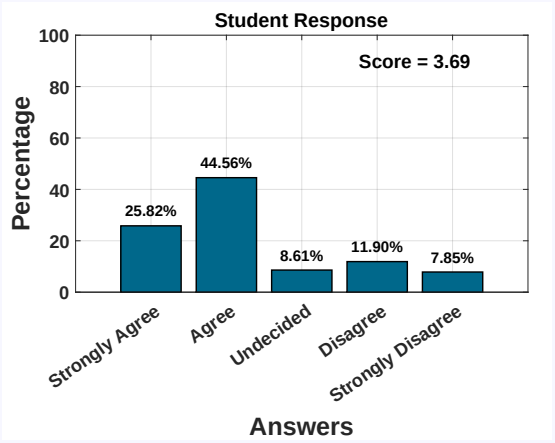


Figure 5.9: Response for the question 'Indoor medical facilities are adequate'

5.5 Other Facilities

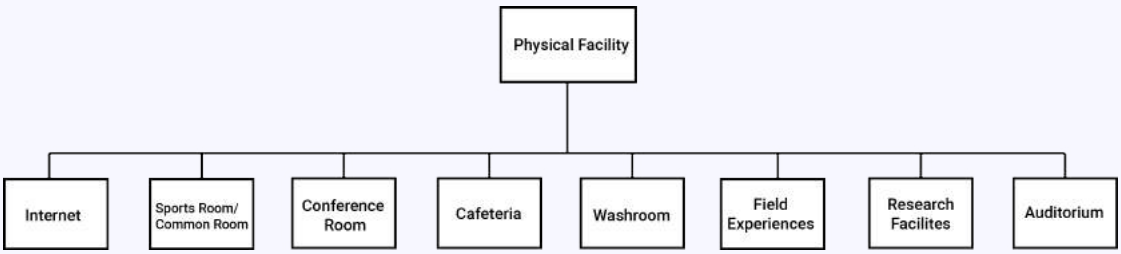


Figure 5.10: Layout of other facilities

Internet

The department of electrical and electronic engineering and its premises have high speed Wi-Fi network. The network covers the faculty offices, departmental class rooms, balcony areas and computer laboratories.

Figure 5.11: Response for the question 'Access to internet facilities with sufficient speed are available'

Analyzing the stakeholder's feedback from Figure 5.11 which refers to the standard 4-2, both faculty and alumni gave moderate rating as more than 50% of the Faculty and Alumni thinks that there is availability and accessibility of Internet with sufficient speed in the required area. However, the network has not yet been made open to all the students of the department in common spaces. Therefore, there seemed to be negative feedback among students. But the authority has taken initiatives to make the network available to all the students within a short period of time.

Sports Center/ Common Room

Department of EEE is equipped with a spacious sports room which is also used as a common room for students. Various kinds of sports activities such as Table Tennis, Carom and Chess take place among the students in the leisure period. The area of the sport center is approximately 182 square meters which is roughly 1960 square feet. The place is also considered to be a common chit-chat and gathering place at the free time of students. Sports Center gets fully occupied occasionally for different intra-department and inter-department sports activities. UAP has procured 3 acres of land in Rajuk Purbachal of Dhaka city where campus can provide its own sports facilities. Apart from that, a gymnasium with modern amenities has been proposed. Separate common rooms are yet to be available for male and female students.

Both for students, faculties and alumni, according to Figure 5.12, only around 50% thought that there were adequate indoor facilities considering the 'Agree' and 'Strongly Agree' criteria. Both of those survey had a weighted average score more than 3 which meant this field had an scope of improvement. As far as gymnasium concerns, the situation became even worse since around 90% faculty considered the gymnasium facilities to be not good at all whereas around 55% students gave negative feedback with reference to Figure 5.13. According to the assessment standard 4.2, this requires serious revision. Fortunately, the entity has proposed a new plan for building a gymnasium with modern equipment and amenities that will be available for both students as well as faculties.

Conference Room

Department of EEE has its own conference room at level 5, the area of which is 381 square feet having a capacity of 32 people. The conference room is used for attending departmental meeting, group conversation, research discussion and group meeting between students and respective teacher.

Cafeteria

University of Asia Pacific has a central cafeteria shared by all the departments including faculties and students. The cafeteria operation time is 8am-5pm and remains closed during the weekend.

Judging by the Figure 5.14, with an average weighted score of 3.13 and with almost 50% faculty giving below average ratio, the University central cafeteria needs improvement. Coming to the survey of the students, feedback is even poorer as the weighted score is only 2.83. How-

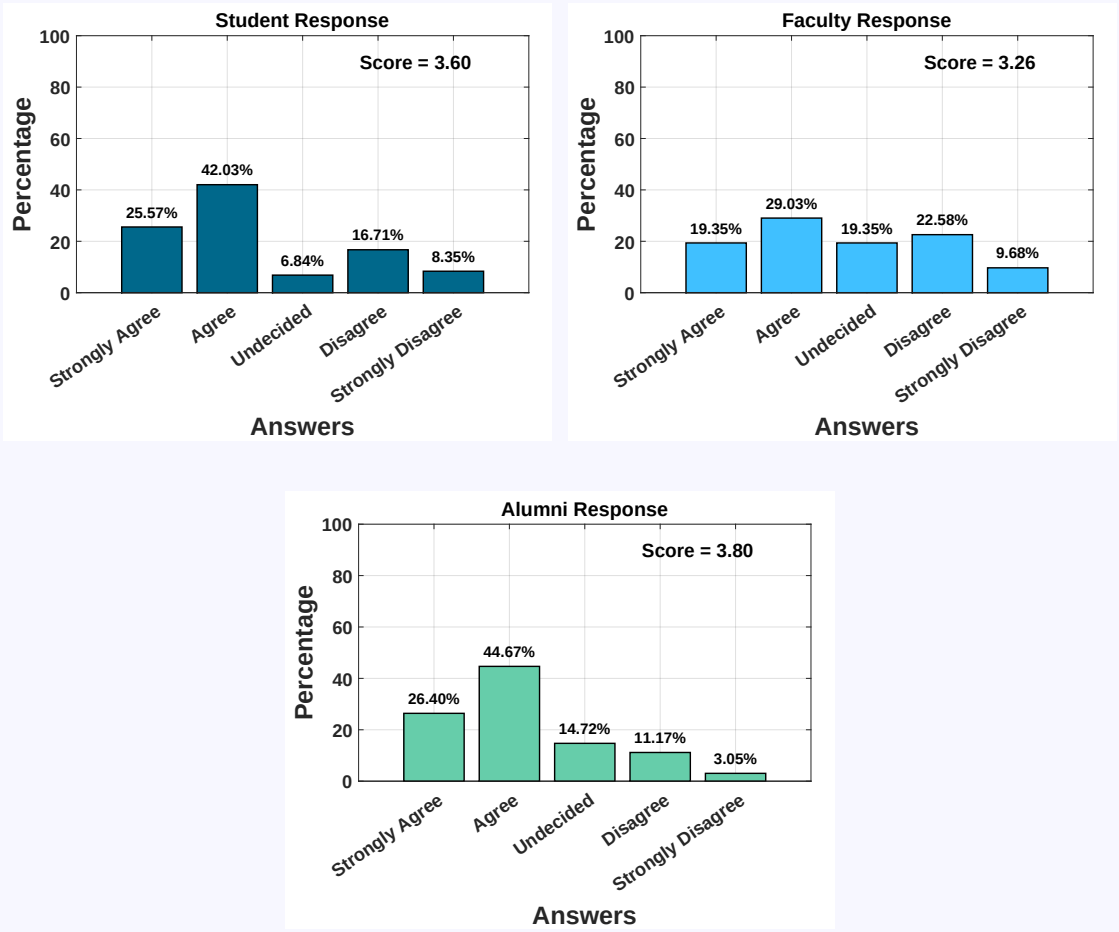


Figure 5.12: Response for the question 'There are adequate indoor sports facilities'

ever, the tender for the new contract has been made open for the cafeteria and the University is looking into the matter this time very seriously to improve the food quality with reasonable cost.

Auditorium

The students of UAP can arrange different academic as well as cultural programs in a well-spacious auditorium with 6992 square feet area which can facilitate around 300 students at a time. It is equipped with modern sound system and comfortable seating facility.

Stakeholders' View

The conducted survey targeted the responses of the faculty members on the question based on Standard 4-1: "Entity has auditorium facilities for indoor programs". The survey result for fac-

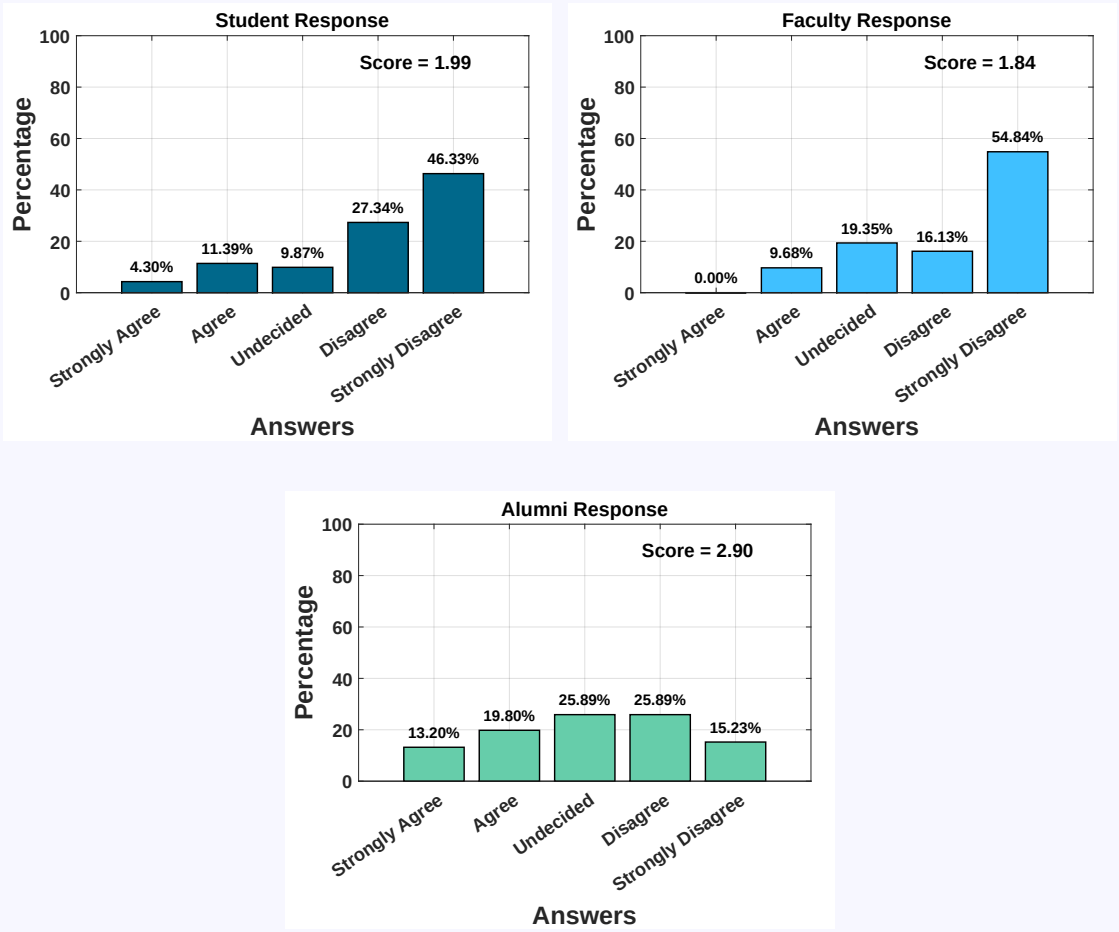


Figure 5.13: Response for the question 'Entity's gymnasium facilities are good enough'

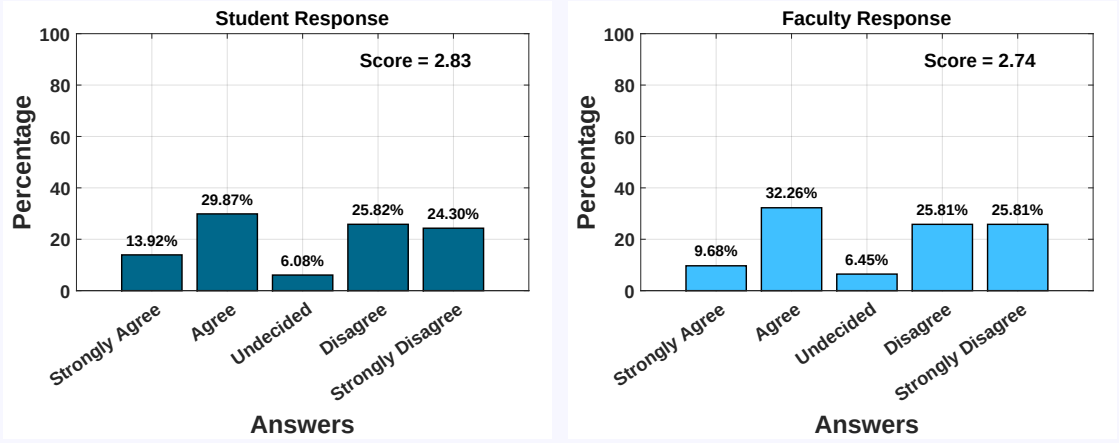


Figure 5.14: Response for the question 'Existing canteen facilities are good enough'

ulty members is shown in Figure 5.15. It is evident from the response that 32.26% of the faculty members are agreed and only 9.68% of them are completely agreed with the question. The average score found for the responses from the faculty members is 2.84, where a score of 3 denotes "Undecided" and a score of 2 signifies "Disagree". Hence, the survey results reflect the indifferent opinion of the faculty members for auditorium facilities to conduct indoor programs.

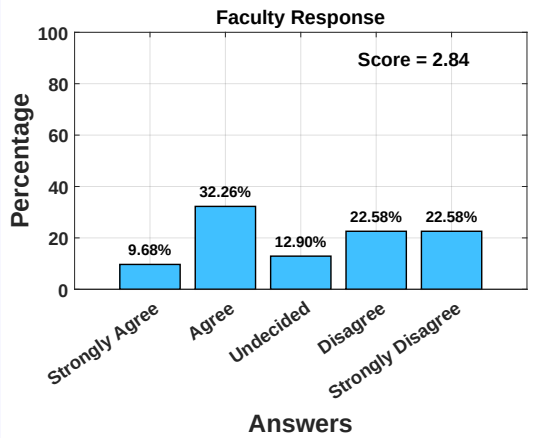


Figure 5.15: Response for the question 'Entity has auditorium facilities for indoor programs'

Washroom

Each floor of the campus provides separate as well as adequate washroom facilities for male and female students. There are multiple washrooms per block and all washrooms are regularly cleaned by the cleaners to maintain hygiene environment.

Research Facilities

The department of EEE encourages their students for research activities. Students can use the facilities of 'Project Club' and 'Simulation Lab' for conducting their research works. Besides, students can get the opportunities to conduct research works collaboratively with faculty members. Moreover, the projects or research works can be funded by INSTITUTE OF ENERGY, ENVIRONMENT RESEARCH and DEVELOPMENT (IEERD), UAP which helps students to motivate for conducting research further.

Stakeholders' View

In Figure 5.16, the feedback from the students, alumni and faculty members on the question based on Standard 4-2: "Facilities for conducting research are adequate" is shown. It is very significant from the responses that all three respondents are fully agreed with the query. 37.47% of the students, 44.67% of the alumni and 22.58% of the faculty members are complied with the question. However, 25.81% of the faculty members have strong opposite opinion with the query. The average score found for the responses from the students is 3.24, where a score of 3 denotes "Undecided" and a score of 4 means "Agreed". Besides, the survey reflects the average score from the responses of the alumni is 3.5, where a score of 3 means "Undecided" and a score of 4 signifies "Agreed". Furthermore, the faculty member stood with a score of 2.58, where a score of 3 denotes "Undecided" and a score of 2 means "Disagree". So, the survey results reflect that the students and the faculty members are in compliance with providing convenient research facilities from the university where the faculty members share neutral opinion regarding adequacy of research facilities.

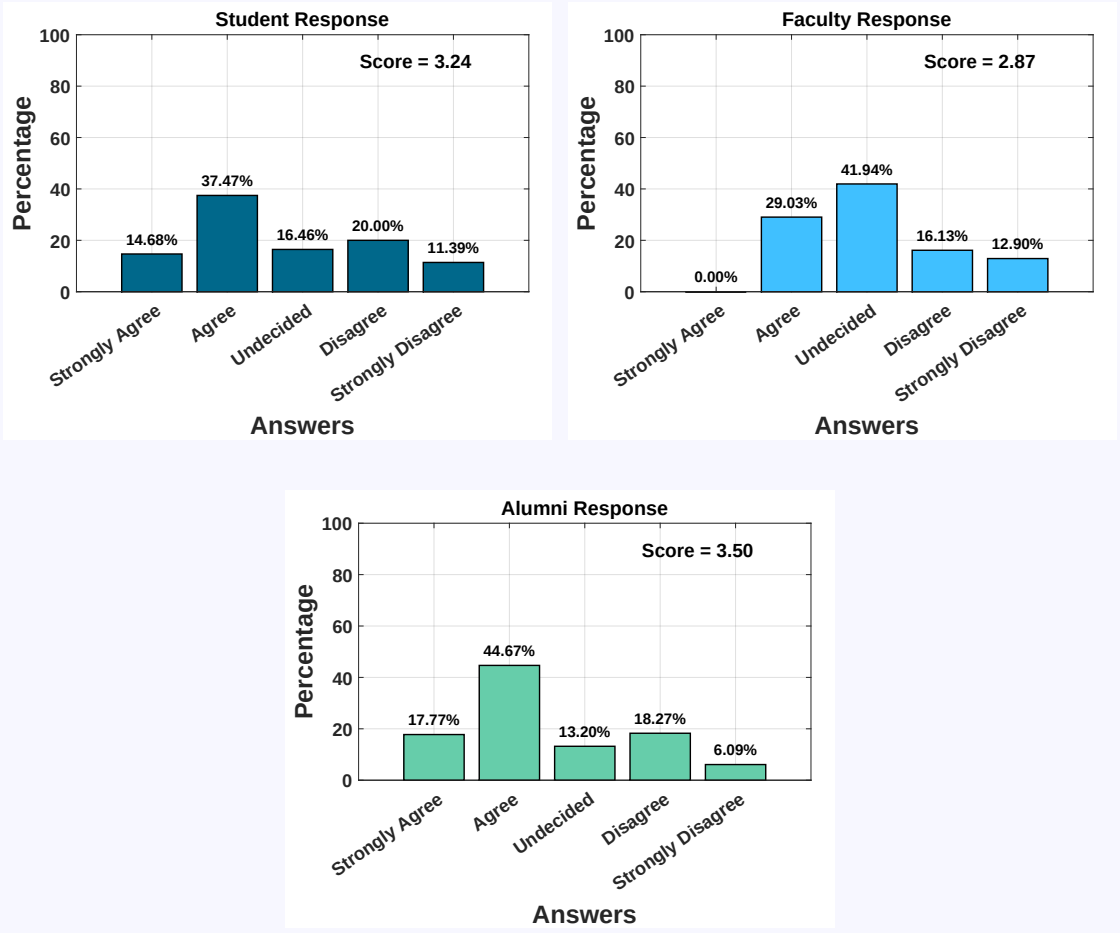


Figure 5.16: Response for the question 'Facilities for conducting research are adequate'

Field Experiences

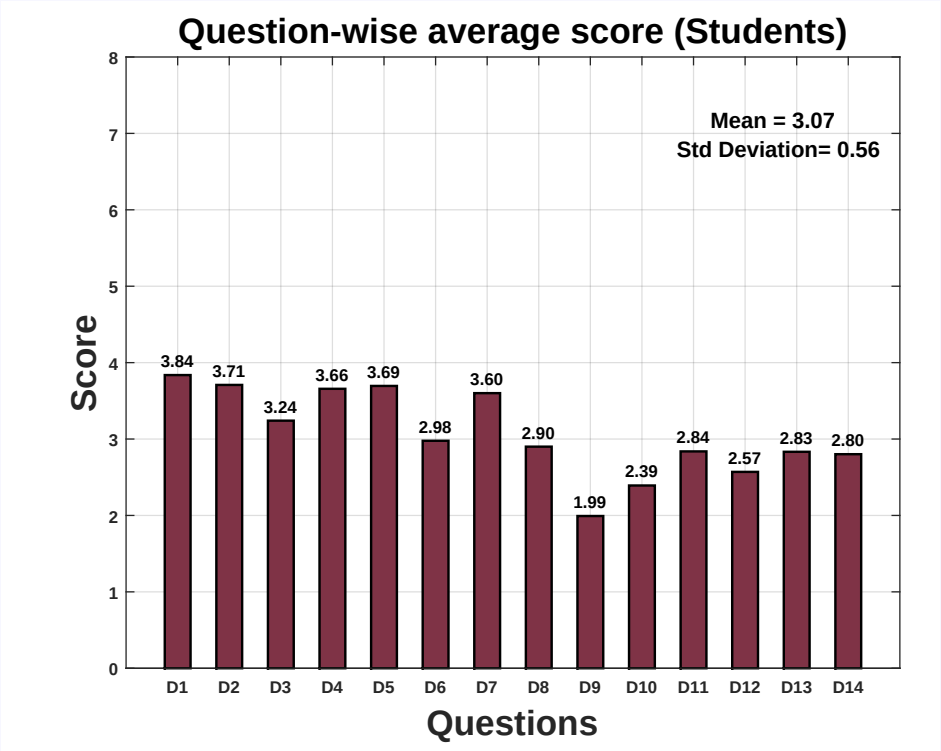
Inspecting real world applications which convey reflection of the bookish knowledge is the best possible way to realize the context of the study. The department of EEE provides such opportunities to the students by arranging different industrial tours in various organizations and research facilities. It helps the students to develop practical experiences which will come in handy in future. [Standard 4-2].

Prayer Room

Department of Electrical and Electronic Engineering has its own prayer room in the department for faculties and staff. Apart from it, University has spacious central prayer room allocated at the 1st floor of the main building.

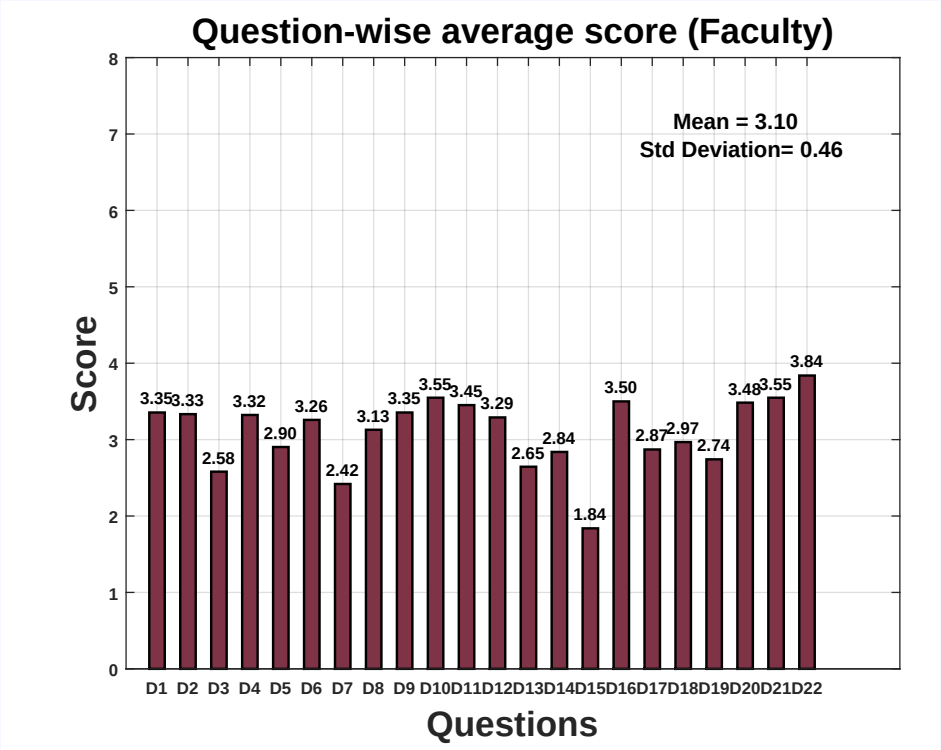
5.6 Summary of Stakeholders' View

Following Figure 5.17, 5.18 and 5.19 explain the overall scenario of the stakeholder's feedback for faculty, student and alumni respectively. The figures also give a general idea about the physical facilities in respect to the view of the stakeholders. It also shows the fields where improvements are needed. Few of the physical facilities received average or below average from all the stakeholders such as Gymnasium and Cafeteria. The University has already taken necessary steps to make quality improvements as the place and plan for gymnasium has already sanctioned whereas new tender has been asked for cafeteria. However, facilities like excellent classroom standard with modern equipment, sufficient laboratory set-up and apparatus as well as individual medical room with two resident doctors create an excellent impact comparing with the standard mentioned in 4-1 and 4-2.



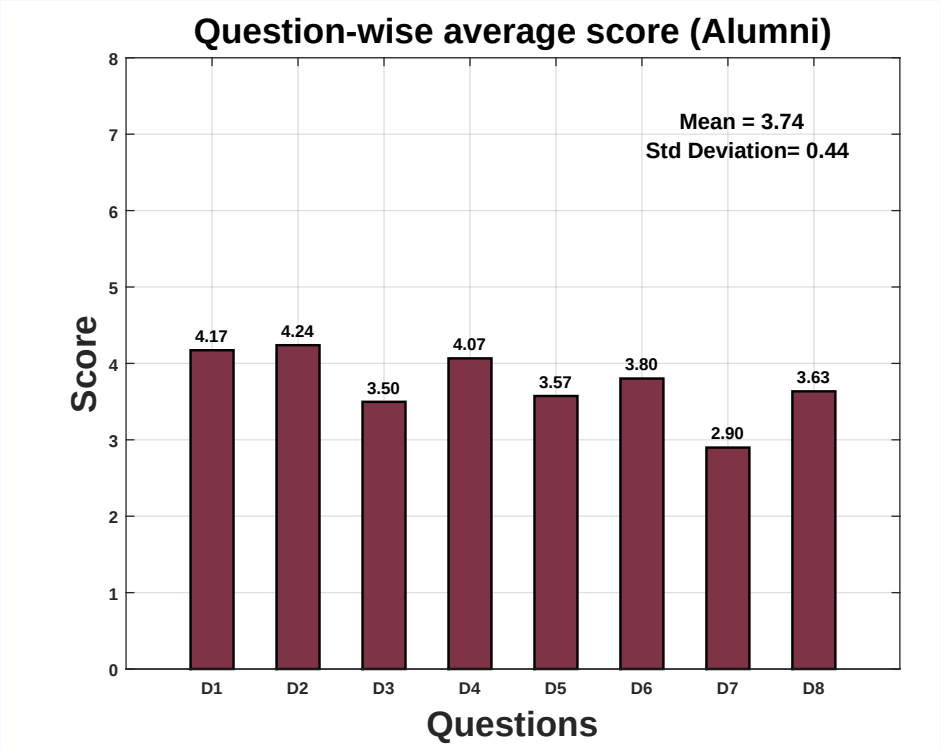
1. Classroom facilities are suitable for ensuring effective learning
2. Laboratory facilities are congenial for practical teaching-learning
3. Facilities for conducting research are adequate
4. The library has adequate up-to-date reading and reference materials to meet the academic and research needs
5. Indoor medical facilities are adequate
6. Outdoor medical facilities are adequate
7. There are adequate indoor sports facilities
8. There are adequate outdoor sports facilities
9. Existing gymnasium facilities are good enough
10. Access to internet facilities with sufficient speed are available
11. Common room facility for boys is sufficient.
12. Common room facility for girls is sufficient.
13. Canteen service is satisfactory
14. Practice rooms of clubs are sufficient. [Please specify club at others]

Figure 5.17: Response summary for Students



1. Classroom facilities are suitable for ensuring effective learning
2. Laboratory facilities are congenial for practical teaching-learning
3. Facilities for conducting research are adequate
4. The library has adequate up-to-date reading and reference materials to meet the academic and research needs
5. Indoor and outdoor medical facilities are adequate
6. There are adequate indoor sports facilities
7. There are adequate outdoor sports facilities
8. Existing canteen facilities are good enough
9. Office equipment are adequate to support the students' need – Office (Admin)
10. Entity has competent manpower to run the academic affairs
11. Access to internet facilities with sufficient speed are available
12. Entity has adequate space for prayer room – Prayer room (department's prayer room)
13. Entity has adequate space for student's common room
14. Entity has auditorium facilities for indoor programs
15. Entity's gymnasium facilities are good enough
16. Entity ensures faculty members' job satisfaction and provide them a good working environment
17. Facilities for conducting research are adequate
18. The library has adequate up-to-date reading and reference and materials to meet the academic and research needs
19. Existing canteen facilities are good enough
20. Office equipment are adequate to support the Faculty members' need
21. Entity has competent manpower to run the academic affairs
22. Internet availability throughout the campus

Figure 5.18: Faculty Survey result- Overall Observation



1. Classroom facilities are suitable for ensuring effective learning
2. Laboratory facilities are congenial for practical teaching-learning
3. Facilities for conducting research are adequate
4. The library has adequate up-to-date reading and reference materials to meet the academic and research needs
5. Indoor and outdoor medical facilities are adequate
6. There are adequate sports facilities (indoor and outdoor)
7. Existing gymnasium facilities are good enough
8. Access to internet facilities with sufficient speed are available

Figure 5.19: Alumni Survey result- Overall Observation

Communication Lab

Computer Lab 1

Power Electronics Lab

DLD Lab

Electronic Circuit Lab

Electrical Circuit Lab

Machine Lab

Machine Lab 2

Microprocessor Lab

Microwave Lab

Chapter 6

Teaching Learning and Assessment

Self-assessment standards regarding '*Teaching Learning and Assessment*':

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 5-1: Teaching learning practice is interactive, motivating, promoting sense of responsibility and commitment.

Standard 5-2: Teaching learning practice involves practical evidence, initiates critical thinking, and inspire students to apply acquired knowledge in the real life situations focusing on higher order of learning.

Standard 5-3: Teaching learning practice integrates the use of technology and also should provide students with opportunities to use these skills in academic preparation, both within and outside of the classroom.

Standard 5-4: Teaching learning practice provide enough scope to integrate co-curricular and extra-curricular activities for intended skill development.

Standard 5-5: Teaching learning methods and opportunities must ensure that the identified skills are transferred to students.

Standard 5-6: Use of lesson plan should be formalized in teaching learning practice with proper documentation and access.

Standard 5-7: Students are well informed about the criteria, process, techniques, tools and rubrics that will be used to assess performance.

Standard 5-8: In line with teaching learning student performance assessment approach must be focused on higher order learning.

Standard 5-9: Assessment procedure should be comprised of a set of multiple activities to measure the attainment of learning outcomes and skills.

Standard 5-10: Assessment procedure must be designed to test abilities and skills of student for integration and application of knowledge and analytical approaches.

6.1 Quality Staff

Quality staffs determine the quality of a university. Staffs are recruited through rigorous and competitive process which ensures the sorting of the best candidates. More details of this process are shown in chapter 7, where minimum requirements of each position whether it is academic or nonacademic are mentioned explicitly. Academic staffs are gaining knowledge through active research, and in the process if teaching students. On the other hand, to support the academic activists the nonacademic staffs are engaged in their own practical activities.

6.2 Teaching Learning method

Lectures, demonstrating and collaborating now dominates the current method of teaching [Standard 5-1]. Giving lecture is the most common form of teaching as it can address many people at once. In each theory courses, teachers provide direct lecture for one-hour duration for each credit per week. At UAP a large number of faculties uses the overhead and multimedia projector for visual aid during their lectures. Faculties also provides lecture materials and reference of text books for independent study in advance. In some courses students are given individual or group assignments and are encouraged to use different sources including online materials to complete the assignments [Standard 5-2].

Demonstrating is mainly used in the sessional/ laboratory courses which are normally of 1.5 credit hours (3 hours' duration per week). One lab assistant and one lab attendant are always present for necessary assistance. If number of students exceeds 24 then one more teacher is assigned. Teachers provide instructions on the theory and experimental procedure before the experiments. Then the teachers demonstrate the experiments to the students with the help from the lab assistants. In computer based courses, students are given hands-on-training on different relevant software [Standard 5-5].

The curriculum includes two-semester long 6 credit hours of thesis and project work which requires 3 hours of active interaction of students and supervisors per week. Students get the opportunity to address different practical topic. They are often required to visit different professional institution for data and information collection. They perform modeling, data analysis, design and/or experiments for their thesis. They are instructed by their supervisors on their work, writing and presentation [Standard 5-4].

Teaching is done by highly qualified teachers who are given training after their joining to be interactive and motivating. There are scopes for interaction in the theory classes through

in class questions by students. Course assignments help the students to interact with teachers about problem solving strategy. Students can interact more in the sessional classes as they have to take part in the experimental studies. But the thesis (courses) and outdoor activities (field trip, practical surveying) provide the best scope of interaction between teachers and students.

Immediately after admission, each student has been provided with a senior faculty as an advisor so that student can get individual guidance and motivation with the sense of responsibility and commitment as well.

In the Figure 6.1 where the stakeholder was asked about how much interactive and supportive teaching and learning is. In this case, all the stakeholders responded quite similarly. Most of them agreed the statement and second most response was "strongly agreed".

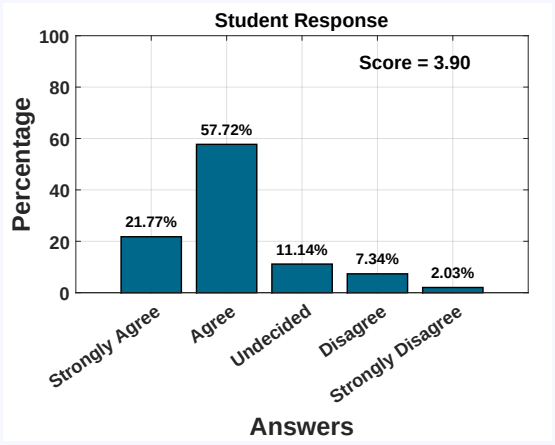
About the class size students and Alumni seemed to be satisfied and they both responded similarly in Fig 6.2. Very few of them disagreed. On the other hand, in case of faculty handful amount of them (16%) disagreed and 12% of them undecided. Similar trend followed for the question "Entity provides adequate opportunities for practical exercises to apply in real life situation" where most of the students and alumnus agreed and noticeable amount of them strongly agreed as seen in Fig 6.3. However, noticeable amount of faculty i.e. around 30% disagreed and very few (3%) strongly agreed. Some faculties (25%) were undecided with the statement.

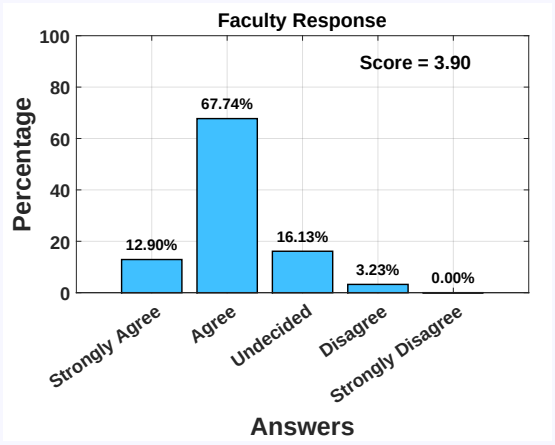
Only students were asked about the issue of student's facilities on additional practical ideas apart from class room teaching as seen in Fig 6.4 and they seemed to be agreed however, 7% and 3% of them accordingly disagreed and strongly disagreed.

Faculties also asked a single question on how teaching learning process enriches students personal development as seen in Fig 6.5. Here overall response in seemed to be positive even though 25% of them undecided and 6% of them disagreed.

6.3 Use of Lesson Plan

Teachers provide lesson plan in a form of detailed description of the course content. The format is mostly chapter wise, where a chapter is divided among several lectures. The presentation and/or class test schedule and number of test are also included in the plan. There is limited use of lesson plan as learning trajectory for a lesson. Details normally vary depending on the preference of the teacher, subject being covered, and the needs of the students. In the beginning of the





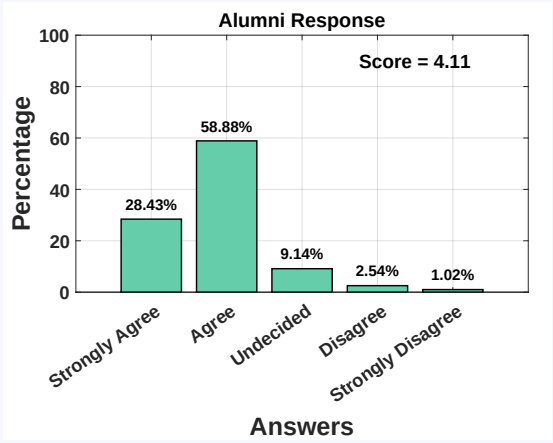


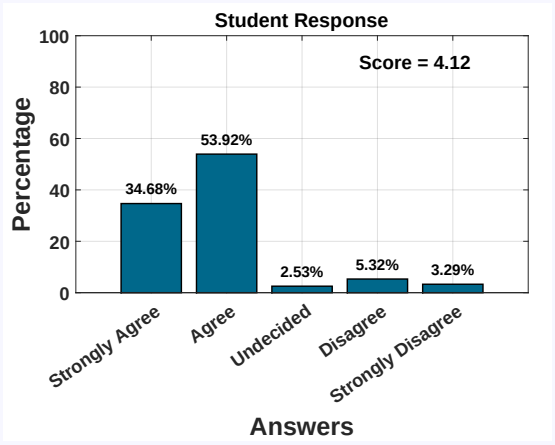
Figure 6.1: Response for the question 'Teaching-learning is interactive and supportive.'

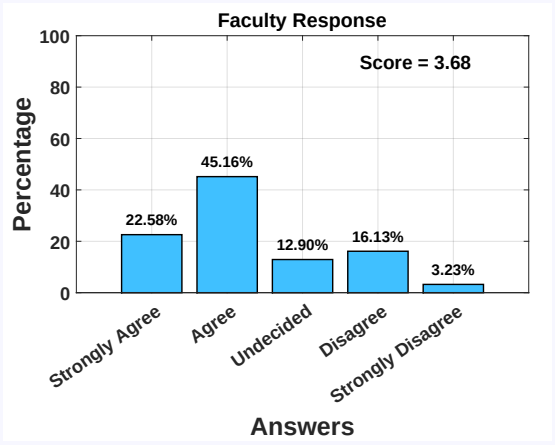
classes usually the lesson plan is given to the students [Standard 5-6]. A sample course outline is attached in the Appendix B.

Lesson plans are formalized in teacher-level and cross checked by other teachers. The access of the documents is also frequent among teachers in most cases but the department has no structured policy to keep these for further use. On the issue of if lesson plans are provided in advanced students and alumni response was very positive as seen in Fig 6.6. However, from the faculty side even though most of them agreed but 25% of them undecided on this statement.

6.4 Technology Integration

The department provides facilities to the students for effective academic preparation with the integration of technology. The facilities include multimedia projectors, laptops and computer





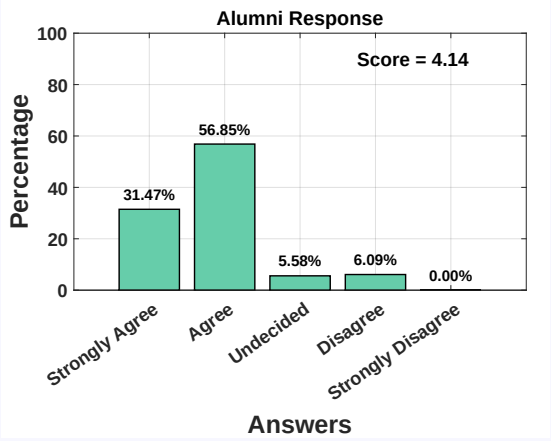
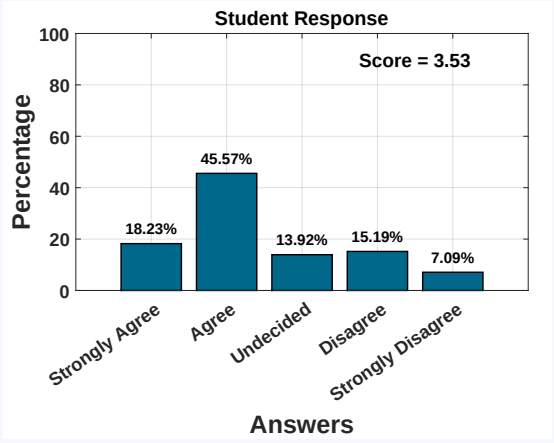


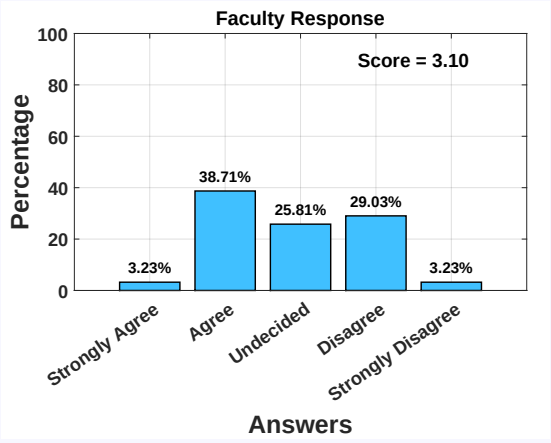
Figure 6.2: Response for the question 'Class size is optimum for interactive teaching learning'

room for teachers, classroom computer for final year students, GIS lab, and library computers for all students. Most of the computers are available with internet facilities. Teachers regularly give assignments to students that encourage use of online resources. The presentation works of different courses also require information from various online sources.

The university uses effective online Student Information System (SIS) named "Orbund" which is a common platform for teacher, students and administrative staffs. Teacher can take attendance, grade assignments, share teaching resources. Students can track their academic status, course fees payment status, interact with teachers and others. Administrative staffs can see overview of the whole university system. They manage financial and other academy related work for example creating academic report, track each student status through this SIS.

All teacher have the practice of using power point or Prezi presentation to teach efficiently





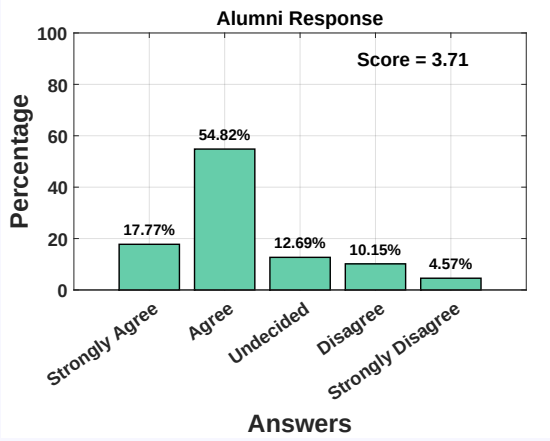


Figure 6.3: Response for the question 'Entity provides adequate opportunities for practical exercises to apply in real life situation'

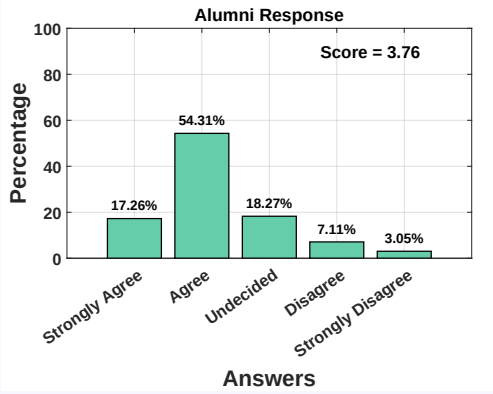


Figure 6.4: Students attained additional practical ideas apart from class room teaching

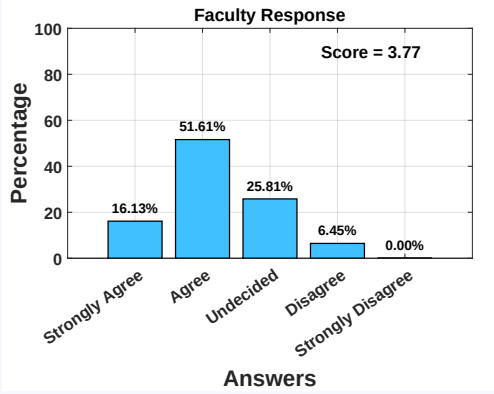
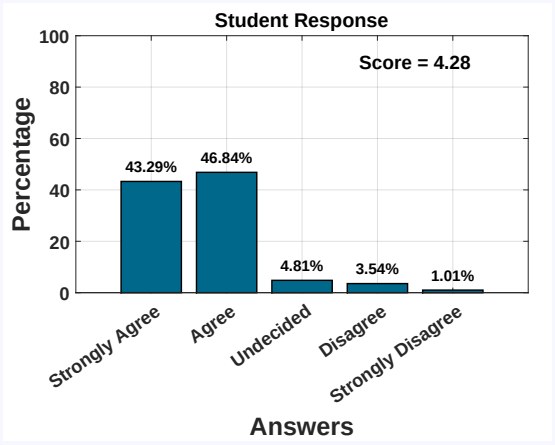
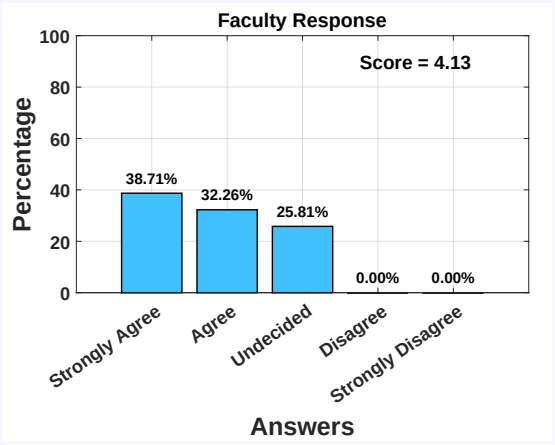


Figure 6.5: Teaching-learning process encompasses co-curricular activities to enrich students' personal development





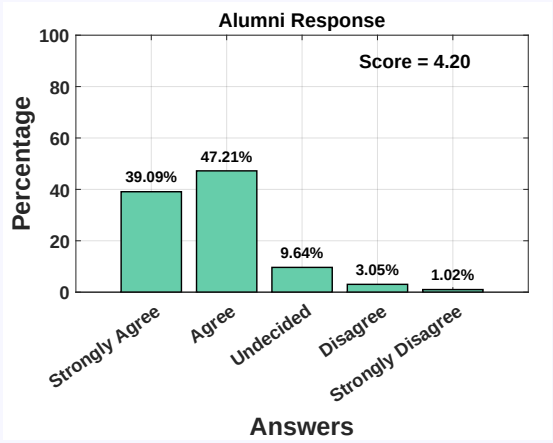


Figure 6.6: Response for the question 'Lesson plans/course outlines are provided to the students in advance'

in the classroom so that students get scope to learn more realistically with the actual figures, graphs, images and videos. Online assignment submission, online quiz and online attendance have been practiced also by many teachers [Standard 5-3].

Students are taught the use of different software and some mandatory technological courses like computer programming. They have to use SIS to enroll in courses. In the course of time they are taught software like Pspice, Matlab, Simulink, Homer and other electrical engineering related software. Students apply these tools in their thesis work and they have to submit the soft-copy of their report too. Students are encouraged from the department to publish scientific paper in conferences and /or journal based on their thesis work.

How modern is our teaching style? In this question all of the stakeholders responded positively as seen in Fig 6.7. However, on the issue of using diverse method to achieve learning

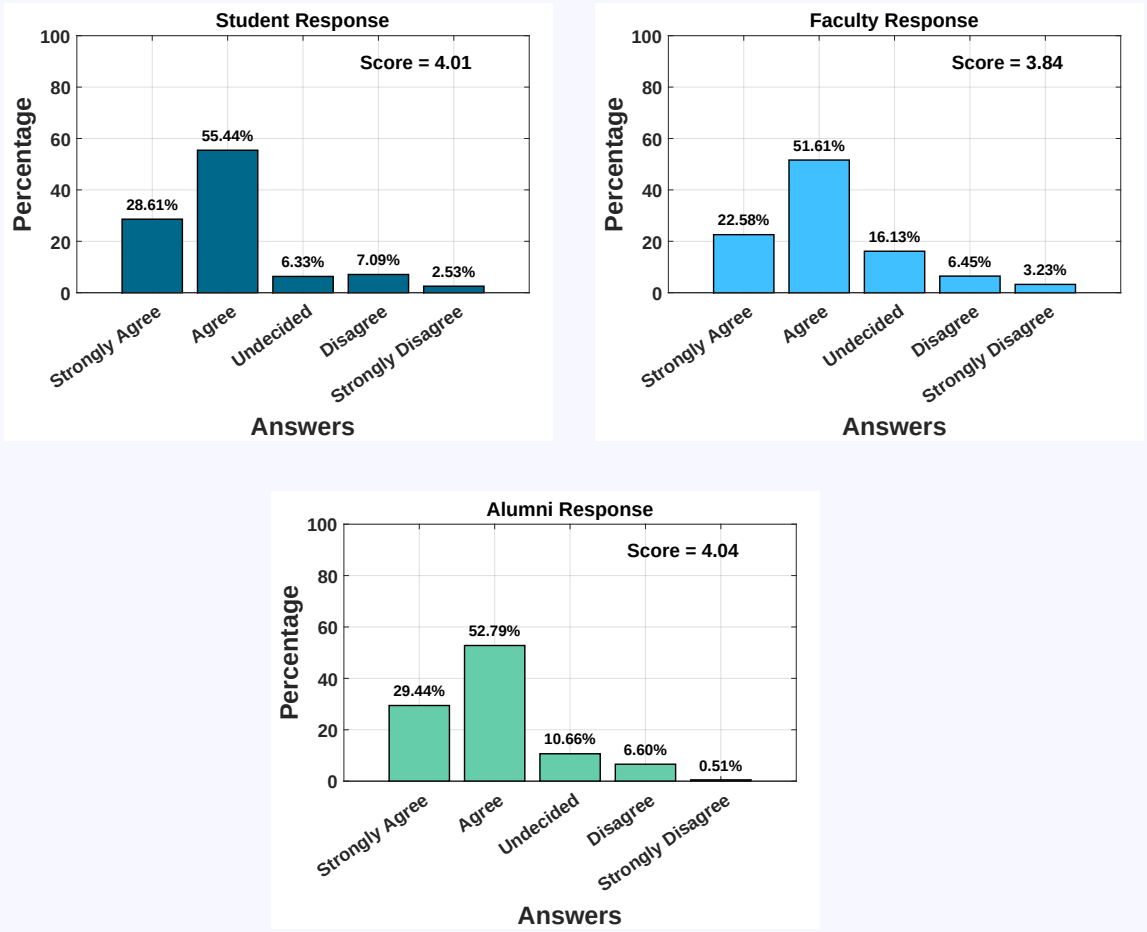
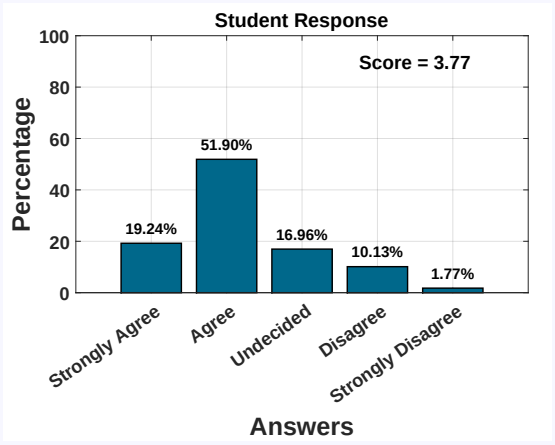


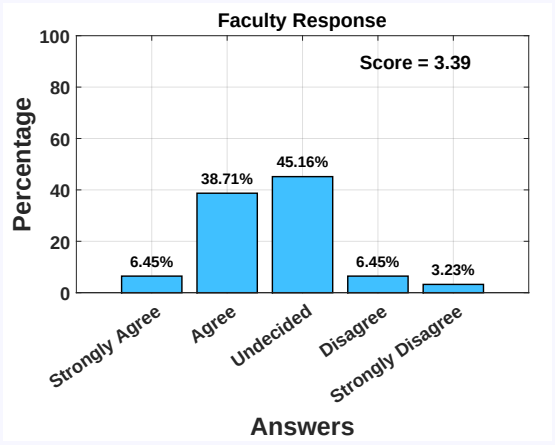
Figure 6.7: Response for the question 'Modern devices are used to improve teaching-learning process'

objective only faculties responded differently than students and alumni as seen in Fig 6.8 where most of the students and alumni agreed with it but faculties are undecided.

6.5 Skill Development Mechanism

The teaching practice is focused on technical skill development along with their creativity and problem solving skill, communication skill (oral and writing), management skill, information and networking skill. The designed curriculum of all courses ensures quality technical skill. Though there is a lack of hands-on training in the program but the department arranges several technical seminar and workshop in each semester which help student to increase hands-on skill. Different club activities emphasize the development of life skills, learning and information skills. The curriculum is updated regularly based on the opinions of alumni, professionals, employer,





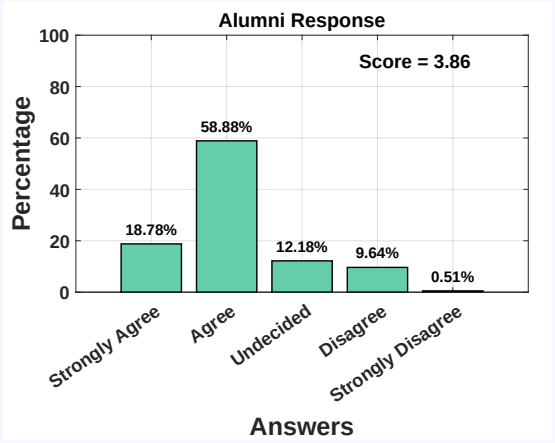


Figure 6.8: Response for the question 'Diverse methods are practiced to achieve learning objectives'

and other technical bodies.

If students face any problem they communicate with class teachers and advisors verbally both within and outside of the classroom. They often have to visit different institutions and industries for their course work and thesis studies and communicate with the alumni through which students can improve their networking skill. Faculties take presentation on theory courses and students have to give presentation on a topic in front of students and teachers. These help to develop students' oral communication skill. Writing skill of students is mainly developed by report writing. Students have to submit different reports such as lab reports, survey reports, and study tour reports along with the thesis report. They often write scientific reports with their respective supervisors and publish their works on national and international journals and conferences. Most of the assignments require extensive thinking, group working, and reading from different sources from where they have to summarize the required findings. Thus they

can improve their writing skill and thinking skills. Different group help to develop students' management skill. Group works such as surveying group presentation etc. are part of the curriculum. For most of the sessional courses student have to submit a project in a group of 4 or 5 members which helps student to increase their technical skill as well. The department also provides scopes to students to arrange co-curricular and extra-curricular activities like project exhibition, club fair, long tour, and picnic etc. for intended skill development[5-4]. UAP IEEE student branch and Project Club are two highly active platforms through which students arrange different co-curricular activities.

IEEE UAP SB was formed on December 2015.The branch is located in 74/A Green Road, Dhaka, which is the main campus of the University. Starting with 30 members currently the SB has 54 active IEEE Student members, including 9 WIE AG Members. Within the last few months the SB introduced various seminars and workshops focusing current technological trend and student interest. The branch is constantly growing and engaging more students in different activities of IEEE plus building a network in Bangladesh.

The recent activities of IEEE SB, UAP of year 2017-2018 are:

1. The most highlighted activity was "Project Exhibition 2017", which was on November 23, 2017, organized with the collaboration of EEE UAP Project Club. Total 18 in-house projects from IoT & Assistive technology were displayed daylong in UAP Plaza. This event was inaugurated by Prof. Dr. Abdul Matin Patwari, Professor Emeritus and Former VC, UAP. The energetic day came to an end with a 'Prize Awarding Ceremony' in which Prof. Dr. Jamilur Reza Choudhury, VC,UAP remained as the chief guest.

2. A daylong workshop on "Basic Arduino" was organized on May 19, 2017, in which around 60 students including IEEE members were given hands on training on Arduino.

3. Another Highlighted event was 'Introductory PCB Design' on 20 May 2017. This workshop was conducted by two executive members of IEEE WIE AG BS, Shoilie Chakma, Lecturer, EEE, BUET; Treasurer,WIE AG Bangladesh Section & Irtiza Haque, System Engineer, Service Operations, Grameenphone Ltd.; Professional Activities Coordinator, WIE AG BS.

4. A day long industrial visit in Energypac Power Generation Ltd. at Savar was organized by IEEE UAP Student branch on 23 May 2017. Total 20 IEEE Student Members of UAP were present at that visit. In that visit, students were shown brief manufacturing and testing processes of distribution transformer, CT, PT, cast resin transformers and various protecting

equipment like vacuum circuit breaker, oil circuit breaker and so on by the engineers of Energypac.

5. Another event was a seminar on 'Smart Grid: Self-healing and Energy Efficient Power Grid' on April 27, 2017. Dr. Jahangir Hossain, Associate Professor, Department of Engineering, Faculty of Science, Macquaire University NSW 2109, Australia, was remain as the keynote speaker. The Seminar was attended by students including IEEE student members as well as UAP faculties.

6. Our branch got opportunity to be a part of "Anticlockwise" as both trainer and host branch. As trainer our branch sent a a team to IEEE UIU SB for a workshop on Arduino. We hosted a workshop on "Android APP development" where IEEE DU SB came as trainer.

7. A seminar on "A Brief History of Modern Cosmology" organized on 14 December 2016. Dr. Bijon Saha, Leading Research Fellow, Joint Institute for Nuclear Research, Moscow, Russia was the keynote speaker.

8. A seminar on 'Data Center Technology and Career Counseling' on May 3 , 2017, which was presented by Khan Muhammad Fuad Bin Enayet, Assistant General Manager, Fiber@Home Limited, Bangladesh. The Seminar was attended by students including IEEE student members as well as UAP faculties. Various aspects of data center were elaborately discussed along with the scope of career (both in home and abroad) in this field.

9. A workshop on 'Writing Research Paper using LaTeX' in the department of EEE December 07, 2016. This workshop was attended by 40 students including all IEEE student members from UAP as well as students from CSE and CE department.

The Project Club of EEE was formed in 2011 and the club organized its first project exhibition in 2012. From the beginning of the formation Project Club are organizing different technical seminars and workshops frequently. Very recently Project Club organized a project exhibition with collaboration of UAP IEEE SB. Others co-curricular activities like industrial trips (such as, Kaptai, Energypac, EM Power are arranged time to time. The students also participate in extra-curricular activities like annual cricket or football tournament, festival, picnic etc. Through these activities students can develop their management skill.

6.6 Assessment of Student Performance

In its simplest terms, a performance assessment is one which requires students to demonstrate that they have mastered specific skills and competencies by performing or producing something. Learning takes place in students' heads where it is invisible to others. This means that learning

Figure 6.9: Students showing their project on the project exhibition, 2017

Figure 6.10: A moment of the seminar on Data Center Technology and Career Counseling

Figure 6.11: A moment of the workshop on Introductory PCB Design

Figure 6.12: A moment of the workshop on Arduino Microcontroller

must be assessed through performance: what students can do with their learning. Assessing students' performance can involve assessments that are formal or informal, high- or low-stakes, anonymous or public, individual or collective.

Assessment procedure of the department comprises the following activities: designing and carrying out experiments; writing reports which require students to rethink, to integrate, or to apply information; working with other students to accomplish tasks; building projects to demonstrate proficiency in using a piece of equipment or a technique, writing term papers and technical papers, participating in oral examinations, developing portfolios, developing routines skills etc [Standard 5-9].

As the ultimate objective of the program is preparing the students as a contributors in a fast-paced workplace where the emphasis is on using information rather than just knowing facts, the entity ensures that the students ascend through the hierarchy of learning, and also puts special emphasis on how students' achievements of learning outcomes are rendered[5-8]. The assessment methods involve report writing, critical analyses, presentations and oral examination, research works written exam. The assessment approach ensures that the students are enabled to make relevant and insightful implications, rethink to use their knowledge in new situations or to apply information and relate their thinking to other situations and to their own background knowledge.

The performance of student is assessed by the university based on some set of rules. In sum-

mary, the total marks of assessment of theory courses is divided into attendance (10%), continuous assessment (class performance, class test, assignment, presentation) (20%), mid-term examination (20%) and final examination (50%). Student are informed at the semester beginning about this distribution [5-7]. Assessment of sessional courses has been practiced with almost similar subdivisions and additional viva test. And the assessment of thesis is based on quality of work, report and presentation. This assessment is done by the supervisor and members of defense board.

The Grading System

The total performance of a student in a given course is based on a scheme of continuous assessment. For theory courses this continuous assessment is made through a set of quizzes in class evaluation, class participation, homework assignment, mid and a term final examination. The assessment in laboratory/sessional course is made through observation of the student at work in class, report, viva-voce during laboratory hours, and quizzes. As discussed earlier, each course has a certain number of credits which describe its weight age. A latter grade with a specified number of grade points is awarded in each course for which a student is registered. A student's performance is measured by the number of credits that he/she has completed satisfactorily and the weighted average of the grade points that he/she has maintained. A minimum grade point average is required to be maintained for satisfactory progress. Also a minimum number of earned credits should be acquired in order to qualify for the degree.

Letter grades and corresponding grade-points will be awarded in accordance with provisions shown below:

Numeric Grade	Letter Grade	Grade Point
80% and above	A+	4.00
75% to less than 80%	A	3.75
70% to less than 75%	A-	3.50
65% to less than 70%	B+	3.25
60% to less than 65%	B	3.00
55% to less than 60%	B-	2.75
50% to less than 55%	C+	2.50
45% to less than 50%	C	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00

Distribution of Marks

Thirty percent (30%) of marks shall be allotted for continuous assessment i.e. quizzes and homework assignments, in class evaluation and class participation. The remaining marks will be allotted to Mid-term and Final examination which will be conducted centrally by the University. The distribution of marks for a given course will be as follows:

	Assessment Method	(%)
(i)	Class attendance	10
(ii)	Homework, Assignment and Quizzes	20
(iii)	Midterm Exam (1 hour)	20
1-4	Final Exam (3 hours)	50
	Total	100

Basis for awarding marks for class participation and attendance will be as follows:

90% and above	10
85% to less than 90%	9
80% to less than 85%	8
75% to less than 80%	7
70% to less than 75%	6
65% to less than 70%	5
60% to less than 65%	4
Less than 65%	0

For 2 credit courses 2 best out of 3, for 3 credit courses 3 best out of 4, and for 4 credit courses 4 best out of 5 quizzes may be considered for awarding grade. These may be considered as minimum recommended number of quizzes for any course. If the number of quizzes administered in a course exceeds these suggested minimum numbers, then two-thirds best of all quizzes may be considered. The scheme of continuous assessment that a teacher proposes to follow for a course will be announced on the first day of classes.

Different analysis and design problems are there along with theoretical questions in the final examination question. The open-ended assignments are given in some courses to assess individual student which also develop students' problem solving capability. Students work/study on specific topic for preparing presentation that develops their own learning capability. For the thesis study, each student works in detail individually with respective supervisor on a unique and unsolved problem. So, the assessment is directed towards higher order learning.

The booklet describing the student performance assessment rules is available from the department. Students are advised to collect it as soon as they start program.

Stakeholders' Responses

Total 396 students, 197 alumni and 32 faculties participated in the survey. More than 85% alumni and students, and more than 93% faculties agreed that, assessment systems are duly communicated to students at the outset of the term/semester. More than 88% alumni and students strongly agreed with the statement "Assessment procedures meet the objectives of the course" among which more than 30% are strongly agreed with the statement as shown in Figure 6.14 . Most of the faculty members also think same.

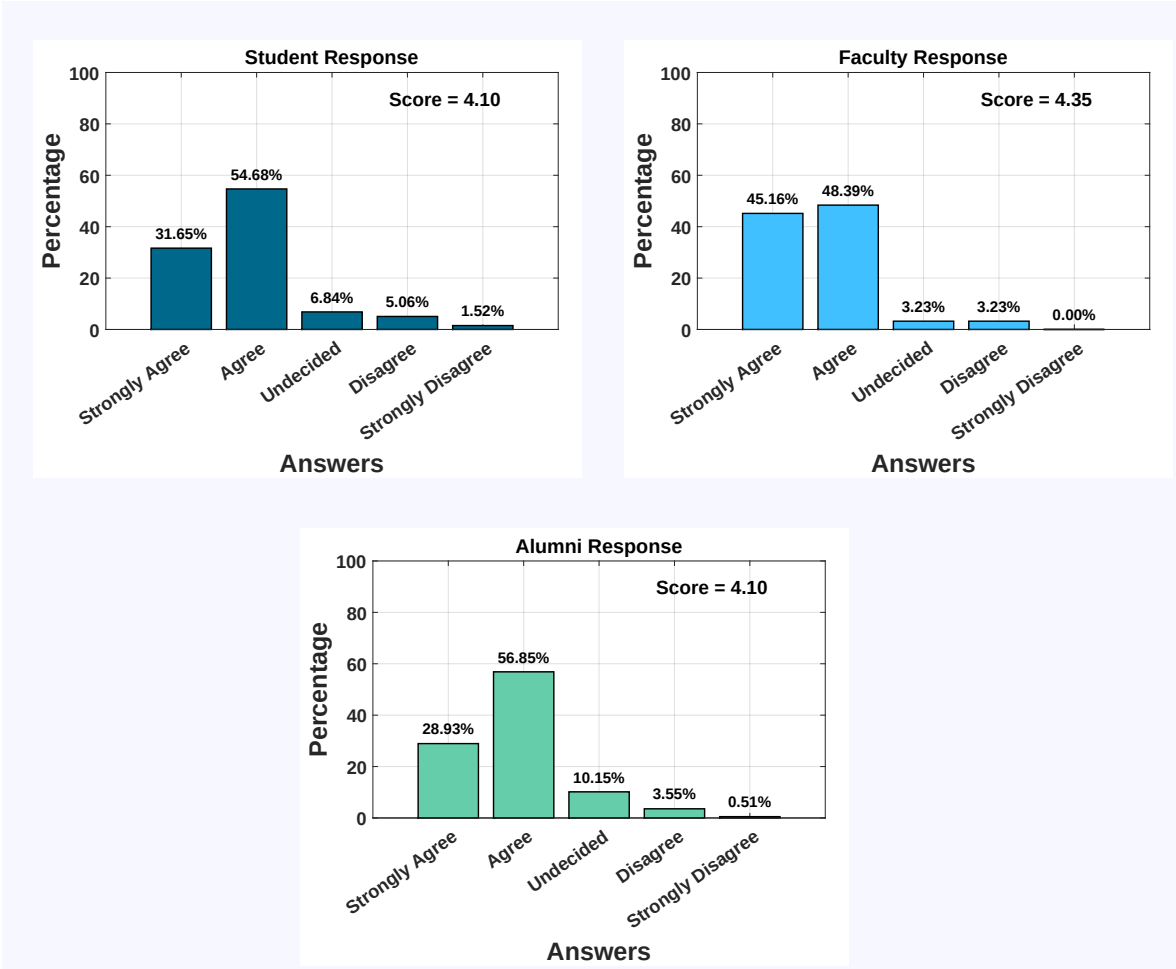
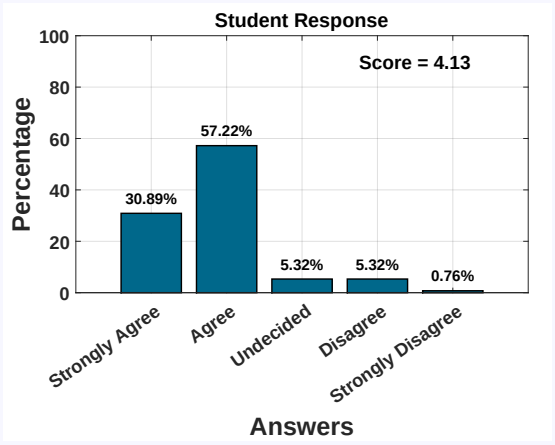
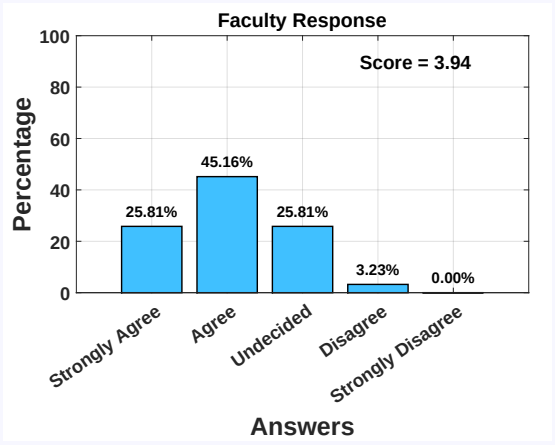


Figure 6.13: Response for the question 'Assessment systems are duly communicated to students at the outset of the term/semester.'

For the question "Response for the question 'Both formative (quizzes, assignments, term papers,continuous assessments, presentations etc.) and summative assessment (final examination)strategies are followed.'" about 90% of the respondents are agreed as seen in Fig 6.15, although around 16% of the faculties undecided.





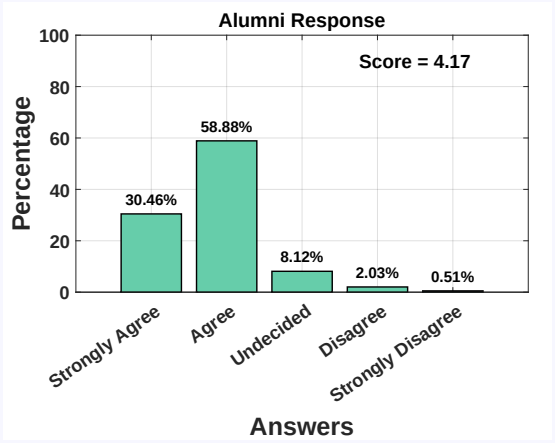
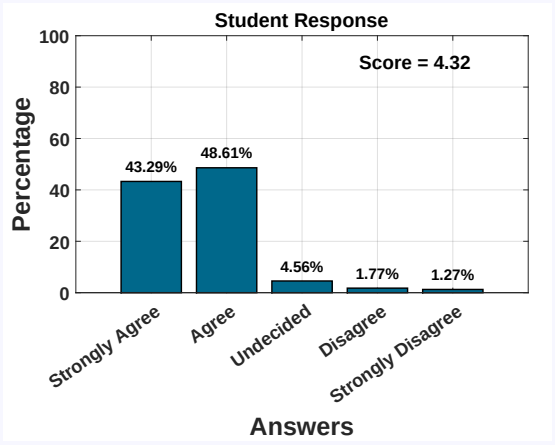


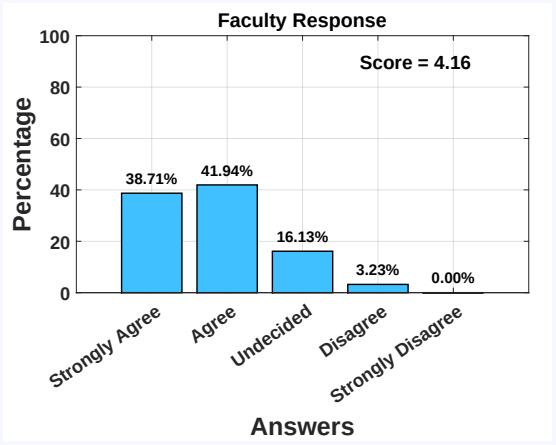
Figure 6.14: Response for the question 'Assessment procedures meet the objectives of the course.'

Similar trend is seen among all the stakeholders on the issue of diverse method are used for assessment as seen in Fig 6.16 however some faculties around 20% disagreed and 12% strongly disagreed on it. It is also worth mentioning that around 15% among all the stakeholders seemed to be undecided about this question.

After every assessment feedback should be given immediately, on this issue most of the alumni and students seems to agreed but noticeable amount (30%) of faculties are not sure about it and on top of it, around 12% disagreed as seen in Fig 6.17. 12% of the current students also disagreed on this issue.

No dominant opinion are found among the faculties on the issue of assessment are reviewed at regular intervals. Other than strongly disagree, other opinions waved around 20% as seen in Fig 6.18. On the other hand, most of the faculties strongly agreed on the issue of transparency





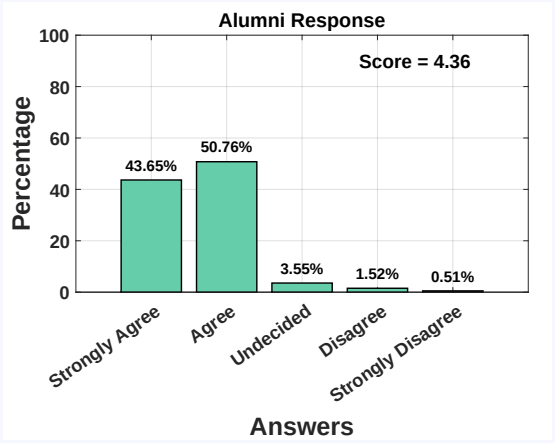
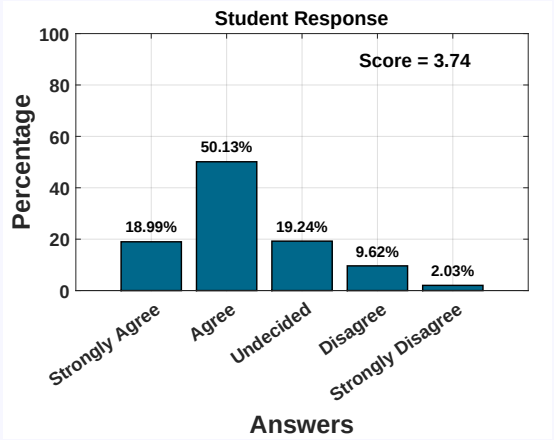
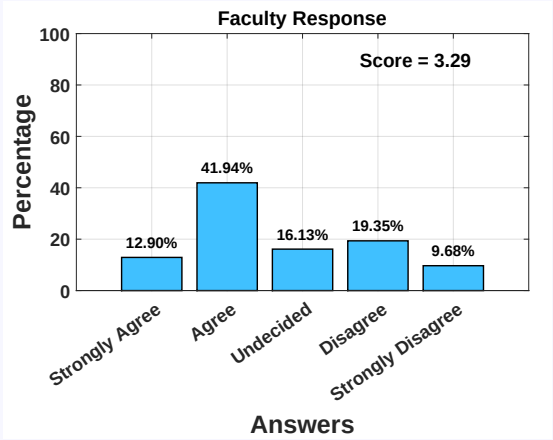


Figure 6.15: Response for the question 'Both formative (quizzes, assignments, term papers, continuous assessments, presentations etc.) and summative assessment (final examination) strategies are followed.'

and fairness of assessment system as seen in Figure 6.19.





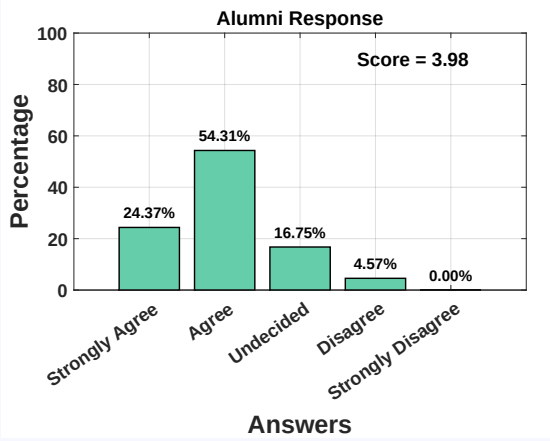
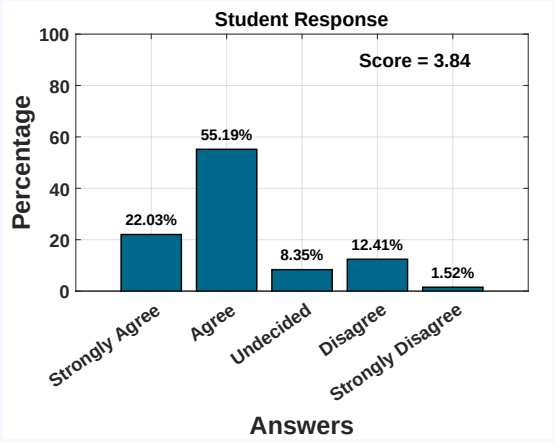
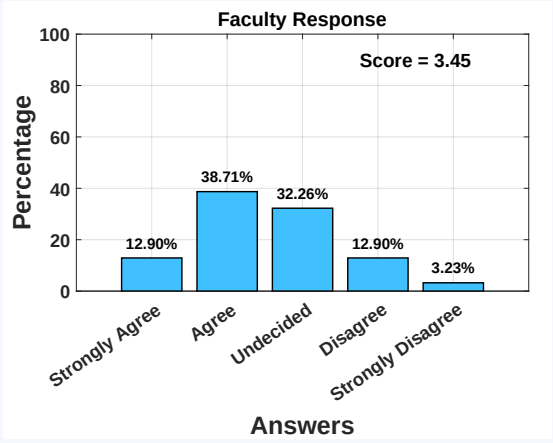


Figure 6.16: Response for the question 'Diverse methods are used for assessment'





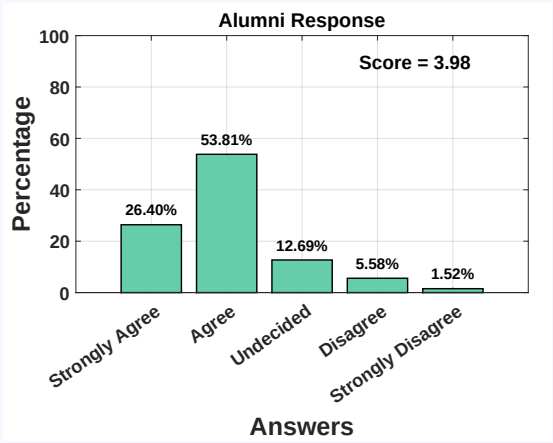


Figure 6.17: Response for the question 'The students are provided feedback immediately after assessment'

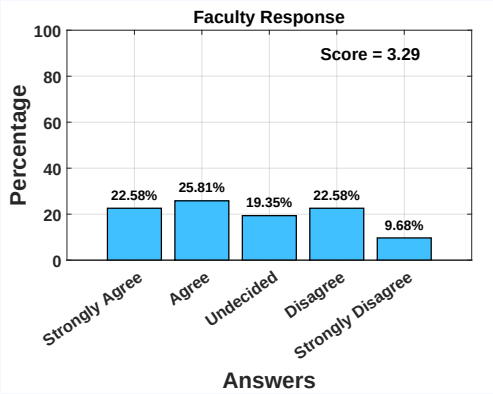


Figure 6.18: The assessment system is reviewed at regular intervals

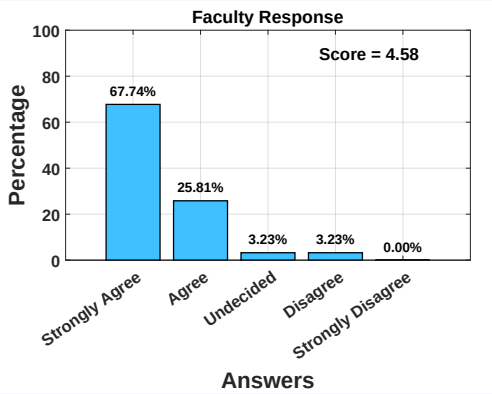
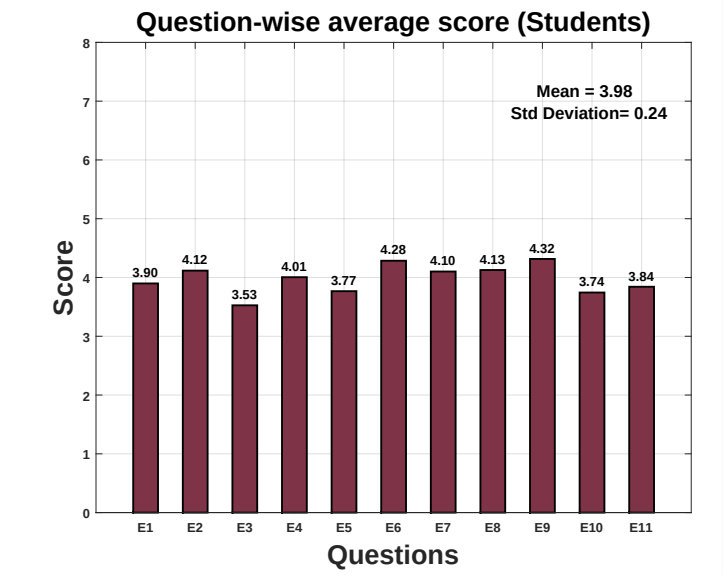
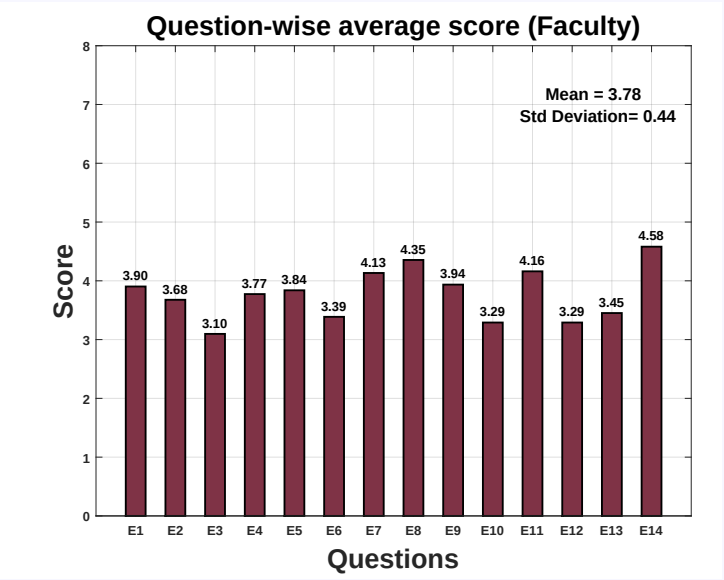


Figure 6.19: Fairness and transparency is maintained in assessment system



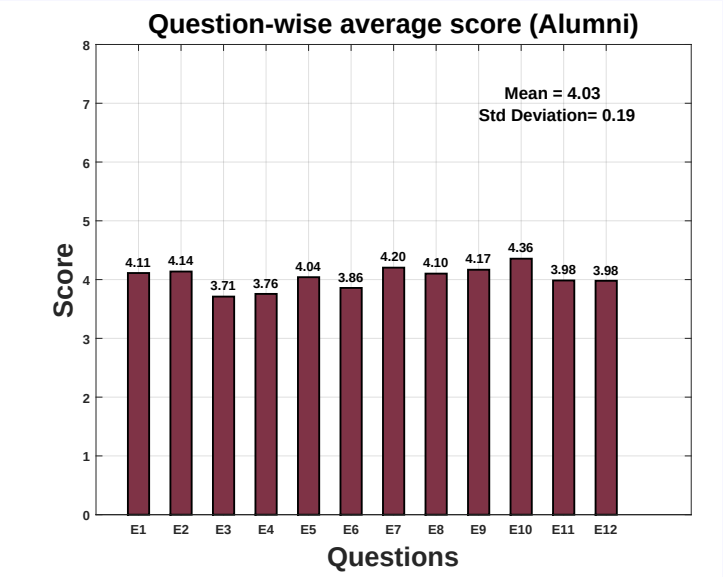
E1:	Teaching-learning is interactive and supportive
E2:	Class size is optimum for interactive teaching learning
E3:	Entity provides adequate opportunities for practical exercises to apply in real life situation
E4:	Modern devices are used to improve teaching-learning process
E5:	Diverse methods are practiced to achieve learning objectives
E6:	Lesson plans/course outlines are provided to the students in advance
E7:	Assessment systems are duly communicated to students at the outset of the term/semester
E8:	Assessment procedures meet the objectives of the course
E9:	Both formative (quizzes, assignments, term papers, continuous assessments, presentations etc.) and summative assessment (final examination) strategies are followed
E10:	Diverse methods are used for assessment
E11:	The students are provided feedback immediately after assessment

Figure 6.20: Response summary for Students



E1:	1.1. Teaching-learning is interactive and supportive
E2:	1.2. Class size is optimum for interactive teaching learning
E3:	Entity provides adequate opportunities for practical exercises to apply in real life situation
E4:	Teaching-learning process encompasses co-curricular activities to enrich students' personal development
E5:	Modern devices are used to improve teaching-learning process
E6:	Diverse methods are practiced to achieve learning objectives
E7:	Lesson plans/course outlines are provided to the students in advance
E8:	Assessment systems are duly communicated to students at the outset of the term/semester
E9:	Assessment procedures meet the objectives of the course
E10:	The assessment system is reviewed at regular intervals
E11:	Both formative (quizzes, assignments, term papers, continuous assessments, presentations etc.) and summative assessment (final examination) strategies are followed
E12:	Diverse methods are used for assessment
E13:	The students are provided feedback immediately after assessment
E13:	Fairness and transparency is maintained in assessment system

Figure 6.21: Response summary for Faculty



E1:	Teaching-learning is interactive and supportive
E2:	Class size is optimum for interactive teaching learning
E3:	Entity provides adequate opportunities for practical exercises to apply in real life situation
E4:	Students attained additional practical ideas apart from class room teaching
E5:	Modern devices are used to improve teaching-learning process
E6:	Diverse methods are practiced to achieve learning objectives
E7:	Lesson plans/course outlines are provided to the students in advance
E8:	Assessment systems are duly communicated to students at the outset of the term/semester
E9:	Assessment procedures meet the objectives of the course
E10:	Both formative (quizzes, assignments, term papers, continuous assessments, presentations etc.) and summative assessment (final examination) strategies are followed
E11:	Diverse methods are used for assessment
E12:	The students are provided feedback immediately after assessment

Figure 6.22: Response summary for Alumni

Chapter 7

Student Support Service

Self-assessment standards regarding *'Student Support Service'*:

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 6-1: Academic guidance and counseling should be formalized with proper documentation

Standard 6-2: Organization and Participation in co-curricular and extra-curricular activities should be recognized as an integral part of skill development mechanism and quality education

Standard 6-3: Co-curricular and Extra-curricular activities should be encouraged with reasonable time to participate.

Standard 6-4: Career counseling and activities relating to placement of graduates need to be done on a regular basis under the management of a permanent administrative setup.

Standard 6-5: The university and program offering entities should have well organized and meaningful alumni association to support the quality education efforts.

Standard 6-6: The university and program offering entities should have a formal system to collect alumni feedback on the effectiveness of academic programs, emerging changes in the industry and working life.

Standard 6-7: The university and program offering entities should organize programs relating to career guidance and university industry collaboration (UIC) with the active participation of alumni association

Standard 6-8: Students have the opportunity to involve themselves in community services under the management of the program offering entity in an organized manner on a regular basis

Student support service is a beneficial educational sub-system to assist the personal and academic needs of students. Academic and intellectual development, enhanced quality learning experience and educational success can be easily achieved with the support of this service. Student support services ease the building of student-level community through friendly and affable academic environment, socialization, collaborative efforts and student involvement. Generally, the facilities of student support services include the following.

7.1 Academic Guidance and Counseling

Electrical and Electronic Engineering (EEE) Discipline of UAP offers various facilities for academic guidance and counseling [Standard 6-1]. An adviser is assigned for each group of 40 students from the very first day of orientation in their undergraduate life for counseling about each semester course registration. Besides, any kind of application to authority including various tuition fee waiver applications has to be forwarded to next level through assigned adviser.

Moreover, there is a provision of theory and sessional course counseling for 3 and 2 hours, respectively in each week by the course teacher according to their free class schedule for the assigned course.

The DSW of UAP is now equipped with professionally trained counselor who has special expertise in working with university students in order to ensure their social and psychological well being. The goal of this service is to assist students in developing better emotional resilience to ensure proper life functioning. This service will be available for students, faculty and staffs. Further, this socio counseling center under DSW of UAP regularly arrange workshops related to dealing with exam stress, mental health and academic performance, counseling approach and many more.

During the self-assessment process, the stakeholders from Students, Alumni and Faculty category were asked different questions about several student support services. One of the questions regarding academic guidance and counseling in the survey was “There is an arrangement in the entity to provide an academic guidance and counseling development”. The second question about this was “Financial grants are available to the students in case of hardship”. Majority of the stakeholders from Students, Alumni and Faculty agreed with these.

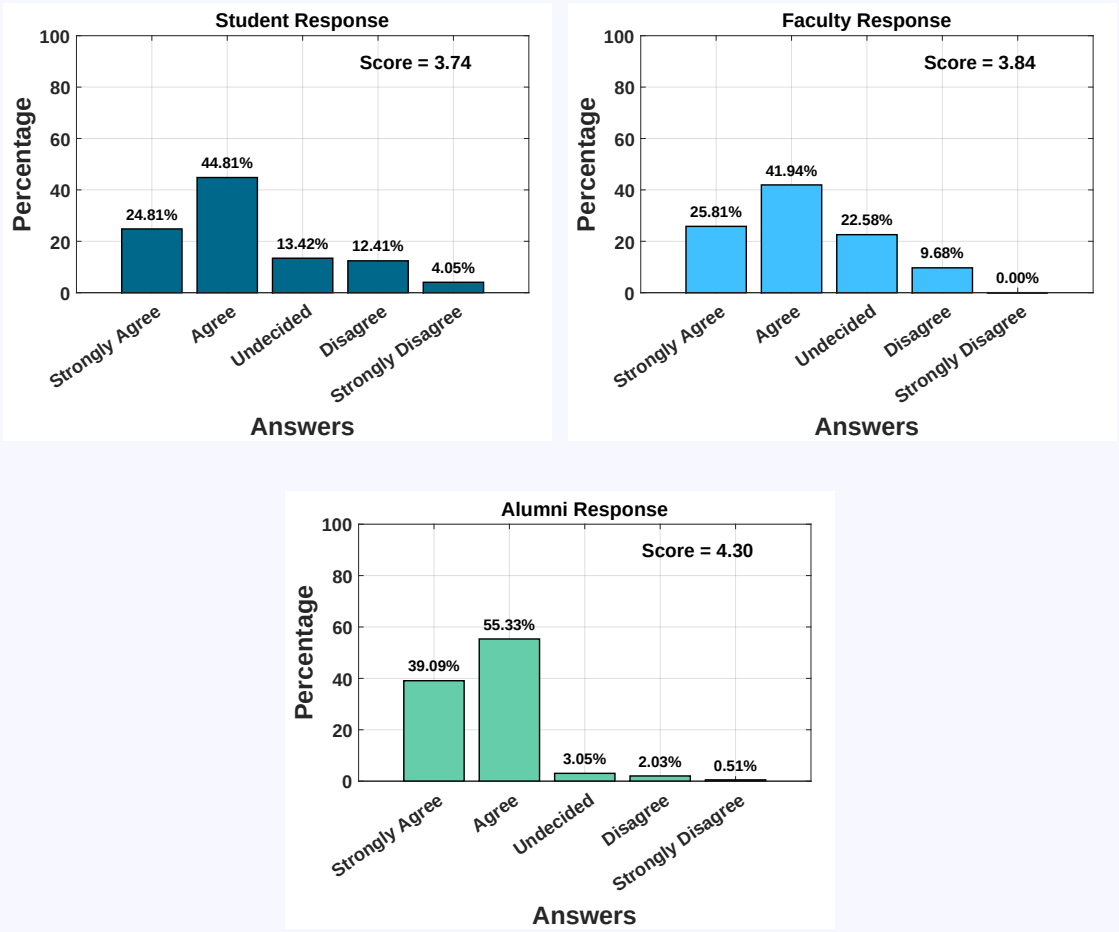


Figure 7.1: Response for the question 'There is an arrangement in the entity to provide an academic guidance and counseling development'

7.2 Co-curricular and Extra-curricular Activities

A variety of co-curricular activities are provided to the students. There are 17 Central Cubs, besides host of other clubs specific to each department [Standard 6-2]. Students are encouraged to become member of at least one club; however, there is no bar of a student becoming member of more than one club. DSW Office supervises and assists all Central Clubs, while Head of Depts supervises dept specific clubs. All Clubs have a Faculty Advisor and a students' committee that organizes various activities round the year.

Central Clubs

Central Clubs of UAP are: Cultural club, Drama Club, Literary Club, English Language Club, Football Club, Cricket Club, Basket Ball Club, Indoor Games Club, Public Speaking and Debating Club, Career Development Club, Social Awareness (Welfare) Club, Photography Club, Art

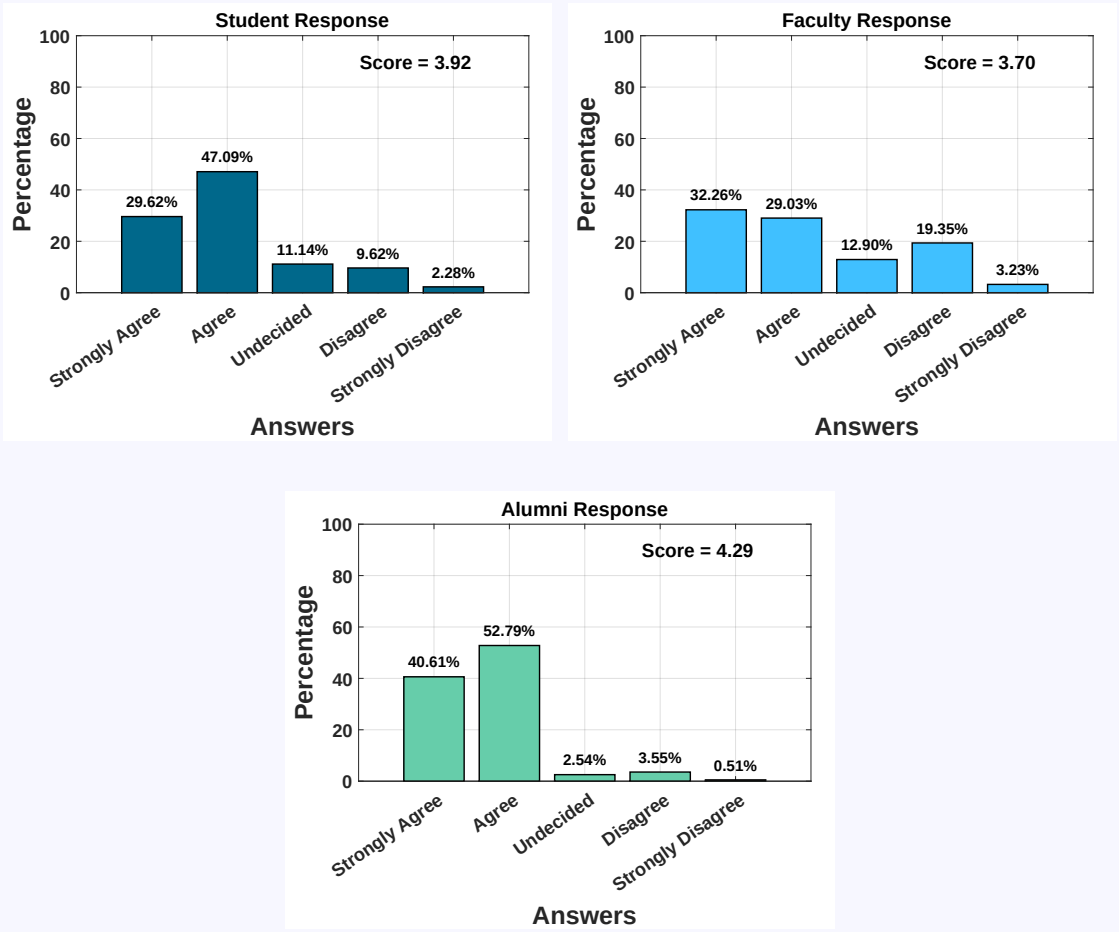


Figure 7.2: Response for the question 'Financial grants are available to the students in case of hardship'

and Painting Club, Adventure Club, Entrepreneur Club, Social Business Club and Film Club.

Departmental Clubs

Besides these 17 Central Clubs, there are more than a dozen department oriented clubs, such as Project Club of EEE, Programming Club, Hardware and Software Club and Robotics Club CSE, Moot Court of Law and HR, Structure Club, Geo-technical Club and Math Club of CE and Design Club, of Arch.

Activities of Students' Clubs [Standard 6-3]:

- Cultural programs, such as drama, celebration of national and international events such as PohelaBoishakh, International Mother Language Day, Independence Day, and Victory Day etc.
- Competitions in Debate, Public Speaking, Art, Music, Photography, etc.

- Outdoor and indoor games and sports, such as Cricket, Football and Table Tennis, etc.
- Community volunteer works, such as Voluntary Blood Donation Campaigns, Cleaning public places, environmental awareness programs etc.
- Seminars and workshops such as, Grooming session, Training session, symposia on formal writing and etiquette, workshops on interview techniques and corporate networking and book launching program.
- Club Fairs, Study Tours, Picnics etc

IEEE UAP Student Branch

IEEE UAP Student Branch in the university was formed on December, 2015. Currently it is having 54 active IEEE Student members, including 9 WIE AG Members. Here, one of the recent achievements is the approval of the petition of IEEE WIE AG in the Student Branch. UAP IEEE SB has currently an executive committee of Chair, Vice-chair, treasurer, secretary and publicity co-coordinator from students under the supervision of a faculty member as branch counselor.

Recent activities of IEEE UAP SB of the year 2016-2017 are:

- The most highlighted activity was "Project Exhibition 2017", which was organized with the collaboration of EEE UAP Project Club. Total 18 in-house projects from IoT & Assistive technology were displayed daylong in UAP Plaza.
- A daylong workshop on "Basic Arduino" was organized on May, 2017, in which around 60 students including IEEE members were given hands on training on Arduino.
- Another Highlighted event was 'Introductory PCB Design' jointly organized by UAP IEEE student branch and IEEE WIE affinity group, Bangladesh section.
- A day long industrial visit in Energypac Power Generation Ltd. at Savar was organized by IEEE UAP Student branch on May, 2017.
- Another event was a seminar on 'Smart Grid: Self-healing and Energy Efficient Power Grid' on April, 2017.
- A seminar on 'Data Center Technology and Career Counseling' on May, 2017
- A seminar on "A Brief History of Modern Cosmology" organized on December 2016
- A workshop on 'Writing Research Paper using LaTeX' in the department of EEE December, 2016

A complete list of seminar, workshops organized IEEE student branch is shown in Appendix F.5.

The stakeholders from Students, Alumni and Faculty categories were asked question regarding co-curricular and extra-curricular activities in the survey was "The entity provides co-curricular and extra-curricular exposures to the students". Again, majority of the stakeholders from Students, Alumni and Faculty agreed with these.

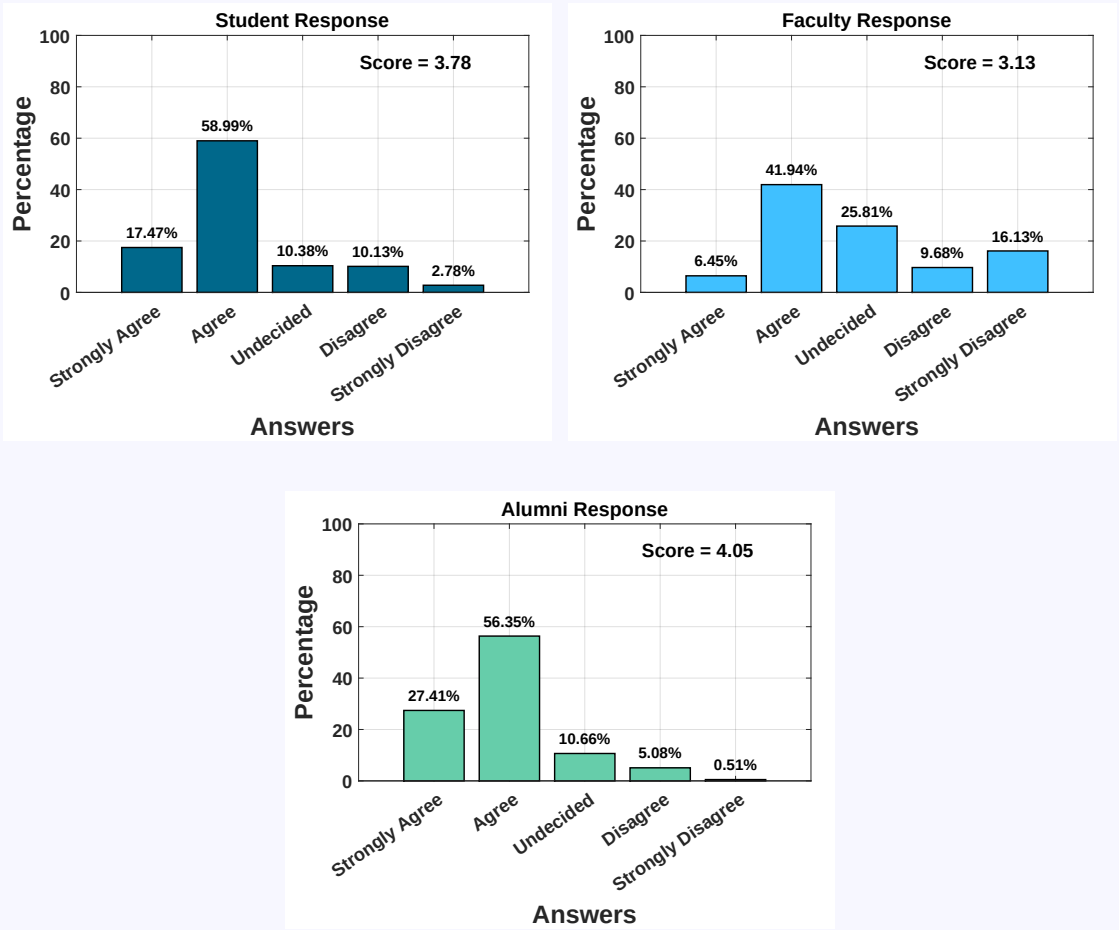


Figure 7.3: Response for the question 'The entity provides co-curricular and extra-curricular exposures to the students'

7.3 Career and Placement

Entrepreneurship and Career Development Club (ECDC) UAP arranges different workshops time to time like "The Job Market of Bangladesh (2015-2025)" , "News Media and Career in News Presentation" or "job market challenges: Where Do You Want to Go Tomorrow?" for career counseling and placement arranging for graduates and graduating students to get the right job and select suitable career [Standard 6-4].

7.4 Alumni Services

With an intention to create University industry collaboration (UIC) for promoting research and placement of the graduates, the department has built interaction with international technical assistance government agency like GIZ of West German and reputed international consulting organization like NRECA of USA [Standard 6-7]. Though, no official Alumni association is currently present for department of EEE, formal processing is going on to form the association. However, students can easily contact to alumni in any need through the faculty [Standard 6-5]. Alumni of department of EEE were invited to UAP in 10 years celebration of the department. In this self-assessment program, Alumni were one of the stakeholder groups in the survey and several meetings were held to take into account their suggestions about numerous sectors [Standard 6-6]. One of the questions in the survey regarding Alumni services was "There is an organized and supportive alumni association". Another question related to this field was "The entity collects alumni feedback to update the learning outcomes of the program". We can find some moderate response about these questionnaires from the stakeholders of Students, Alumni and Faculty.

7.5 Community Services

Students of EEE Discipline in UAP become engaged with various community services. In winter they collect warm clothes and distribute them to the poor of rural and remote area. In distress time of flood or any kind of natural calamity, they collect donation from the students, alumni, faculties and staff and help to give supports to the affected people [Standard 6-8]. Besides, every semester, Social Awareness Club (SAC) and Quantum Foundation jointly organize blood donation program. It is held on the presence of UAP medical officer where the hemoglobin test of the donors is done for the safety of the donor and to determine his/her eligibility to donate blood. In addition, first aid treatment is made available in such programs. The question in the survey related to community services was "There are opportunities to be involved with community services". The majority stakeholders had a positive response to this query.

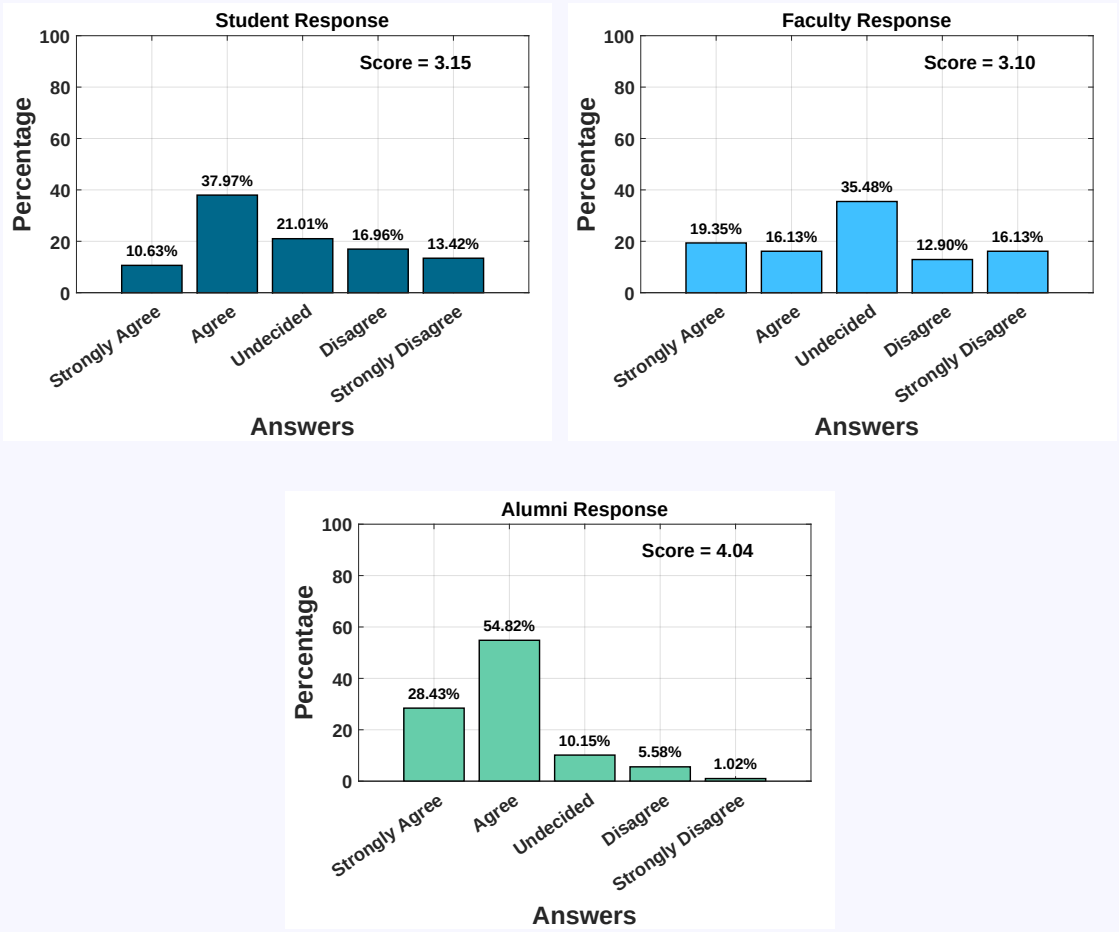
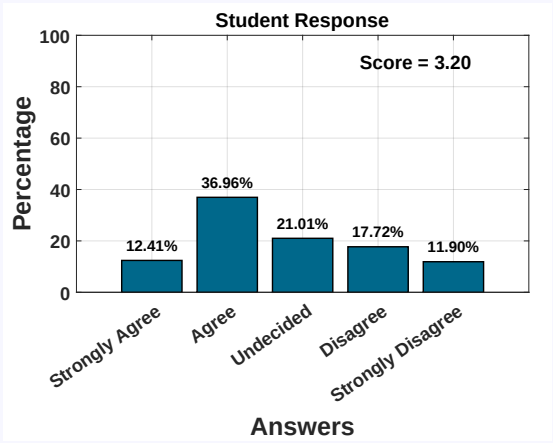
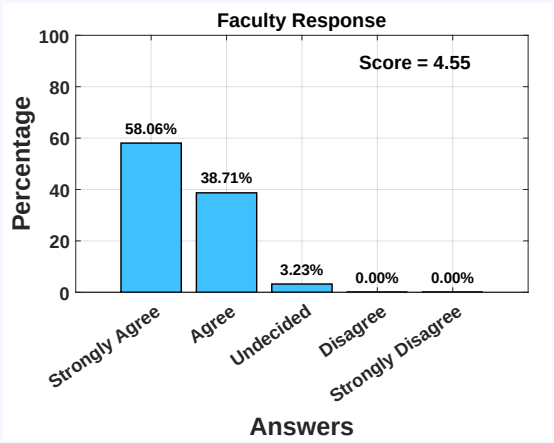


Figure 7.4: Response for the question 'There is an organized and supportive alumni association'

Considering the question-wise response and average score from Alumni, Faculty and Student stakeholders, it is found that there were highly positive feedback about the survey questions of available supports regarding academic guidance-counseling, financial grants and involvement in co-curricular, extra-curricular activities or community services. However, a moderate feedback response was found about alumni support which might be occurred for not having any official Alumni association in the University yet. University authority is currently working for solving the issue.





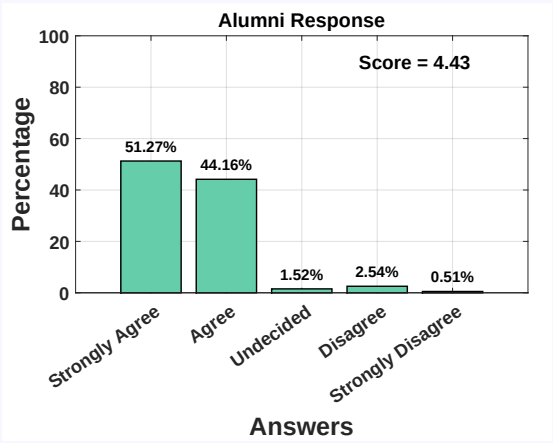


Figure 7.5: Response for the question 'The entity collects alumni feedback to update the learning outcomes of the program'

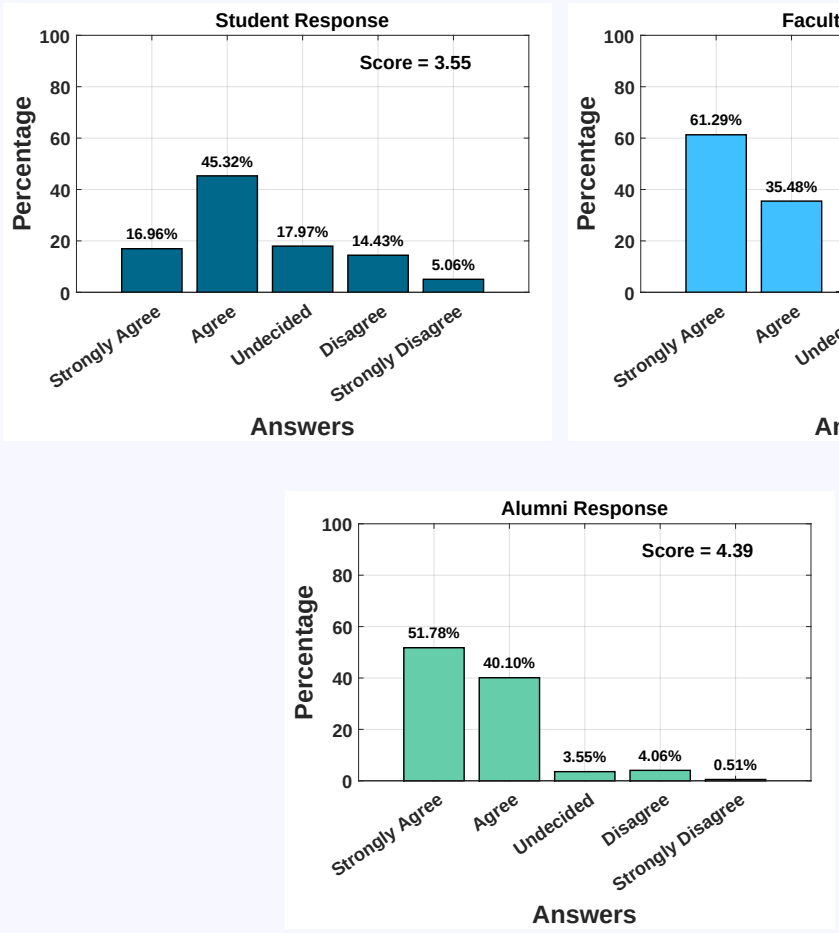
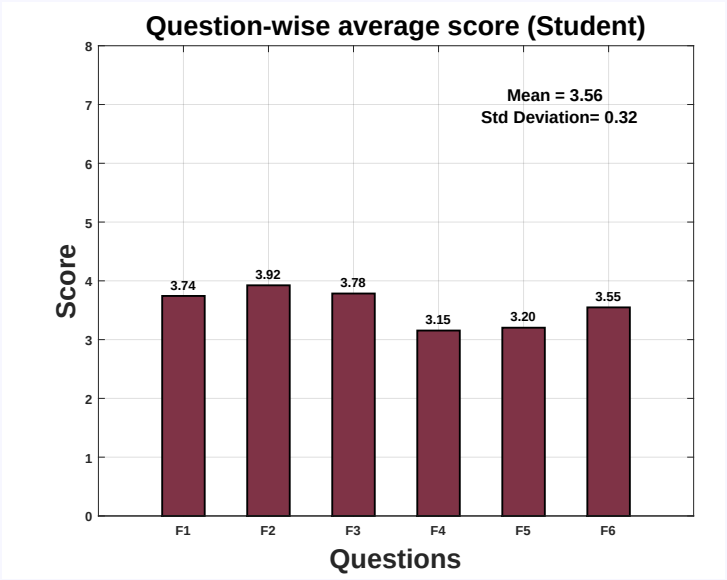


Figure 7.6: Response for the question 'There are opportunities to be involved with community services'



F1. There is an arrangement in the entity to provide an academic guidance and counseling development

F2. Financial grants are available to the students in case of hardship

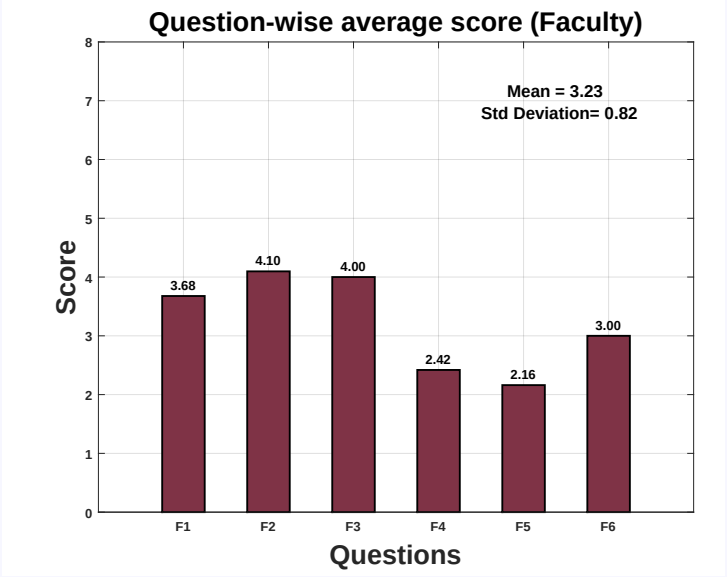
F3. The entity provides co-curricular and extra-curricular exposures to the students

F4. There is an organized and supportive alumni association

F5. The entity collects alumni feedback to update the learning outcomes of the program

F6. There are opportunities to be involved with community services

Figure 7.7: Response summary for Students



F1. There is an arrangement in the entity to provide an academic guidance and counseling development

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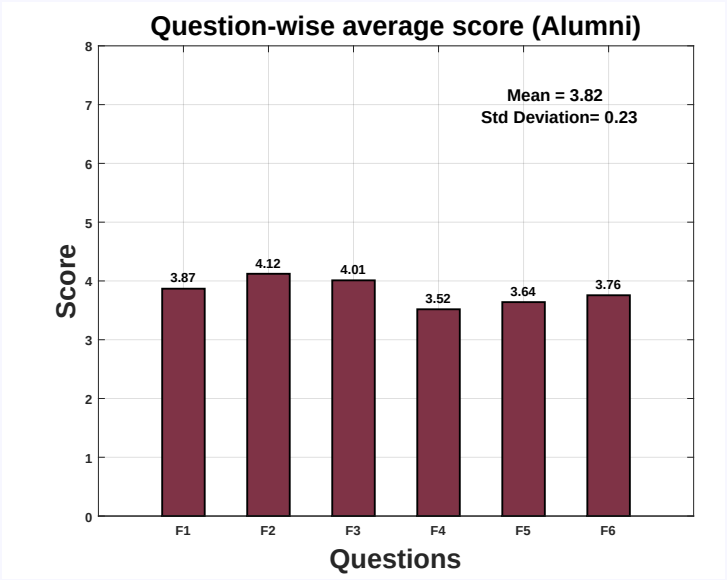
F4. There is an organized and supportive alumni association

F5. The entity collects alumni feedback to update the learning outcomes of the program

F6. There are opportunities to be involved with community services

Figure 7.8: Response summary for Faculty



F1. There is an arrangement in the entity to provide an academic guidance and counseling development

F2. Financial grants are available to the students in case of hardship

F3. The entity provides co-curricular and extra-curricular exposures to the students

F4. There is an organized and supportive alumni association

F5. The entity collects alumni feedback to update the learning outcomes of the program

F6. There are opportunities to be involved with community services

Figure 7.9: Response summary for Alumni

Seminar on Smart Grid

Workshop in Basic Arduino

Project Exhibition

Project Exhibition

Figure 7.10: Activities of IEEE student branch

Workshop on PCB design

Workshop on Android App Development

Industrial visit to EnergyPac

Seminar on LaTeX

Figure 7.11: Activities of IEEE student branch

Chapter 8

Staff and Facilities

Self-assessment standards regarding '*Staff and Facilities*':

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 7-1: Qualifications of all faculties must be sufficient to teach courses in their area of interest modify and update courses and curricula.

Standard 7-2: In order to select the right person for the right job university must have a transparent, fair, appropriate and properly documented recruitment policy specifying the entry qualifications and outlining the key stages for both academic and nonacademic staffs.

Standard 7-3: Salary and incentives should be reasonable to attractive and retain the talented and experienced staff members.

Standard 7-4: Academic staffs are working as a team with highest level commitment and sincerity.

Standard 7-5: Faculty is very serious and keen to enhance professional knowledge and skills through research and higher study leading to Ph.D degree.

Standard 7-6: University must have a well-organized and functioning staff development center.

Standard 7-7: All academic staff must have training or orientation for effective academic guidance and counseling

Standard 7-8: University must have comprehensive rules encouraging and supporting to the staff for career development

Standard 7-9: University must have provisions and enough facilities to allow and motivate academic staff for further training and development, higher study and advanced research.

Standard 7-10: Formal and documented peer observation is in practice.

One of the primary responsibilities of the academic and non-academic staffs of the university is to ensure that they have the necessary qualifications and commitment to either directly or indirectly involve in teaching and research works. Academic staffs are gaining knowledge through active research and transfer to the students through teaching learning practices. On the other hand non-academic staffs are involved with necessary depth and breadth to technical knowledge and experience to support the academic activities. To have an effective team composed of academic and non-academic staffs following areas are very critical. [standard-7-1]

8.1 Entry Qualifications

Academic Staff

1. (a) **Lecturer**: The candidate must possess CGPA-3.00 or a First class B.Sc. Engg. Degree or equivalent in relevant branch obtained from a recognized university/institution.

   (b) **Senior Lecturer**: The candidate must possess CGPA-3.00 or a First class B.Sc. Engg. Degree or equivalent in relevant branch obtained from recognized university/institution plus 2 years of teaching experience or 4 years of professional experience or M.Sc. with 1 year of teaching / 2 years of professional experience.

2. **Assistant Professor**: The candidate must possess CGPA-3.00 or a First class B.Sc. Engg. Degree or equivalent in relevant branch obtained from recognized university/institution plus 3 years of teaching experience or 6 years of professional experience or a combination of both with a minimum 1 year of teaching experience.

   Or

   The candidate must possess CGPA-3.00 or a First class B.Sc. Engg. Degree or equivalent in relevant branch obtained from recognized university/institution plus 3 years of service experience of which 1 year of teaching.

   Or

   The candidate must possess a First class B.Sc. Engg. Degree or equivalent in relevant branch and Ph.D. or equivalent degree in relevant discipline from a recognized university/institution. In this category selection board may recommend for additional increment(s) considering the number of publications and research of the candidate.

3. **Associate Professor**:The candidate must possess CGPA-3.00 or a First class B.Sc. Engg. Degree or equivalent and an M.Sc. Engg./M.Engg. or an equivalent degree in relevant branch from a recognized university/institution plus 8 years of teaching or 11 years of service experience of which, in both cases, at least 5 years of active teaching in the post of

Assistant professor.

Or

The candidate must possess CGPA-3.00 or a First class B.Sc. Engg. Degree or equivalent in relevant branch and Ph.D. or equivalent degree in relevant discipline from a recognized university/institution plus 7 years of teaching or 09 years of service experience of which, in both cases, at least 5 years of active teaching in the post of Assistant professor. All candidates must have at least 5 publications

4. **Professor**:The candidate must possess CGPA-3.00 or a First class B.Sc. Engg. Degree or equivalent in relevant branch and a Ph.D. or equivalent degree in relevant discipline from a recognized university/institution plus 11 years of teaching or 14 years of service experience of which, in both cases, at least 8 years of active teaching in the post of Assistant professor and/or above (of which at least 3 years must be in the post of Associate Professor). All candidates must have at least 10 publications

Non Academic Staff Qualifications (For Entire Institution)

Sl.	Name of the Post	Minimum Qualification and Experience
1	Registrar	(a) Minimum 2nd Class Master Degree. (b) No Third Class/Division at any level. (c) Dynamic, energetic, capable of working under pressure. (d) ability to provide administrative support to the Vice Chancellor and to the Board of Trustees (d) 15 years experience of which at least 5 years must be in a post of higher responsibility in administration. (e) Preference will be given to a person with experience in a University/ Govt. Education dept.
2	Controller of Examinations	(a) Minimum 2nd Class Master Degree. (b) No Third class/Div. at any level. (c) Ability to run offices, maintain records and files, and produce quality staff work. (d) At least 10 years experience in private/public universities in similar positions.

		(e) Preference will be given to a person with experience of conducting University examinations. (f) Computer literacy and good command over English are essential.
3	Director (Finance and Accounts)	(a) CA or CMA with 10 years of experience. (b) Minimum 2nd class Master Degree in Finance/Accounting/Economics with 15 years? experience of which at least 5 years must be in a post of higher responsibility in Accounts/Finance. (c) No Third class/Div. at any level.
4	Director (Planning and Dev.)	(a) Minimum 2nd class Master Degree in Economics or Statistics. (b) No Third Class/Div. at any level. (c) 15 years experience of which at least 5 years must be in a post of higher responsibility in development and planning. Preference will be given to a person having Master Degree in planning and development with experience in University Planning and Development.
5	Librarian	(a) Minimum 2nd class Master Degree in Library Science. (b) No Third class/Div. at any level. (c) 15 years experience of which at least 5 years must be in a post of higher responsibility in library works.
6	IT Manager	(a) Candidates must have B. Sc. Degree in CSE / ICT. (b) No Third class /Division at any level. (c) At least 5 years of relevant experience in similar position in any reputed institute/organization.

		(d) good command over English language and computer proficiency in Word processing (English and Bangla) and Database management, graphics, network management and website development
7	Deputy Registrar	(a) At least 2nd class Master Degree. (b) No Third class /Division at any level. (c) 10 years experience of which at least 5 years must be in a post of higher responsibility in administration. Preference will be given to candidates having experience in University or research organization.
8	University Engineer (Civil)	(a) Bachelor Degree in Civil Engineering (b) At least 10 (ten) years experience including maintenance of multistoried building.
9	Web Administrator / Software support Engineer	(a) Must have B. Sc. In CSE / ICT degree (b) At least 3 (three) years practical experience in Software support and web administration in any private university having string knowledge in Education management system, administration, support and maintenance, Website design, Database management and development etc. and good command over English language. (c) The applicants having experience in Web Designer, UI/UX Designer will be considered as added advantage.
10	Deputy Controller of Examinations	(a) At least 2nd class Master Degree. (b) No Third class /Division at any level.

		(c) 10 years? experience of which at least 5 years must be in a post of higher responsibility in conducting University examinations.
11	Deputy Director (Finance and Accounts)	(a) CA/CMA with 5 years experience. (b) At least 2nd class Master Degree in Finance/Accounting/Commerce/Economics. (c) No Third Class/Division at any level. (d) 10 years experience of which at least 5 years must be in a post of higher responsibility in Finance and Accounts.
12	Deputy Director (Planning and Development)	(a) At least 2nd class Master Degree in Economics or Statistics. (b) No Third class /Division at any level. (c) 10 years experience of which at least 5 years must be in a post of higher responsibility in Development and Planning. Preference will be given to persons having master in physical planning or experience in University Planning and Development.
13	Deputy Librarian	(a) Minimum 2nd class Master Degree in Library and Information Science. (b) No Third class /Division at any level. (c) 2 years relevant experience and 3 years as Assistant Librarian in University. (d) Must have good command over English language and computer proficiency in Word processing Familiarity with automated Library Management System and Cataloging Software is essential.
14	Deputy IT Manager	(a) Candidates must have Master Degree in IT related subject. (b) No Third class /Division at any level. (c) 10 years experience in similar position in any reputed Institute/organization.
15	Assistant Registrar	(a) At least 2nd class Master Degree. (b) No Third class /Division at any level.

		(c) 5 years experience in relevant or allied field will be preferred.
16	Assistant Controller of Examinations	(a) At least 2nd class Master Degree. (b) No Third class /Division at any level. (c) 5 years experience in relevant or allied field will be preferred.
17	Assistant Director (Finance and Accounts)	(a) At least 2nd class Master Degree in Finance /Accounting/Management/Economics (b) No Third class /Division at any level. (c) 5 years experience in Finance and Accounts will be preferred. For persons having C.A. the experience may be relaxed to 2 years.
18	Assistant Director (Planning and Development)	(a) At least 2nd class Master Degree in Economics or Statistics. (b) No Third class /Division at any level. (c) 5 years experience in relevant or allied field will be preferred.
19	Socio Counselor(Directorate of Students Welfare)	(a) Must have Master?s Degree in Counseling Psychology. (b) At least 3 (three) years experience with proven leadership skills and an ability to work under pressure. (c) Excellent communication and IT skills: working experience in any Private University will be an added advantage.
20	Assistant Librarian	(a) At least 2nd class Master Degree in Library Science. (b) No Third class /Division at any level. (c) 5 years experience in relevant or allied field will be preferred.
21	Assistant IT System Administrator/ Assistant System Engineer	(a) Minimum Bachelor Degree in Computer Science/Computer Science and Engineering/Electrical Engineering or Equivalent degree and Diploma in IT from any reputed IT Institution.

		(b) No Third class /Division at any level. (c) Preference will be given to candidates with experience in the relevant field.
22	Assistant Accounts Officer	(a) Minimum 2nd class Master Degree in Accounting. (b) No Third class /Division at any level. (c) 2 years experience in the relevant field will be preferred. (d) For candidates with long experience conditions may be relaxed.
23	Admission Officer/Counselor	(a) Minimum 2nd class Master Degree in any discipline or equivalent. (b) No Third class /Division at any level. (c) Candidates should have special quality for motivation.
24	Private Secretary to Vice-Chancellor/ Sr. Sec. Officer	(a) At least 2nd class Master Degree or 2nd class Bachelor Degree with 5 years experience in Secretarial job. (b) No Third class /Division at any level. (c)Preference will be given to a candidate having Diploma/Certificate in Secretarial Science.
25	Executive (Administration)	(a) At least 2nd class Master Degree. (b) No Third class /Division at any level. (c) Preference will be given to a candidate having experience in University administration.
26	Executive (Finance and Accounts)	(a) At least 2nd class Master Degree in Accounting / Finance. (b) No Third class will be eligible. (c) 2 years experience in a similar position.
27	Senior Administrative Officer	(a) Minimum 2nd class Master Degree preferably with Honors from any University in any discipline.

		(b) No Third class /Division at any level. (c) 5 years experience in a responsible position in any reputed institute/organization.
28	Administrative Officer	(a) Minimum 2nd class Master Degree. (b) No Third class /Division at any level. (c) 2 years experience in similar position in any reputed organization. (d) Must have full command over English Language and computer proficiency in word processing (English and Bangla) and Database management.
29	Career Services Office	(a) Must have a relevant Master's Degree (b) At least two first divisions or classes in SSC/ HSC, Bachelor/Masters (c) At least 5 (five) years experience with proven leadership skills and an ability to work under pressure. (d) Excellent communication and IT skills; working experience in any Private University will be an added advantage.
30	Network Engineer/Network Support Engineer	(a) Must have B. Sc. In CSE / ICT degree (b) At least 3 (three) years practical experience in Network and System support in any private university having strong knowledge in hardware, OS, Switch, Router, Wifi, Software, Database management, network management etc. and good command over English language. (c) Vendor certification will be considered as added advantage.
31	Assistant Engineering (Civil)	(a) Bachelor Degree in Civil Engineering or Diploma in Civil Engineering (b) At least 4 (four) years experience including maintenance of multistoried building.
32	Sub Assistant Engineer (Electro-Mechanical)	(a) Diploma in Electrical/ Mechanical Engineering

		(b) At least 4 (four) years relevant experience including maintenance of multistoried building.
33	Account Assistant	Masters in Account/ Finance or related subject.
34	Assistant Administrative Officer	(a) Must have Master?s degree (b) At least two years relevant experience and having good command over English language and computer proficiency in Word processing (English and Bangla) and Database management.
35	Sr. Section Officer	(a) At least 2nd class Master Degree. (b) No Third class /Division at any level. (c) 3 years experience in relevant field.
36	Sr. Finance and Accounts Officer	(a) At least 2nd class Master Degree Finance/Accounting/Management/Economics. (b) No Third class /Division at any level. (c) 3 years experience in Finance and Accounts.
37	Medical Officer	(a) MBBS Degree with registration of practice in the field. (b) No Third class /Division at any level. (c) 3 years experience in the field.
38	Public Relations Officer (PRO)	(a) At least 2nd class Master Degree preferably in public administration or 2nd class Bachelor Degree. (b) No Third class /Division at any level. (c) 3 years experience in the relevant or allied field. (d) A highly social and friendly person with good communication skill in both English and Bangla.
39	Junior Officer/ Sr Assistant/ Computer Operator/ Information Officer/Receptionist.	(a) At least 2nd class Master Degree in any discipline

40	Lab Technician	(b) No Third class /Division at any level. (c) Diploma in Computer Science for the post of Computer Operator. (a) At least First class in Diploma Engineering in relevant branch. (b) 5 years experience in the relevant/allied field.
41	Foreman (Electro-mechanical)	(a) HSC (Science), Trade Course in relevant field (b) at least 4 (four) years relevant experience.
42	Faculty Assistant	Minimum 2nd class Bachelor/ Master Degree in any discipline.
43	Pesh Imam	Sufficient experience in the field.
44	Accounts Assistant/ Cashier	(a) Commerce Graduate with 5 years experience in the relevant or allied field.
45	L.D. Assistant/ Lab. /Library Assistant	(a) Graduate with one year experience and H.S.C with 3 years? experience in the relevant or allied field.
46	Information Support Assistant	(a) Bachelor Degree (b) Must have good command over English language and computer proficiency in Word processing, and good communication ability.
47	Driver/Caretaker/ Electrician/Staff Supervisor	(a) S.S.C with 3 years experience in the relevant or allied field.
48	Sorter/Messenger Peon/ Attendant/Photocopier operator/Telephone operator	(a) Minimum SSC.
49	Laboratory attendant	HSC (Science), Trade Course in relevant field will be preferred.
50	Peon/Mali/Cleaner/ Security Guard	(a) Minimum SSC for Peons only. (b) Class VIII Pass for others.
51	Plumber	(a) SSC (Science), Trade Course in relevant field

		(b) At least 5 (five) years relevant experience Educational qualification may be relaxed in case of experienced applicants.

8.2 Recruitment [Standard 7-2]

Academic Staff

i. The procedure for recruiting Lecturers and Assistant Professor is described below:

   Advertisement of available faculty openings for new Lecturers and Assistant Professor is published in the University web-page and local newspapers. The applicants are requested to provide complete application forms (Application format available in UAP website), along with photocopies of official transcripts/degrees, list of publications, especially those published in the refereed professional journals and their teaching experience. Then a scrutiny committee (Checks their applied form and qualified candidates are then called for interview. Applicants are selected on a merit basis after conducting their personal interviews with the Selection Board consisting of Vice-Chancellor, all Deans, respective Head and external members. The selection is then approved by the syndicate.

ii. The procedure for recruiting Associate Professor and Professor is described below:

   Advertisement of available faculty openings for Associate Professor and Professor is published in the University web-page and local newspapers. The applicants are requested to provide complete application forms (Application format available in UAP website), along with photocopies of official transcripts/degrees, list of publications, especially those published in the refereed professional journals and their teaching experience. Then a selection board consisting of Vice-Chancellor perform the initial scrutiny. Then the documents of the qualified candidates are then sent to three external experts. Based on the comments of the referee, the selection board makes final recommendations of suitable candidates, which has to be approved by the syndicate

Non-academic Staff

The procedure for recruiting Non-academic Staff is described below:

Advertisement of available openings for Non-academic Staff is published in the University web-page and local newspapers. The applicants are requested to provide complete application

forms (Application format available in UAP website), along with photocopies of official transcripts/degrees and their job experience (if any). Then a scrutiny committee checks their applied form and offer to attend the written exam (Except as senior administrative positions). After that a short list is made to call them for interview. This committee members recommend selected candidates for the approval of syndicate. Then this selected candidate is nominated by the Vice-Chancellor. 1st class officer are selected after conducting their personal interviews with the selection board consisting of Vice-Chancellor, all Deans, respective Head/Director and external members. The selected candidates are then approved by the syndicate.

Stakeholders' View

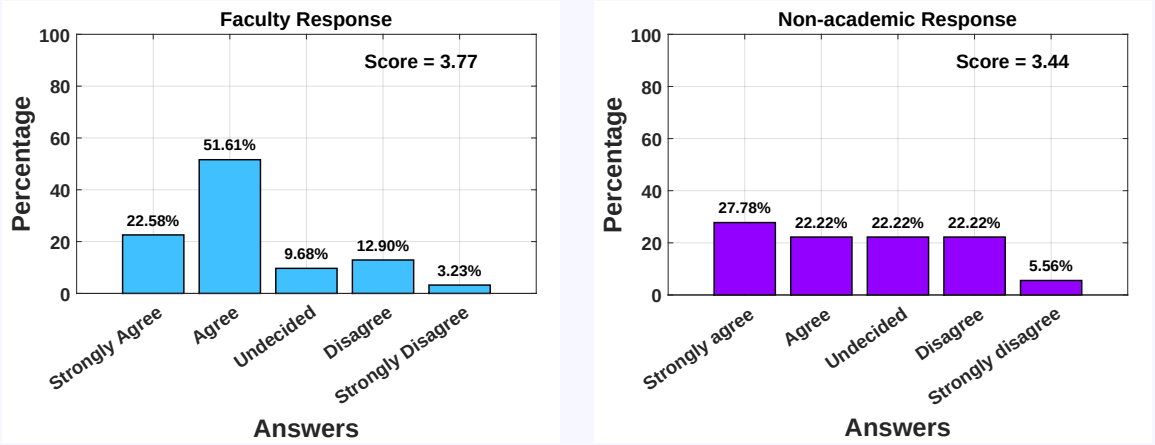


Figure 8.1: Response for the question 'Response of stakeholders to questions related to standard 7-2.'

From this above two response of two different stakeholders the question was "Recruitment policy and practices are good enough for recruitment of competent academic and non-academic". we can see that from their response they agree the recruitment policy of UAP is well defined, fair enough and clearly specify the entry qualifications for recruitment of academic and non-academic staffs

8.3 Salary

The University revises salary of academic and nonacademic staffs to maintain it at an attractive level.

8.4 Bonus

Academic and non-academic staffs receive two festival bonuses in a year.

8.5 Provident Fund

All permanent employees of the University Of Asia Pacific (UAP) get the benefit of Provident Fund subject to the provision of PF rules.Contributory provident fund. Both employer and employee will contribute at 5% of basic pay. To qualify for employer's portion at least two years contribution will be required [Standard 7.3].

8.6 Gratuity

1. Less than 5 years of service – No gratuity
2. 5 completed years of service or more -
    i. For first 5 yrs. - 50% of one month's last drawn basic pay for each year.
    ii. For next 3 yrs. - 75% of one month's last drawn basic pay for each year.
    iii. For next 2 yrs. - 100% of one month's last drawn basic pay for each year.
3. Effective from 01 07-04. No service rendered. Before that date will be counted for gratuity

8.7 Leave Rules

*Those who have availed of no leave upto 30-06-2003 will be deemed to have accumulated leave upto that date to the extent of 28 days @ 14 days each completed year of service. Those who have availed of leave of less than 28 days upto 30-06-2003 then the period of leave enjoyed will be deducted from the leave that falls due to him @ 14 days each completed year of service, maximum.28 days. upto that date and [the balance, if any will be credited in his leave account. If the leave-enjoyed upto 30-06-2003 is more than 28 days, then the matter will be ignored.

** Study Leave will be entitled to a full time faculty serving the UAP for not less than 1 year. Study Leave will imply no break in study during leave period.

*** A female employee serving the UAP for not less than 1 year will be entitled to maternity leave. This leave can be granted to an employee for a maximum of 2 occasions at two years interval during the entire service life in the UAP.

SI. No.	Name of Leave	Description
1.	Casual Leave	10 days in a calendar year. Not exceeding 3 days at a time. This leave will not accumulate.
2.	*Earned Leave (EL)	14 days per full year of service. Accumulation: 45 days (max)
3.	Sick Leave	Included in Earned Leave
4.	Duty Leave	The duration of leave will be determined by the sanctioning authority on the basis of the mode of job.
5.	**Study Leave	Maximum 5 years (2 years for M.Sc. /MS/M.Phill. & 3 years for Ph.D.). 25% of the last drawn basic Pay will be paid for total duration of leave which will be subject to joining at the continuation of active teaching of not less than 2 years of the total active teaching of 5 years at UAP. Total amount of 25% will be paid as per the following procedure. 1. 25% of the amount will be paid in the first month of joining. 2. Rest 75% will be paid in equal monthly installments during the next 2 years.
6.	***Maternity Leave	60 days with full pay and 30 days without pay.

1. Weekly and public holidays can be prefixed or suffixed or both with Casual Leave/ Earned Leave/Maternity Leave.

2. Period of study leave will not be counted as service in the UAP for the purpose of annual increment, provident fund and gratuity. Period of extra-ordinary leave (leave without pay) will not be counted as service in the UAP for any purpose. Service in the UAP will mean service in any post in the UAP.

3. Every full time faculty will retire from the UAP from his/her 65"1 birth-day. After retirement the UAP may employ him/her on contract for a further period of 2 years (maximum) on negotiated fixed remuneration with approval of Board of Governors, depending on his/her health conditions and the needs of the UAP.

Stakeholders' View

Both of the stakeholder may be think the answer of question "Salary and incentives are attractive enough to retain the academic and non-academic staff" is not good enough. May be stakeholder think that the standards of UAP compare to others private educational institution or equivalent positions with same educational qualification get better Salary and incentives.

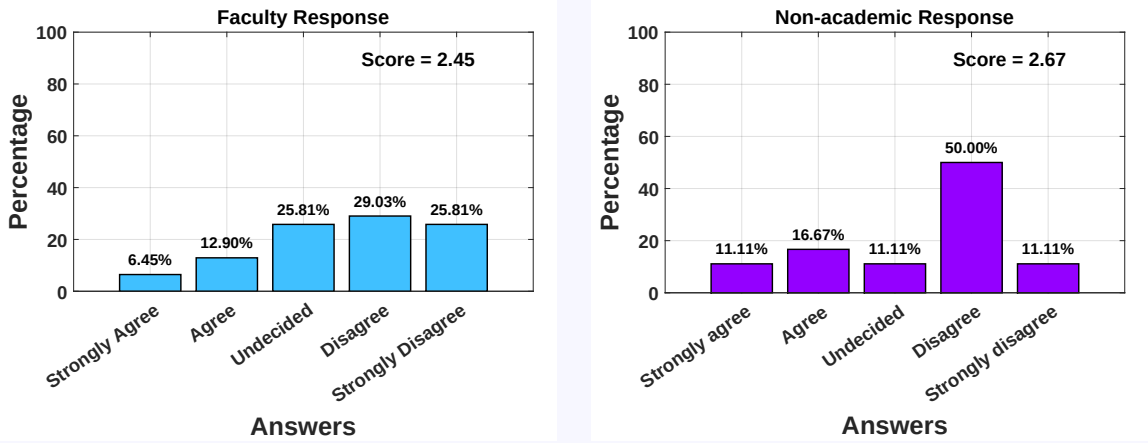


Figure 8.2: Response for the question 'Response of stakeholders to questions related to standard 7-3.'

8.8 Academic Staff Development

UAP maintains a number of systematic faculty development programs as follows:

- Improving Learning and Teaching Skills (ILTS): Since Spring-2017, UAP launched a 30 hours long program divided in 10 classes in each semester for improving proficiency of faculty members of UAP. Faculty members from each Department of UAP including EEE Department participate this special and comprehensive training session on 'Teaching Pedagogy'. This program addresses different aspects of teaching-learning process through which a faculty member can improve his/her performance as a teacher.[standard 7-4]

- Evaluation of Faculty members by Students: To improve the quality of teaching, students have the opportunity to evaluate the faculty members taking their class in different semesters. This evaluation is done though online automation system and the admit card of a student is not issued unless he/she fills the evaluation through online. The evaluation form contains a number of points that addresses student's feedback regarding different aspects of the teacher as well as the course he taught. Evaluated forms of each faculty members are sent to Head of the Department and the respective teacher so as to identify his strength or weakness. If the evaluation of a faculty member is repeatedly found poor then he/she is advised to improve himself or to take another course. Poor evaluation may also results zero yearly increment of a faculty member.[standard 7-4]

- Study Leave with Payment: Study leave rule of UAP is favorable for faculty members. As a result, they go abroad to take higher degrees and come back again in the Department, thereby increase the number of faculty members with higher degrees. Upon joining after

study leave, he or she will get a percentage of the remuneration of each month during the period of study leave. In last 5 years, a number of faculty members has come back to their respective Departments and are serving it after completing their higher studies in foreign Universities and hence, enriched the Department.[standard 7-5]

- Condition for Yearly Increment of faculty members: In UAP, yearly increment of faculty members is not a natural process. Faculty members ranked from Assistant Professor to Professor (Except Lecturer) won't get their respective yearly increment unless they publish at least one paper in a peer reviewed journal or conference within last one year. Apparently this rule seems to be unfavorable for the faculty members as it truly bars their scheduled yearly increment if they fail to publish a paper within the period. But, indirectly it enhances the overall number of publications by the faculty members as no one likes to be deprived from his due yearly increment.

- Institute of Energy, Environment, Research and Development (IEERD): This institute funds the faculty members and students in their innovative projects inside or outside UAP, bears the cost of publication fee of papers in peer reviewed Journals and Registration fee for attending or presenting paper in recognized conferences. Thus, this institute facilitates the research activities in UAP and helps improving faculty members' quality. Recently, IEERD has increased its budget to enhance the research initiatives.[standard 7-6],[standard 7-7], [standard 7-8]

Professional development programs for supporting staffs: For staff development, UAP pays 50% of the total cost in attending workshop and short course. [standard 7-9]

8.9 Peer Observation

Peer observation is an effective approach to get useful insights to improve teaching capacity and quality. In some cases it is very difficult to identify one's Own mistakes and limitations. In that case, peer observation provides an opportunity to learn from each other and to improve. Peer observation also helps experienced staffs to share the good practices with the new and relatively less experienced staff members. Such provision of mentoring is very effective to develop the professional skills of young and newly recruited staff. Peer observation means a process in which a colleague or other nominated individual is invited to observe one's class or way of doing a particular job and give feedback. Peer observation is a powerful tool for developing a culture of good practice. However, in our institution peer observation is not in practice. [standard 7-10]

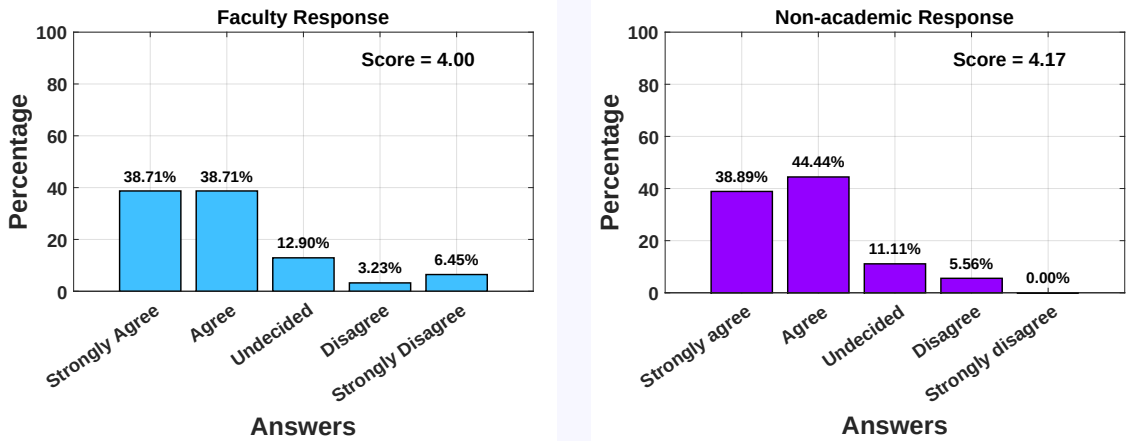


Figure 8.3: Response for the question 'Good team spirit exists among different academic staff'

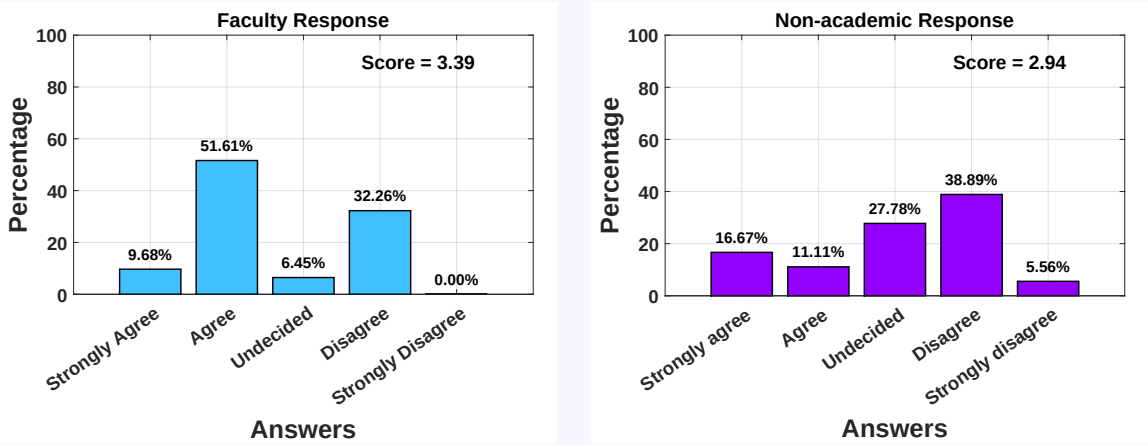


Figure 8.4: Response for the question 'A congenial atmosphere prevails to enhance professional knowledge through research and higher studies'

Stakeholders' View

Survey reports indicate that the faculty and non-academic staff in the department think that the recruitment policy for both academic and non-academic staff is conducive to hiring competent candidates. But maybe they have some argument about the salary and incentive. The agree Good team spirit exists among different academic staff in this institution. Almost 40% (figure 8.3) both of the stakeholders agree with this and here the score is 4.0 or more than 4.0. The research facilities, higher studies facilities and different training or workshop program is partially good from this entity but the non-academics stakeholder may be not agree with training or workshop program based on non-academic staffs (figure 8.4 -8.6). From figure 8.7 see that the stakeholder

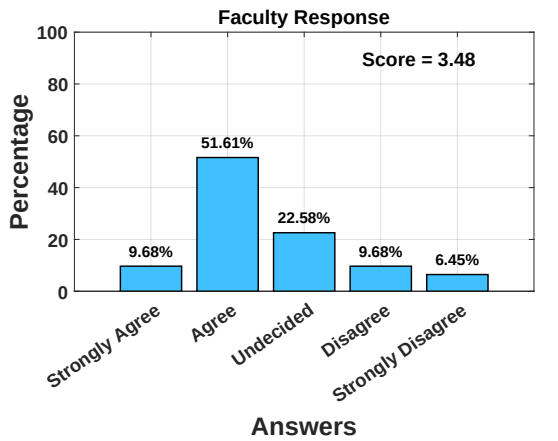


Figure 8.5: Response for the question 'A congenial atmosphere prevails to enhance professional knowledge through research and higher studies'

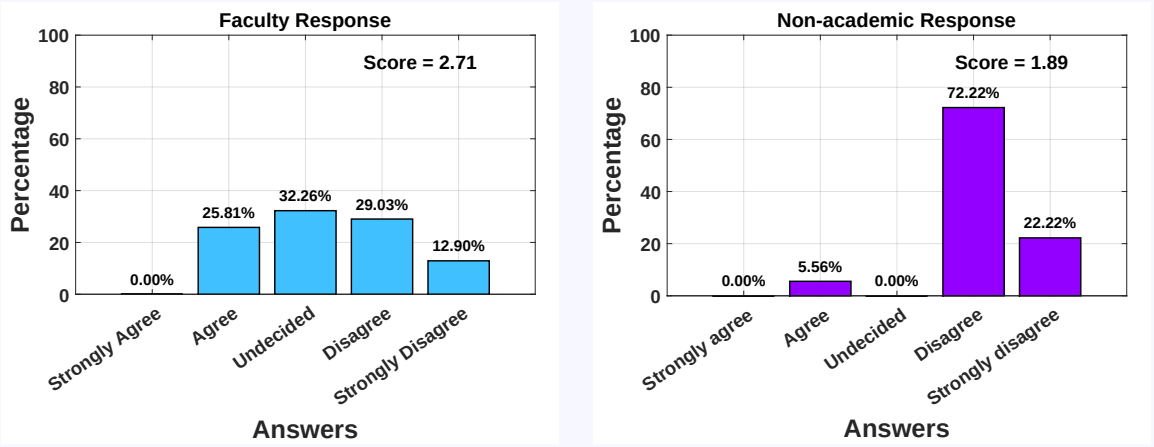


Figure 8.6: Response for the question 'Non-academics have enough opportunity to take part in different training programs for skill development.'

agrees the entity has a policy to provide mentoring/continuous guidance for new academic staff but they are not happy enough about the performance award policy (figure 8.9). This policy is not enough for inspiring the academic or non academic staff. From figure 8.9 we see that the score is less than 2.5. More than 35% of stakeholders satisfy the criteria for promotion/up-gradation (figure 8.10).

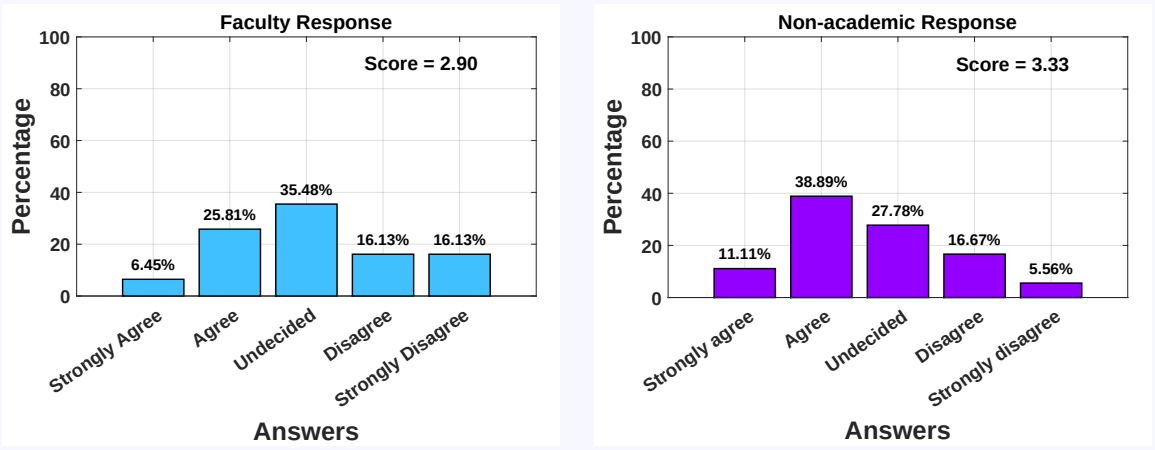


Figure 8.7: Response for the question 'The entity has a policy to provide mentoring/continuous guidance for new academic staff.'

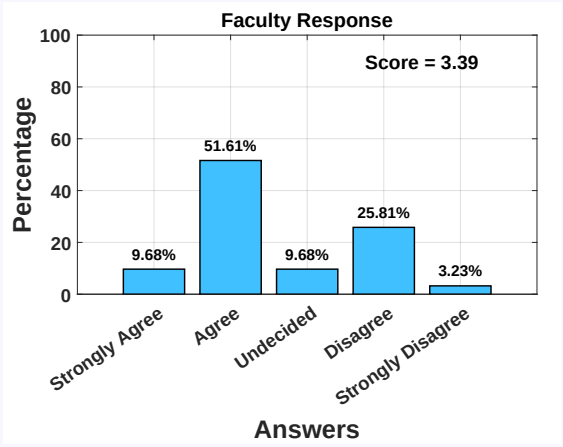


Figure 8.8: Response for the question 'The entity practices seminars and workshops to share knowledge and experience among the faculty members.'

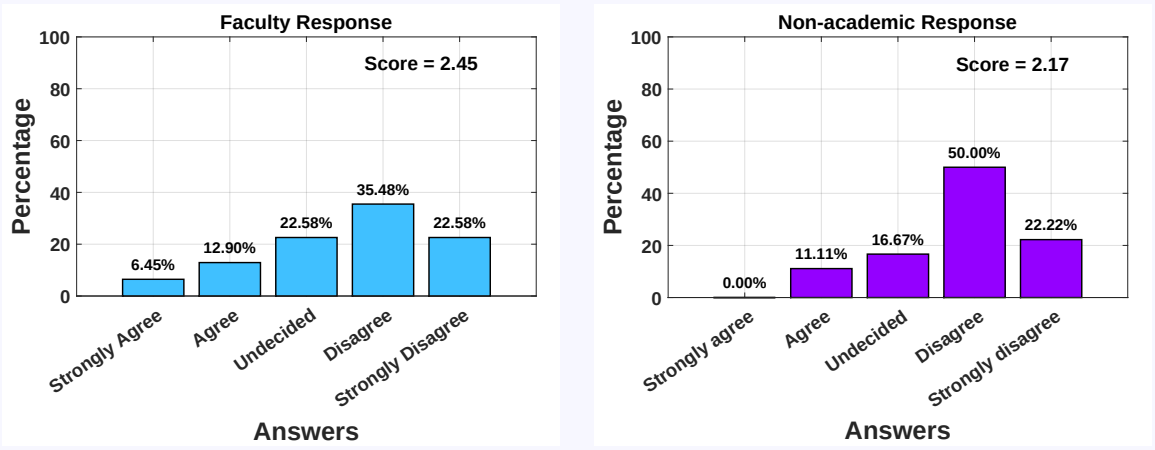


Figure 8.9: Response for the question 'The entity has a performance award policy to inspire academic staff.'

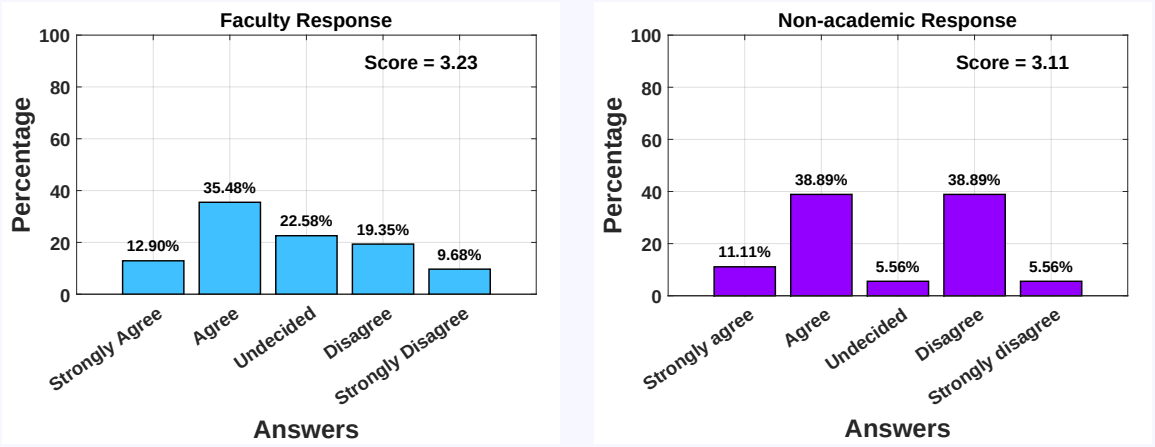
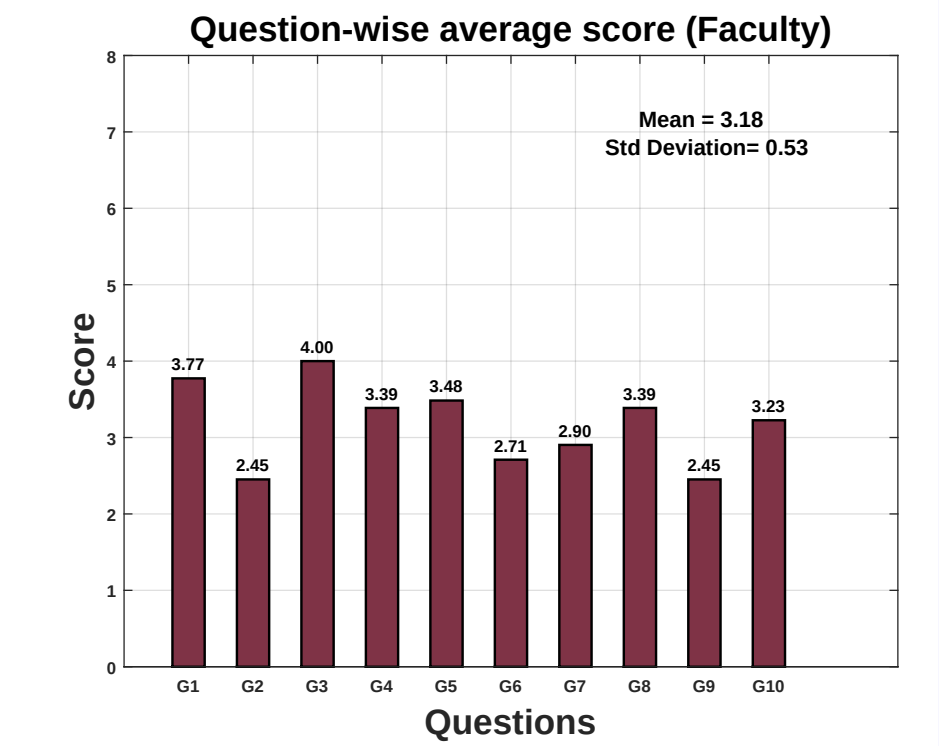
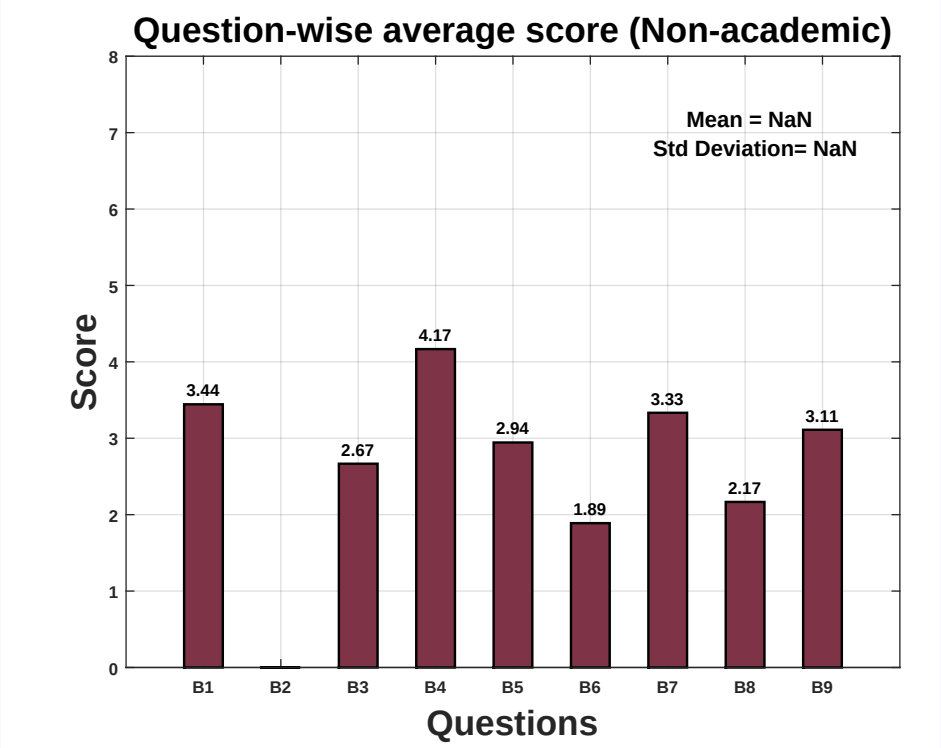


Figure 8.10: Response for the question 'Performance indicators are the criteria for promotion/up-gradation'



G1	Recruitment policy and practices are good enough for recruitment of competent academic and non-academic staff
G2	Salary and incentives are attractive enough to retain the academic and non-academic staff
G3	Good team spirit exists among different academic staff
G4	A congenial atmosphere prevails to enhance professional knowledge through research and higher studies
G5	Academics have enough opportunity to take part in different seminar/workshop/training programs for skill development
G6	Non-academics have enough opportunity to take part in different training programs for skill development
G7	The entity has a policy to provide mentoring/continuous guidance for new academic staff
G8	The entity practices seminars and workshops to share knowledge and experience among the faculty members
G9	The entity has a performance award policy to inspire academic staff
G10	Performance indicators are the criteria for promotion/up-gradation



B1 Recruitment policy and practices are good enough for recruitment of competent academic and non-academic staff

B3 Salary and incentives are attractive enough to retain the academic and non-academic staff

B4 Good team spirit exists among different academic staff

B5 A congenial atmosphere prevails to enhance professional knowledge through research and higher studies

B6 Non-academics have enough opportunity to take part in different training programs for skill development

B7 The entity has a policy to provide mentoring/continuous guidance for new academic staff

B8 The entity has a performance award policy to inspire academic staff

B9 Performance indicators are the criteria for promotion/up-gradation

Chapter 9

Research and Extension

Self-assessment standards regarding '*Research and Extension*':

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 8-1: University must develop capacity with appropriate facilities and provisions to undertake research with national relevance and give due motivation and recognition to researchers.
Standard 8-2: University should have institutional approach to explore the possibility of corporate funding through university industry research collaboration.
Standard 8-3: University should have a system and policy to disseminate and transfer the research findings to the industry and community through extension services.
Standard 8-4: Initiative to have patent of innovations need to be encouraged and supported by the university authority.

Universities have a key role to play in the process of socio-economic growth, as both a source of new knowledge and a trainer of scientists and engineers who work in industrial laboratories. Research at universities discovers, elucidates and evaluates new knowledge, ideas, and the technologies essential in driving the future. Research enterprises of a university harness the drive and ingenuity of engineering faculty, staff and students to devise creative solutions to vexing societal challenges.

9.1 Policy and Program

In addition to perform teaching responsibilities, faculties at the department EEE are engaged in various types of research activities based on their field of expertise. The results of which is clearly visible from the number of papers published in different reputed conferences proceedings and journals. A complete list of publication of faculty members of EEE department is shown in Appendix G.

To facilitate more conducive research environment, the University of Asia Pacific has established the Institute of Energy, Environment, Research and Development (IEERD). The objective of IEERD is to undertake and promote research and teaching in the fields of energy with emphasis on new and renewable energy development, energy conservation and energy management, assessing quality of materials, environment, water resources, water management, development and to develop human resources in the relevant fields[Standard 8-1].

Under this institute, faculties receive fund for their innovative research program and also get financial support for completing the registration in a conference or seminar. Moreover, final year students are required to complete a project/thesis under the supervision of a departmental faculty member. Every student submitting their thesis report needs to appear before a board consisting of at least three senior faculty members where the student has to present their work. Besides, students are required to complete projects and make presentations as parts of various Theory/Sessional courses.

Innovative students irrespective of semester are allowed to perform research work in IEERD depending on the merit of research material which must be approved by IEERD Advisory Council. The IEERD bears the cost of publication fee of papers in peer reviewed Journals and Registration fee for attending or presenting paper in recognized conferences. Recently, IEERD has increased its budget for students to enhance the research initiatives from the students.

Stakeholders' View

In the conducted survey, all the stakeholders - students, faculties, non-academic staff and alumni were asked about their opinion whether the department has a well-defined research and development policy or not. 59 % students agree that the department has a well-defined research and development policy. On the other hand, only 33% faculty thinks that the department has a well-defined research and development policy. Similarly, for the same question, 25% students answered that they are not satisfied with the research and development policy while in contrast a higher number of faculties 37% do not agree that the department has adequate research and development policy. Figure 9.1 shows the response regarding the question whether the department has a well-defined research and development policy. The average score for the question from students and faculties are 3.45 and 2.84, respectively.

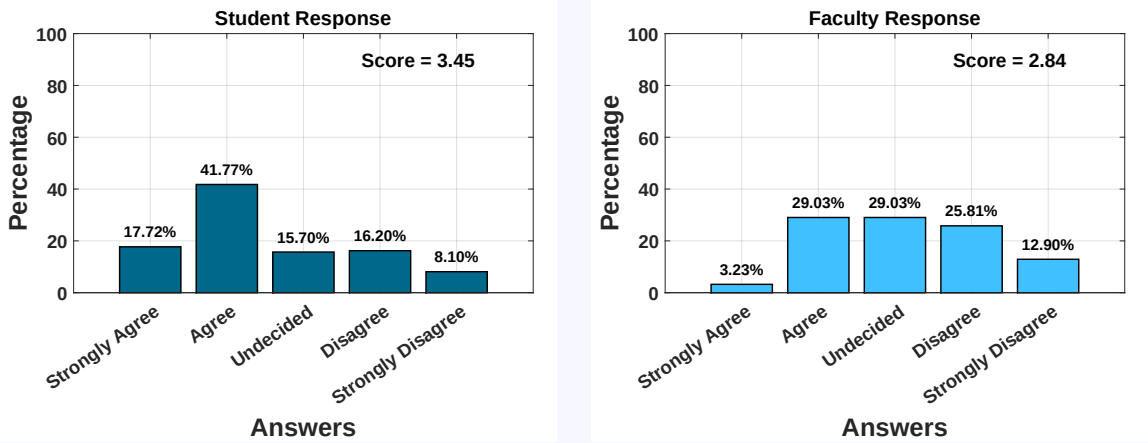


Figure 9.1: Response for the question 'The entity has a well-defined research and development policy'

In relation with the previous question stakeholders were also asked if the entity has proper mechanism for engaging the students in research and development. Figure 9.2 shows the response for student and faculties for that question. Almost 53% students agree that the department has enough facilities to engage students in research and development. However, according to figure it is evident that faculty response is quite different from the student response. Only 25 % faculty agrees with the question; however a higher number, 38% faculty thinks that the department does not have mechanism to engage students in research and developments. Figure 9.2 shows the response to the question 'Mechanism exists for engaging the students in research and development.' The average score for the question from students and faculty were respectively 3.36 and 2.84.

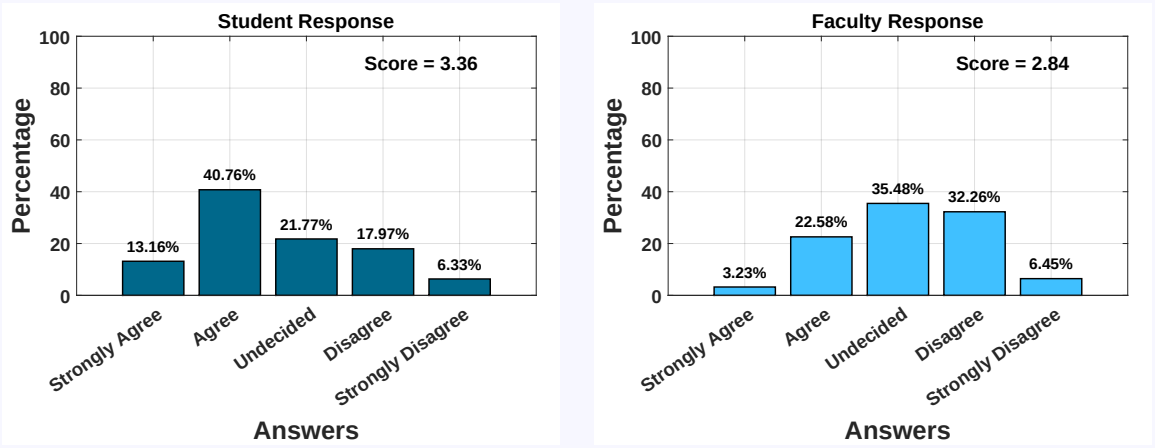


Figure 9.2: Response for the question 'Mechanism exists for engaging the students in research and development'

The students and faculties were also asked about the community service policy of the department. According to the opinion of 62% of the students, the department has policies for community service. On the other hand, the opinion of faculties provides a contrasting result. Only 18% of the faculties think that the department has proper policies of community service. However, for the both the stakeholders a larger number of responders were undecided, which is clearly visible in figure 9.3. The average score for the question from students and faculty were respectively 3.63 and 2.84.

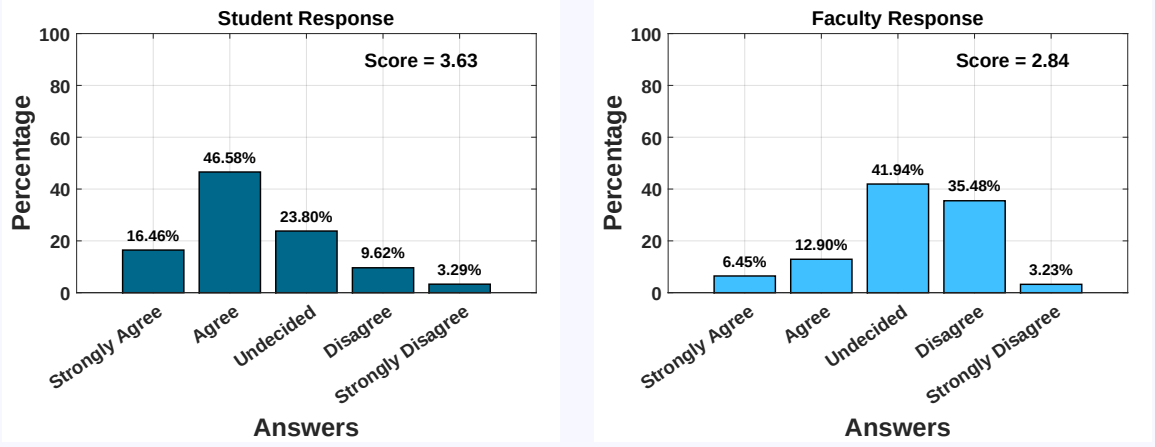


Figure 9.3: Response for the question 'The entity has a community service policy'

Moreover, during the survey, response from faculties were also collected about the initiative taken by faculties to hunt research fund. The survey result is illustrated in Figure 9.4. Large number faculties, around 42% were undecided where more than 41% disagree to the statement that the faculties take initiatives to find research fund.

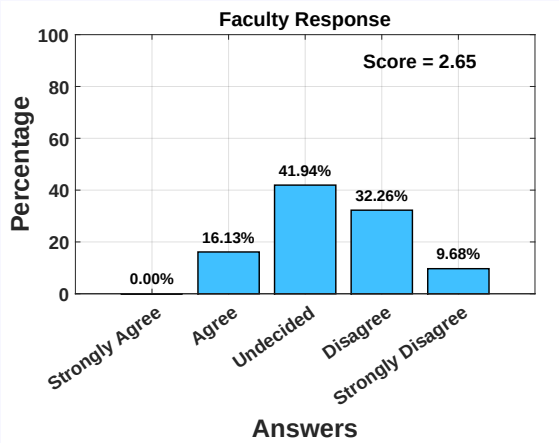


Figure 9.4: Response for the question 'The entity has a community service policy'

9.2 Fund and Facilities

The central fund for research is dispersed via Energy, Environment, Research and Development (IEERD). Faculty members and students are always encourages to submit their project to IEERD and after scrutinizing the merit of the proposal the project is allocated required money for the research. In addition, IEERD also provides funding in form of publication charge for publishing research article in reputed journal. Fund are also available for paying registration fee, transportation and accommodation cost required for presenting article in national and international journal.

In addition to the funding provided by the IEERD, the department also has its separate funds for faculties and student. Each year, all the final year students are eligible to get fund up to 20,000 taka and for special cases this grant can be extended to higher amount based on the merit of the work and recommendation from the committee. Moreover, additional funds are available for arranging seminar and workshops. Moreover, department also has fund for different clubs including project club and IEEE student branch which also arranges number of seminar and workshop around the year.

9.3 Research Facilities

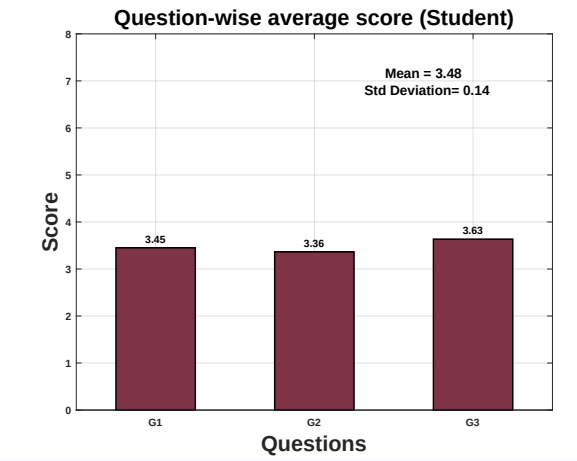
Department of EEE is currently in the process of converting its existing 'Project Lab' into 'Advanced Project and Research Lab' so as to make it a center for advance research both for faculty members and students. With this regard, the department has already started the process of buying different cutting edge instruments which will help the faculties and students to conduct cutting edge research. The university authority already approved a budget of 43,00,000 taka to purchase equipment for the improvement of different laboratories. For example, department of EEE has already acquired a 3D printer with necessary materials to print. Department also takes initiatives and implemented a high level simulation laboratory with heavy duty computers along with software. Department also arranges project exhibition in collaboration with IEEE UAP student branch along with the other students to encourage them and have a vision to organize such fair nationally [Standard 8-2].

9.4 Fund Hunting and Collection

It is already mentioned that faculties and students are eligible for funds from IEERD for their projects. Moreover, a number of faculties of the department are in active pursuit for fund from sources outside of the university. Even though currently the department does not have significant outside funding, several faculties and students received small amount of funding from outside source such as different NGO and industrial organizations. In addition, the university administration always encourages the students and faculties to arrange funds and conduct research using university resources.

9.5 Dissemination of Research Findings

To disseminate the research findings, the department of EEE regularly arranges seminars and workshops to encourage students to be more engaged in research activities. Moreover, the university publishes a newsletter in regular interval which includes the news regarding research works such as publication of papers in reputed journals, receiving awards from different prestigious national or international entity [Standard 8-3]. A list of publications is provided in Appendix G.

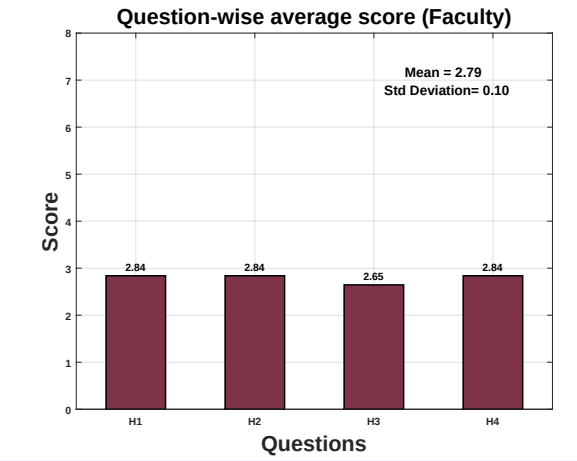


G.1 The entity has a well defined research and development policy

G.2 Mechanism exists for engaging the students in research and development

G.3 The entity has a community service policy

Figure 9.5: Response summary for Students



H.1 The entity has a well defined research and development policy

H.2 Mechanism exists for engaging the students in research and development

H.3 Teachers always take initiative to hunt research fund for smooth running of the research

H.3 The entity has a community service policy

Figure 9.6: Response summary for Faculty

Chapter 10

Process Management and Continuous Improvement

Self-assessment standards regarding *'Process Management and Continuous Improvement'*:

According to SA manual, 2^{nd} Edition, published by QAU, HEQEP, UGC, GoB.

Standard 9-1: University or the entity must have internal quality assurance system with set policies and procedures for quality assurance.

Standard 9-2: The University or the entity conducts self-assessment following a cycle, develops strategic plan, identifies the limitations to implement the plan and adopts corrective measures for attainment of desired quality.

Standard 9-3: The University or the entities continually and systematically review the effectiveness of the procedures to meet the objectives.

In academic teaching, continuous quality improvement of education has been given paramount importance in the institution. The diversity of social demands, enhancement of higher education across the globe and demographic changes in technology make the academics to come up with innovative systems continuously so that students can cope up with the fast trending systems in current world. Defining, developing, and improving processes of education systems for assuring quality education are crucial. This chapter describes the process management and continuous improvement strategies applied and further incorporation needed at the Department of EEE.

10.1 Existing System for Quality Assurance

Admission Policy

With the approval of central committee, as per the requirements and capacity, the department sets the entry qualification for new intake which is then sent to print and online media as admission announcement. The admission process consists of two stages. The primary includes written exams followed by a secondary sage of viva-voce. The application system has been made online by the department and qualified candidates receive SMS for making payment through bank, online transfer or cash at the finance department. After successfully making the payment, the students can collect the admit card for admission test. Results from the test are then published on the website and students are informed through SMS. Short listed candidates from the written examination are then called for viva-voce and lastly final list of candidates is provided at the website and deadline is given for payment of the admission fees. Again, entity strictly makes sure that criteria are followed in order without making any compromise. [Standard 9-1]

Recruitment Policy

Both for faculty and staff recruitment, all the departments follow almost the same criteria which begin with department requisition. Next, with the approval from the honorable Vice Chancellor, advertisement is given in print and online media. For each individual post, department sets specific criteria with the approval from the central committee which is strictly followed without any compromise. Applications are then shortlisted from the prospective applicant as per the standard requirements of each post defined by the entity and individual department. The short list is then again sent to the Vice Chancellor for secondary approval. Next, short-listed candidates are informed for written or viva-voce by the selection committee through E-mail, SMS and over phone. Finally, finalized candidates are issued appointment letters for joining. Each year, the selection process has been reviewed centrally by the entity and the recommendation is given

if there is any scope of improvement. In addition, considering the revised pay-scale of each year, appointment letters are also improvised accordingly. [Standard 9-1]

Question Moderation Policy

For moderation of the questions, an internal committee is formed namely 'Question Moderation Committee' which consists of senior faculty members of the department of EEE with head of the department as convener. Each question paper is assessed based on the guidelines of Bloom's taxonomy. The committee checks the quality of the question paper to ensure the fulfillment of the guidelines and standards. The hard copies of questions are collected from the faculty members within a stipulated date provided by the committee which is notified through e-mail. The question paper is returned to the faculty member if there is any moderation. After that, the corrected question from the faculty member is forwarded to the Convener of the exam. The examiners as well as moderators have to submit designated form provided by IQAC along with the question paper (Appendix C & D). For ensuring the consistency of the fair assessment of the students, the moderators check for some factors while evaluating the question papers like linkage between LOs and questions, coverage of the contents described in the course outline, marks distribution of the questions according to its importance, finding out any grammatical mistake and so on. [Standard 9-1]

Examination Policy

UAP maintains very strict rules and regulations for conducting examinations. The punishments for different offenses during examination are clearly described in the front and back of each answer script. It helps students to inform and realize the outcome of any misconduct or offenses in examination hall. All faculty members of EEE department are also well informed about the guidelines for conducting examinations to ensure the discipline and proper environment during examinations. Besides, EEE department arranges a meeting before mid-term and semester final examination so that all faculty members can discuss regarding any necessary pre-cautions or measures need to exercise during examination which helps to conduct examinations smoothly. The 'Routine and Roster Committee' prepares routine for the examinations and duty roster of the faculty members to distribute their invigilation. The duty roster is circulated to the faculty members before exams. The 'Seat Plan Committee' arranges seat plan for the exam participating students where utmost importance is given for making seating arrangement for the students of the same batch so that adjacent seat for the students of same batch can be avoided. The seat plan is published prior to the examination and also posted to individual exam room. The necessary answer scripts are arranged by packing them for each exam room based on the exam routine by the 'Script Preparation Committee' and stored in a secure room in the department before

the examinations. Finally, the 'Question Preparation Committee' makes the copies of the moderated questions in a room restricted from other than the committee members and stores in the locker securely which is located at the room of the department head. All these committees include experiences faculty members of EEE department. During every exam slot, a senior faculty member is assigned as 'Hall-in-charge' and he makes necessary decisions to maintain the discipline and proper environment in the examination hall. [Standard 9-1]

Evaluation Policy

Students assess course instructor through online portal in ORBUND by filling up a set of structured questions at the end of the every semester. The students cannot get their admit card unless they complete the evaluation process of the faculty member.

Examiners follow the guidelines developed by the Examination Committee to check the answer script. After checking the answer scripts by the examiner, scripts are scrutinized to ensure the making the error-free result of the course. Further, the scrutinizer is required to fill up a form provided by IQAC after completing scrutinizing process (Appendix E). Finally, the final result is uploaded to the online portal of ORBUND to finish the result submission process within a designated deadline set by the UAP authority. [Standard 9-1]

Purchase Policy

For maintaining as well as improving the quality of the education, Department of EEE maintains an exercise to purchase necessary updated lab equipment and books in a regular basis. Besides, UAP authority maintains the provision to update the configuration of the computers which are used for five years. Moreover, UAP arranges the purchase for any equipment required for the research purpose. Now, all kinds of purchase in UAP is done by 'Purchase Department' which works centrally. For any purchase, the department places requisitions in a designated form to the 'Purchase Department'. These requisitions are approved after assessing by the administration. After that, the authority publishes tender notice to the daily newspapers and finally issues work order to the selected suppliers or vendors. The suppliers or the vendors are selected by the open bidding process. The quality of the products supplied by the vendors or the suppliers are verified by the concerned department. After the verification, the bill of the purchase is processed and sent to the 'Accounts Section' for clearing the payment. [Standard 9-1]

Disciplinary Measures

Department of EEE has its own proctorial body nominated by the central committee that maintains the discipline within the department. Each case is assessed by the body and decision is

taken accordingly. Exceptional and extra-ordinary cases are forwarded to central body for taking further measures. [Standard 9-1]

10.2 Self-Assessment

Self-assessment is a crucial practice in the academic institutions for continuous improvement and quality assurance in education. It gives a direction and guidelines to prepare comprehensive improvement plan addressing important issues which helps not only to improve but also to assure the quality of education. Besides, it is also a prerequisite for program accreditation. The program self-assessment practice should be a regular process for checking and continuously enhancing the quality and effectiveness of the program.

The self-assessment exercise of the undergraduate program of the Department of EEE is not done yet but the department has already launched the review process since last year. Besides, for facilitating the exercise, the UAP authority has already taken steps like conducting a rigorous assessment is already included in 'Teacher Promotion Policy' and 'Annual Increment Policy' as well. Moreover, the UAP authority provides performance report to the faculty members evaluated by the course attending students at the end of the semester hence the faculty members can realize the effectiveness of their teaching method and modify their teaching style for improving the quality of education.

Stakeholders' View

The conducted survey aimed the responses of the faculty members on the question based on Standard 9-1: "The entity always acts in compliance with the decision of the university regarding continuous quality improvement". The survey result for faculty members is shown in Figure 10.1. It is very clear from the response that 35.48% of the faculty members are agreed and 25.81% of the stakeholders' are completely agreed with the question. The average score found for the responses from the faculty members is 3.74, where a score of 3 means "Undecided" and a score of 4 denotes "Agreed". So, the survey results reflect the compliance of continuous quality improvement of the department.

10.3 Improvement Plan

The Self-Assessment Committee (SAC) of the Department of EEE will prepare a draft improvement plan and future strategies based on the findings from the SA report and the recommendations of the external peer review panel. After that, the SAC of the Department of EEE will arrange workshop to share the draft improvement plan with the faculty members

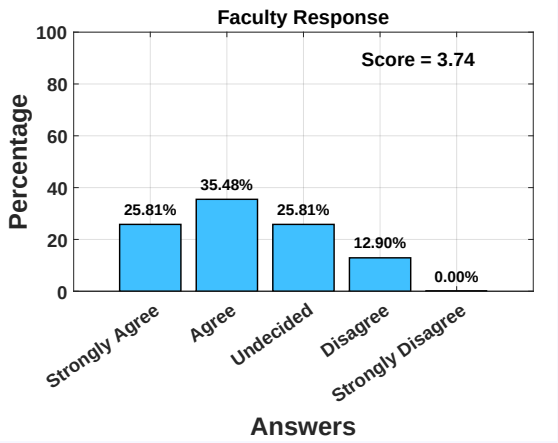


Figure 10.1: Response for the question 'The entity always acts in compliance with the decision of the university regarding continuous quality improvement'

for implementing the plan. Besides, the opinions from the faculty members will be given priority for developing the draft plan in the monthly departmental meeting. Moreover, the past experiences, present situation and future possibilities of the department will be addressed while drafting the plan so that the department can grasp the spirit of the quality improvement in regular manner.

The monthly departmental meeting is a good scope to improve the quality of the education as well as the whole environment of the department by addressing different issues in very candid way. The UAP authority arranges training program for the new faculty members which helps them to cope up with the new environment of the institute as well as the profession. However, the outline of all undergraduate courses under the department of EEE has been prepared based on the Outcome Based Education (O.B.E) method. These will be a big help for the department to implement the improvement plan.

Stakeholders' View

Figure 10.2 depicts the responses of the faculty members on the question based on Standard 9-2: "The entity embraces the spirit of continual quality improvement". 35.48% of the respondents are complied with the question where 19.35% of the faculty members are totally complied with the query. The survey results conveyed a score of 3.65, where a score of 3 denotes "Undecided" and a score of 4 signifies "Agreed". Hence, the respondents acknowledge the spirit of continual quality improvement of the department.

The feedback from the faculty members on another question according to Standard 9-2:

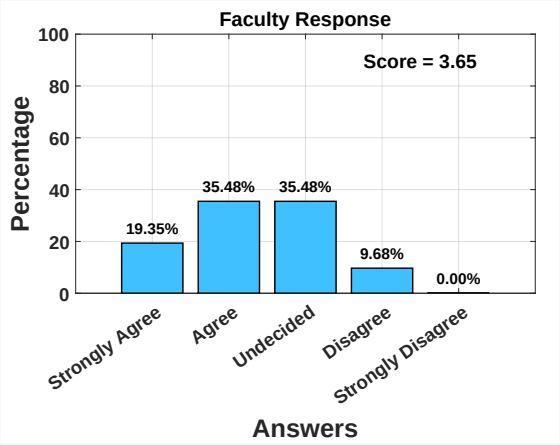


Figure 10.2: Response for the question 'The entity embraces the spirit of continual quality improvement'

"Academic programs are reviewed by the entity for the enhancement of students' learning" illustrates in Figure 10.3. It is evident from the feedback that 29.03% of the faculty members is complied with the question. However, only 9.68% of the respondents are fully agreed with the query. The feedback states that the faculty members stood for this question at a score of 3.19, where a score of 3 denotes "Undecided" and a score of 4 means "Agreed". Therefore, the opinion of the respondents is remained neutral to the reviewing process of the academic programs by the department for improving students learning.

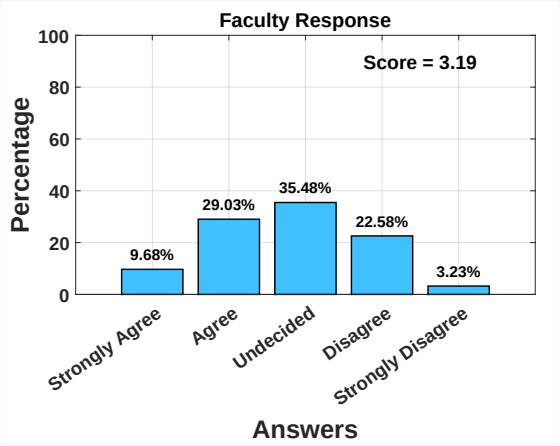


Figure 10.3: Response for the question 'Academic programs are reviewed by the entity for the enhancement of students' learning'

10.4 Stakeholders Feedback and Its Use

The department appreciates and emphasizes the stakeholders' feedback to revise the undergraduate program for continuous improvement of its quality. The department of EEE arranges workshops and job seminars and invites the professionals and researchers from different EEE sector related organization and institutions to get their valuable feedback. Right now, the department amends its course curriculum with considering the stakeholders feedback. Feedback provided by the stakeholders during the opinion survey regarding different aspects of the undergraduate program of the department of EEE will be given priority while developing the improvement plan and future strategies.

Stakeholders' View

Figure 10.4 portrays the feedback from the faculty members on the question based on Standard 9-3: "The entity ensures a usual practice for students'/ Alumni's feedback as a culture". 25.81% of the respondents share the same view with the context of the query. A major portion of the faculty members i.e. 32.26% give neutral opinion on the question during the survey. The survey reflects that the faculty members stood on a score of 2.65, where a score of 3 means "Undecided" and a score of 2 signifies "Disagree". The survey refers that the stakeholders share neutral opinion to the regular practice of the department for taking the students'/ Alumni's feedback.

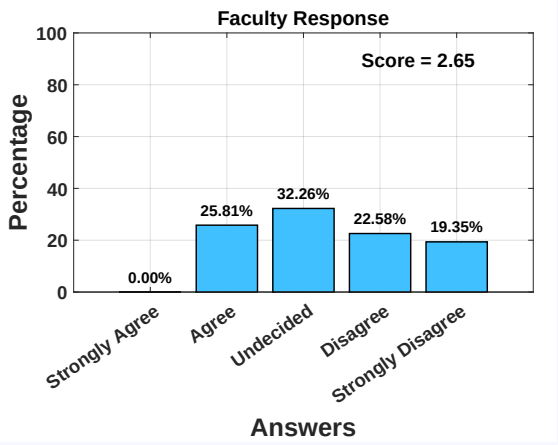


Figure 10.4: Response for the question 'The entity ensures a usual practice for students'/ Alumni's feedback as a culture'

10.5 Use of Peer Observation Results

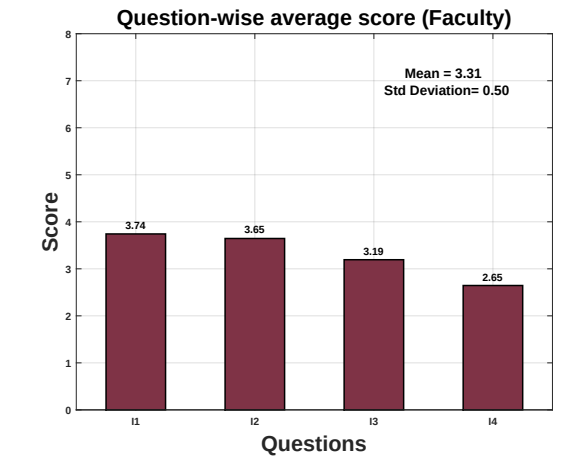
Department of Electrical and Electronic Engineering, University of Asia Pacific, has been selected to participate in the Quality Assurance (QA) Project of the University Grants Commission (UGC), Bangladesh. The department will be submitting Self-Assessment Reports (SARs) shortly. As an essential part of the Process, Self-Assessment Reports (SARs) have to be reviewed by three external Peers: One Quality Assurance Expert from Overseas, One Local Quality Assurance Expert and One Local Subject Expert. We are at the final stage of preparing the SARs and currently awaiting for the External Peer Reviewers to visit us and critically review the SARs for verification and validation.

10.6 Regular Updating of Program Objectives and ILOS

Our department has initiated the Program Objective and ILOS based learning starting from last semester (Spring 2017) which is waiting for review. The programs will be updated accordingly after getting the feedback from the peer observations as well as each year it will be revised and improved from the evaluation.

10.7 Summary of Stakeholders' View

The summary of the feedback from the faculty members on the four questions regarding Standard 9-1, 9-2 and 9-3 is presented in Figure 10.5. It is found from the survey that average score for the responses of all questions is 3.31, where a score of 3 denotes “Undecided” and a score of 4 means “Agreed”. So the response confers that the faculty members bear neutral view for the questions based on Standard 9-1, 9-2 and 9-3.



I1	The entity always acts in compliance with the decision of the university regarding continuous quality improvement
I2	The entity embraces the spirit of continual quality improvement
I3	Academic programs are reviewed by the entity for the enhancement of students' learning
I4	The entity ensures a usual practice for student/ Alumni feedback as a culture

Figure 10.5: Response summary of the faculty members for the questions based on Standard 9-1, 9-2 and 9-3

Chapter 11

SWOT Analysis

S.W.O.T. is an acronym that stands for Strengths, Weaknesses, Opportunities, and Threats. A SWOT analysis is an organized list of the business's greatest strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are internal to the organization, for example reputation, patents, location. These can be changed over time with considerable amount of work and effort. Opportunities and threats are external for example suppliers, competitors, prices — these are always present in the market with the control of any individual organization. The entity is not able to change them.

Existing businesses can use a SWOT analysis, at any time, to assess a changing environment and respond proactively. A SWOT analysis can offer helpful perspectives at any stage of an effort. You might use it to:

- Explore possibilities for new efforts or solutions to problems.
- Make decisions about the best path for an initiative. Identifying opportunities for success in context of threats to success can clarify directions and choices.
- Determine where change is possible. At any juncture or turning point, an inventory of strengths and weaknesses can reveal priorities as well as possibilities.
- Adjust and refine plans mid-course. A new opportunity might open wider avenues, while a new threat could close a path that once existed.

SWOT also offers a simple way of communicating about initiative or program and an excellent way to organize information that has been gathered from studies or surveys.

11.1 Strengths

Governance

- Vision and Mission of the University are clearly defined. Program Educational Objectives, Program Objectives, and Mappings are clearly stated to maintain transparency.
- University of Asia Pacific (UAP) has a well-stated organogram illustrating and describing the duties and responsibilities of each personnel at each level to maintain a hierarchy and regulate provisions properly.
- UAP works towards obtaining excellence in both academic and co-curricular activities, therefore the institution arranges regular prize giving ceremonies and award functions to encourage students to participate in such technical and non-technical activities. Several workshops and seminars are held every semester to hone the qualities of the student furthermore.

- A strong proctorial body and disciplinary committee ensure that the students are well safe-guarded from any harassment from within the university premises.
- Academic calendar is maintained strictly and results are published timely.

Curriculum Design and Review

- A regular review of the curriculum is maintained to ensure the progressing needs of the industry.
- The curriculum includes detailed information of the course synopsis, assessment methods, prerequisites and all the optional courses offered to the students. It also includes all the courses offered to other departments.
- EEE department has formed a committee of qualified faculty members who are in charge of the reviewing and propose changes to the curriculum if necessary.

Students

- A student must have a total GPA of 7.5 or above at SSC and HSC or equivalent exam to apply for admission at EEE department of UAP. This is a step forward to ensure quality among the intake students.
- An advisor is assigned to a group of students of every semester. Students are free to discuss their academic issues with the advisor for a steady progress of their academic life.
- Faculty members are available to students for one third of the credit hour for proper academic counseling. This time is prescribed by the faculty members themselves within the working hours.

Teaching and Learning Assessment

- EEE program has started getting used to the reciprocative nature of the outcome-based learning. Students are taught the theories and its application in real life which are subsequently taught hands on during session classes. Faculty members employs several teaching methods like presentations, project works, workshops, seminars, industrial visits and report writing, etc. to achieve this.
- An impartial and just assessment is made by the faculty for the students by ensuring a strict invigilation during examination. Recommended formats for moderation and scrutiny also ensure this process.

- The cooperative nature, accessibility and involvement of qualified faculty members in the learning process help students to excel.
- A rigid ruling of 70% attendance and marking policy is enforced among the students so as to guarantee classrooms presence

Staff & Facilities

- EEE Department has 37 full time faculty members with degrees earned from internationally reputed universities at home and abroad.
- UAP offers a pay scale which undergoes periodic revisions according the current market needs. Other benefits include two festival bonuses per annum, provident fund and gratuity for academic and non-academic staffs.
- Academic and non-academic staffs are recruited under set criteria which are transparent and unbiased.
- A warm relationship between the staff and faculty members ensure smooth operation of the department.
- The ratio of teacher and students is about 1:20 which is fairly good to maintain the standard set by the university.

Physical Facilities

- UAP is situated at the heart of the metropolitan Dhaka city. It is one of the prime locations for current and prospective university students.
- The department houses a fully equipped computer and project laboratory. Student and faculty member can also avail themselves of the high speed internet with Wi-Fi connectivity while within the premises.
- The classrooms are equipped with multimedia projectors and are fully air conditioned.
- A central departmental library within the institution provides an array of related reference books and other learning materials for the students and faculty members.
- A central medical center is present within the institution to address any medical emergencies.
- Separate room space is provided for professors and associate professors while assistant professors and lectures are assigned cubicles.

- The central cafeteria provides quality food for everyone at economical price range. Seating arrangements are sufficient for both students and faculties.

Student Support Service

- The "Directorate of Student Welfare (DSW)" at UAP provides financial support for underprivileged students. All forms of co-curricular activities, personal & professional development programs, counseling services for students and faculties are supervised by the DSW.
- EEE strives to continually impart knowledge to the students beyond classroom teaching. As part of this, the department has involved students in one of the largest IEEE Student Branch of UAP which arranges various seminars and short courses conducted by internal faculty member as well as qualified experts in that field.
- Each student within the department is assigned an advisor who will address any difficulties regarding academic or non-academic issues faced by the student. Advisors reach out to their advisees every semester to monitor their progress and ensure academic well-being.
- Keeping up with the contemporary industry needs, EEE department along with the central body periodically arranges project exhibition, inter-department debate and sports competitions.

Research and Extension

- The department organizes regular workshops to whet the research skills of the faculty members within the institution. Faculty members can also use an allocated amount dedicated for participation in workshop home and abroad.
- The central research institute named The Institute for Energy, Environment, Research and Development (IEERD) at UAP expedites research by offering faculty members funds for various purposes which include basic research works, publication of articles in journals, registration fees and conveyance for participation in national and international conferences.
- The faculty members have access to IEEE journals for viewing and researching on their topic of interest.
- The IEEE Student Branch of UAP has already started involving student to research driven studies. Faculty members play a key role in motivating the students.

Process Management and Continuous Improvement

- Student intakes and faculty recruitment are one of the prime considerations to ensure bilateral communication and quality education. Centrally formed committee of faculty members invigilate and grade admission exams under university policy.
- Department of EEE also initiated program objectives and ILOS based learning starting from Spring 2017 which awaits for its first peer review.

11.2 Weakness

Governance

- The administration requires more staffs to handle large amount of filings and documentations efficiently.
- Although practiced unofficially, a structure Peer Evaluation or Investigation may provide insight into personal development within faculty members.
- Website is not maintained properly. Hence the institution requires more efficient IT staffs to update and maintain website regularly.

Curriculum Design and Review

- The curriculum review process should be more dynamic and periodic.
- Major revision of the existing curriculum has several restrictions which are beyond the control of the department.

Students

- Quality of students varies largely in different semesters which requires a more dynamic structure within the university.
- The scheduling admission of the student intake for Fall semesters coincides with the public universities.

Teaching and Learning Assessment

- Although the number of full time faculty members is enough, the department still needs to hire few part-time faculty members from public universities for specialized courses.

The part-time faculty members are not always present at the University premises hence are unable to provide sufficient counseling time for the said course.

- The part-time remain fairly disconnected with the practices followed by the full time faculty members.
- Communication skill of students, although nurtured, still needs improvement.

Staff

- The pay scale of faculty members is not equivalent to the industry standard or peer private universities.
- Promotion criteria are not well-defined in the service rule of UAP.
- The sick leave policy needs to be introduced at UAP.

Physical Facilities

- Separate common room for male and female are not available in this institution.
- Unavailability of empty spare classrooms for makeup classes and exams.
- Few labs have not been introduced due lack of space required to house all the equipment.
- Lack of Gymnasium.
- The university does not have its own outdoor sport facility.
- There are no transportation or accommodation facilities for students, faculties and staffs.
- Ambulance service for emergency medical situations is not yet available.

Student Support Service

- Lack of participation from the alumni of the department has rendered the improvement process lethargic. A formidable alumni body can ensure the future graduates of the department with job and internship opportunities. Hence the alumni association needs proactive involvement in the quality improvement measures of the department of EEE.
- A better professional attitude and perspective is expected of the non-academic staffs within the department.
- Students need become apprehensive of their social commitments through community works and improve their interpersonal communication through the expansive club activities.

Research and Extension

- Unavailability of different research groups within the department which would have ensured more inter-department collaborations.
- Faculty members are preoccupied with administrative and non-academic responsibilities which hamper the time dedicated for their research.
- The department must work towards attracting PhD holding faculty members.

Process Management and Continuous Improvement

- EEE department has started following a self-assessment system very recently so all the stakeholders are still getting used to the new framework.

11.3 Opportunities

Governance

- Training programs and workshops will help improve the quality of the existing staffs and personnel.
- Administrative work can run more smoothly if veteran and dynamic personnel are recruited at certain positions at UAP.

Curriculum Design and Review

- EEE department can acquire competitive edge in the industry by designing a curricula that addresses the prospective employers' and experts opinion while keeping in terms with the contemporary practices in the industry.

Students

- An exceptional display by students in the work fields will establish a brand image of UAP which in turn will attract more students.
- Media exposure of the various activities of the students will help will help UAP to have better better exposure.
- Automotive technology can be taken into account where monotonous and lengthy processed can be achieved efficiently.

Teaching and Learning Assessment

- Training and workshops may be arranged to improve and hone the skills of the educators.
- EEE department may increase its ardor for research by hiring experienced faculty members with PhD degrees from renowned universities across the world.
- Permanent faculty members, who are currently on study leave pursuing PhD from reputed universities, would become strength for the department in the long run.

Staff

- The department can attract more experienced senior faculty members and supporting staffs by offering a better pay scale.

Physical Facilities

- A fully furnished gymnasium for the students is under way.
- The University has already purchased about 3 Acres (around 12000 square meters) land in 'Rajuk Purbachal' where a big outer campus with residential facilities will be constructed in near future. Now it can rationally envisage an institutional strength of the highest quality for rapid growth of the department in the very near future.

Student Support Service

- Practice interview session conducted by experts from practical fields along with the faculty members can aid the students to prepare for real life interviews.
- Having collaboration with corporate bodies is crucial for ensuring placement of the graduates. EEE program is trying to sign MOU with the renowned corporate bodies. The department has built interaction with international technical assistance government agency like GIZ of West Germany and reputed international consulting organization like NRECA of USA.

Research and Extension

- The IEERD at UAP may help faculty members participate in various workshops and training programs.
- Collaborative and joint research work may be introduced within the departments at UAP and with other universities or professional bodies.

Process Management and Continuous Improvement

- By continuous quality improvement and a keen sense of accomplishment, EEE department endeavors to meet the upcoming challenges and demands of the engineering sector.

11.4 Threats

Governance

- An improved governance of other private universities poses an intimidating competition for UAP.

Curriculum Design and Review

- UAP is yet to be at par with the demands of the engineering sector due to lagging behind of the improvement of the curriculum. This will have detrimental effect on the career building process of the fresh graduates.

Students

- Advertising policy of competitor universities are more forward and have a further reach.
- A larger number of competitive private universities mean that UAP is no longer unique to students.
- The existing national curriculum has been unable to produce students of higher caliber in recent times.

Teaching and Learning Assessment

- If the department fails to hire more senior faculty members or retain experienced faculty members then sustenance of quality is under peril.

Staff

- Better remunerations and facilities through easier workloads have biased experienced faculty members and non-academic staffs in favor of other private universities.

Physical Facilities

- Several peer private universities are already providing the students with a fully functional permanent residential campus with all the required facilities.

Student Support Service

- Many private universities provide better scope and more areas of co-curricular activities which is attracting a lot of students.
- EEE department at UAP has not yet organized conferences and inter-varsity exhibitions and competitions in comparison to its competitors.

Research and Extension

- Peer private universities have prioritized research and hands-on skill over other areas compared to the engineering school of UAP. This would cause the department to lag behind on the research and practical skills of the students.
- Lack of pursuing of fund from commercial sources by the department means other universities enjoy more sponsored projects and research collaboration.

Process Management and Continuous Improvement

- Some of the private universities are little ahead in the process of quality improvement system since UAP just have initiated the ILOS based program which may give them and upper hand.

Chapter 12

Conclusion and Improvement Plan

Self-assessment is the first key step for evaluating present status and condition of an academic program with an aim to improve the existing and navigate the goal. It is a prerequisite for future planning and helps an entity to explore its values, abilities and preferences. This self-assessment report prepared by the department of Electrical & Electronic Engineering started with the self-assessment process we followed. The assessment was carried out by an in depth analysis of nine dimensions of the entire teaching-learning process which comprise governance, curriculum content design and review, student admission, progress and achievement, teaching and learning, physical facilities, student support services, staff and facilities, research and extension, and process improvement. Each dimension was discussed in a separate chapter and every chapter was reached in a pinnacle with a detail analysis on the answers of the serve-questionnaire distributed among five groups of stake-holders consist of 678 individual respondents. The report comes to a crescendo by highlighting the strengths, weaknesses, opportunities and threats (SWOT) under each of the nine dimensions. The report is a final outcome of a series of team building workshops and meetings organized by the committee form for the coordination of the whole process of this self-assessment. This report never comes in existence without the hunted cooperation from all concerned including students, faculty members, alumni, non-academic stuffs and employers. Some important findings are emphasized below:

- Currently the department has necessary number of highly experienced faculty, classroom and well equipped laboratory in Electrical, Electronics, Power System, Machines, Control System, Power Electronics, Microwave Engineering, Computer Programming, VLSI, Measurement and Instrumentation etc. Over the last six years 19 batches of student were graduated and most of them are well placed in the job market.

- The Department reviews its different policies including academic curriculum and recommends necessary modifications from time to time to comply with program mission and vision and the university and the department authorities are fair and transparent in their decision making. Very recently, this department reviewed the total syllabus of EEE program, compared it with similar programs in reputed national and International universities and waiting for the final approval of academic council.

- Department has already taken a number of visible initiatives to move its academic program towards Outcome based Education (OBE) Model. A number of workshops have been arranged to introduce OBE and how to redesign the curriculum, question papers, course outlines, evaluation process and the overall teaching-learning mechanism to meet OBE criteria. The questions of final examination of Spring 2017 were the first vivid department-wide step towards implementation of nine months long intense training on OBE model; The exam-questions were set based on the mapping the LOs and the six levels

of cognitive domains of Bloom's taxonomy. Individual course files are being maintained in the department from that semester.

- Teaching-learning is very interactive and supportive. Teachers provide lesson plan in a form of detailed description of the course content. The department provides facilities to the students for effective academic preparation with the integration of technology including multimedia projectors in each classroom, computer room for teachers and students with high speed internet connectivity and access to renowned journals.
- The department is arranging several technical seminars and workshops in each semester for a long time. The department is ceaselessly providing numerous opportunities to students to arrange co-curricular activities and activities like project exhibition, club fair and field trips (such as, Kaptai, Energypac, EM Power) etc. and extra-curricular activities like annual cricket or football tournament, festival, picnic etc.

12.1 Improvement Plan

The process we all went through to complete this self-assessment report is indeed an eye-opening for all of us. Self-Assessment Committee (SAC) of the department has already collected the feedback from the stake-holders in the survey forms. Moreover, some concerns were expressed verbally by several stake-holders while they were invited in focused group discussions. SAC is waiting for the peer-review visit. The plan is to divide all the suggestions in three types, i) Immediate (will be addressed by next semester) ii) Short-term (will be fulfilled in two years) and iii) Long-Term (will be addressed in four years), and take necessary steps accordingly. Although the road map will be designed at the beginning of next year but following issues need to be assessed and improved continuously to keep improving quality of education and teaching-learning environment.

Good Attractive Website

Website is the first thing that anyone from outside encounter of any institution. Nice looking and dynamic website is easier to make now than ever but still the UAP's website is not up to the mark. It needed to be addressed with priority.

Curriculum Design and Review

Building and revising existing curriculum is not easy as there are several restriction which are beyond the control of the department. More freedom needs to be ensured to make curriculum more dynamic and periodic.

Increase Number of Senior Faculties

Although we have enough faculties but we have few professor, Associate Professors and renowned adjunct faculties. Scarcity of senior faculties effects quality research work, proper guidance and many other.

Staff Satisfaction

Although UAP provided lots of facilities to the faculty but, feedback from faculties in term of pay scale say a lot about their satisfaction. Other than that there are no sick leave or medical insurance. Besides promotion criteria are ambiguous.

Physical Facilities

University has improved a lot in terms of physical structure and quality place. However, lack of sport facilities, gymnasium, separate common room for female and male, free classroom and transportation service made the university less of a complete functioning one.

All members of Department of EEE realize that through this self assessment process, our B.Sc in EEE program has discovered its strengths and weaknesses. The Department will use these findings and relevant stakeholders' feedback for continuous improvement to achieve its stipulated mission and vision.

Appendix A

Program Outcomes

A.1 List of PEOs

- **PEO-1:** Apply their Engineering knowledge and up-to-date skills to assume positions of technical leadership in performing Professional work in Electrical and Electronic Engineering either individually or through interdisciplinary teams.

- **PEO-2:** Pursue their career through post-graduate education or professional activity and engage themselves in independent and life-long learning in the broadest context of technological change.

- **PEO-3:** Develop Electrical and Electronics Engineering solutions, maintaining high ethical standard and considering design criteria, realistic constraints, economic, environmental and social impact of the solutions.

- **PEO-4:** Work either individually or through interdisciplinary teams and communicate effectively using graphic, verbal and written techniques to explain and defend their solutions to technical and non-technical audiences.

A.2 Mapping between Mission Vs PEOs

Mapping between Mission Vs PEOs

PEOs	Mission-1	Mission-2	Mission-3	Mission-4
PEO 1	√	√		√
PEO 2			√	√
PEO 3		√		√
PEO 4			√	√

A.3 Program Outcomes (POs)

Program Outcomes (POs)

POs	Knowledge Profile	Description
PO 1	**Engineering Knowledge**	Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem Analysis**	Identify, formulate, research literature and analyze complex engineering problems searching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
PO 3	**Design/ development of solutions**	Design solutions for complex engineering problems and design systems, components and processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.
PO 4	**Investigation**	Conduct investigations of complex problems using research based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.
PO 5	**Modern Tool Usage**	Create, select and apply appropriate techniques, resources and modern engineering and IT tools, including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO 6	**The Engineer and Society**	Apply reasoning informed by contextual knowledge to assess the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.
PO 7	**Environment and Sustainability**	Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
PO 8	**Ethics**	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
PO 9	**Individual and Team work**	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

PO 10	**Communication**	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
PO 11	**Project Management and Finance**	Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and multidisciplinary environments.
PO 12	**Lifelong learning**	Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context to technological change.

A.4 Mapping between PEOs Vs POs

Mapping between PEOs Vs POs

POs	Knowledge	PEO 1	PEO 2	PEO 3	PEO 4
PO 1	Engineering Knowledge	√			
PO 2	Problem Analysis		√		
PO 3	Design/ development of solutions	√		√	
PO 4	Investigation		√		
PO 5	Modern Tool Usage	√	√		
PO 6	The Engineer and Society			√	
PO 7	Environment and Sustainability			√	
PO 8	Ethics			√	
PO 9	Individual and Team work				√
PO 10	Communication				√
PO 11	Project Management and Finance				√
PO 12	Lifelong learning		√		√

A.5 Mapping between COs Vs POs

Table: Mapping between COs Vs POs

Course Code	Engineering knowledge	Problem Analysis	Design/ development of solutions	Investigation	Modern Tool Usage	The Engineer and Society	Environment and Sustainability	Ethics	Individual and Team work	Communication	Project Management and Finance	Lifelong learning
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
HSS 101	√	√	√	√	√		√			√		
HSS 111(A)	√	√			√	√	√	√	√			
HSS 111(B)	√					√		√	√			
PHY 101	√	√	√									√
MTH 101	√	√	√									
EEE 101	√	√							√			
PHY 102	√	√		√	√				√			
EEE 102	√	√							√			
HSS 102										√		√
PHY 103	√	√										√
EEE 103	√	√	√									
EEE 105	√	√	√	√	√							
ECN 101		√								√		√
EEE 104	√	√		√	√							
EEE 106	√	√	√						√			
MTH 201	√	√	√									
EEE 201	√	√	√									
EEE 203	√	√										√
EEE 202	√	√	√	√				√	√	√		√
MTH 203	√	√	√									

Course Code	Engineering knowledge	Problem Analysis	Design/ development of solutions	Investigation	Modern Tool Usage	The Engineer and Society	Environment and Sustainability	Ethics	Individual and Team work	Communication	Project Management and Finance	Lifelong learning
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
EEE 205	√	√	√									
EEE 207	√	√	√	√								
EEE 209	√	√										
EEE 200	√		√	√	√							
EEE 206	√	√	√						√			
EEE 208	√	√	√	√								
EEE 210	√	√							√			
MTH 301	√	√	√									
EEE 301	√	√		√								
EEE 303	√	√	√									√
EEE 305	√	√							√			
EEE 307	√	√				√			√	√		
EEE 300	√		√	√	√	√		√				√
EEE 302	√	√	√		√	√			√			
HSS 303								√	√	√		
EEE 309	√	√	√									√
EEE 311	√	√		√	√							√
EEE 313	√	√	√	√	√							
EEE 317	√	√	√	√								√
EEE 312	√		√	√	√				√	√		√
EEE 314	√	√	√	√	√				√	√	√	
EEE 318	√	√		√	√							
EEE 401	√	√	√				√					
EEE 403	√	√	√									√

Course Code	Engineering knowledge	Problem Analysis	Design/ development of solutions	Investigation	Modern Tool Usage	The Engineer and Society	Environment and Sustainability	Ethics	Individual and Team work	Communication	Project Management and Finance	Lifelong learning
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
EEE 404	√	√	√	√					√			√
EEE 453		√	√		√							
EEE 455	√	√						√				√
EEE 454		√	√	√	√							
EEE 456	√	√						√	√			
EEE 411	√	√					√	√				
EEE 431	√	√			√							√
EEE 413	√	√	√	√								
EEE 423	√		√	√	√							
EEE 433	√	√	√	√								
EEE 414	√	√	√	√					√	√		
EEE 424	√		√									
EEE 434	√	√	√	√	√				√	√		
EEE 415	√	√	√	√								
EEE 425	√	√	√									
EEE 435	√	√	√									
EEE 437	√	√	√	√		√						√
CSE 447	√	√	√	√	√				√	√		
EEE 438	√	√	√	√	√				√	√		
CSE 448	√	√	√	√	√				√	√		
EEE 429		√	√	√				√				√
EEE 439	√	√	√	√		√						√

Appendix B

Sample Course Outline

University of Asia Pacific (UAP)
Department of Electrical and Electronic Engineering (EEE)

Course Outline

Program:	Electrical and Electronic Engineering (EEE)
Course Title:	Signals and Linear Systems
Course Code:	EEE 303
Semester:	Fall-2017
Level:	3rd year 1st Semester
Credit Hour:	3.0
Name & Designation of Teacher:	Khandaker Sultan Mahmood, Assistant Professor, Department of EEE
Office/Room:	Department of EEE, 5th floor, UAP campus
Class Hours:	Sunday: 12:30 -2:00 p.m. & Tuesday: 8:00 -9:30 p.m., 12:30 - 2:00 p.m, Thursday: 8:00 - 9:30 p.m
Consultation Hours:	Monday, Tuesday and Wednesday: 11:00 am-03:30 p.m.
E-mail:	khandaker.eee@uap-bd.edu
Mobile:	01717063839
Rationale:	Required course and a pre-requisite to EEE 309 in the EEE program
Pre-requisite (if any)**:**	EEE 205 & MATH 203
Course Synopsis:	Classification of signals and systems; Properties of Linear Time Invariant (LTI) systems; Time domain analysis of LTI systems; Impulse response - convolution integral, Frequency domain analysis of LTI systems; Fourier series; Fourier transformation; Applications of time and frequency domain analyses; Laplace transformation;

Course Objectives (CO):

The objectives of this course are to:

1. Deliver clear understanding on signals and its classification
2. Provide clear understanding on System and its classification
3. Show how to express a system through its input and other parameters
4. Show time domain analysis of periodic signals through Fourier series
5. Show Frequency domain analysis of Signals and systems using Fourier transform and Laplace Transform

Learning Outcomes (LO):

Upon completion of the course, the students will be able to:

1. Interpret different types of signals & systems and distinguish between them.
2. Formulate signals mathematically and sketch it graphically.
3. Analyze a system and compute its output from known systems parameters.
4. Breakdown the periodic signals into its frequency components and interpret the results for Electrical Engineering.
5. Express & analyze signals & systems in frequency and s-domain.

Teaching-learning and Assessment Strategy: Lectures, assignments, quizzes, exams

Linkage of LO with Assessment Methods & their Weights:

LO	Assessment Method	(%)
1 – 5	Quiz	10
1 – 5	Class attendance	10
4, 5	Assignment	10
1, 2, 3	Midterm Exam	20
1 – 5	Final Exam	50

Minimum attendance: 70% class attendance is mandatory for a student in order to appear at the final examination.

Mapping of Course LO and Generic Skills:

Learning Outcome (LO) of the Course	Generic Skills* (Appendix-1)											
	1	2	3	4	5	6	7	8	9	10	11	12
Interpret different types of signals & systems and distinguish between them.	√											
Formulate signals mathematically and sketch it graphically.	√	√										
Analyze a system and compute its output from known systems parameters.		√	√									√
Breakdown the periodic signals into its frequency components and interpret the results for Electrical Engineering.			√									√
Express & analyze signals & systems in frequency and s-domain.			√									√

Lecture Schedule

Lecture(s)	Topics	Reading Materials
1, 2	Signals and its Classification	S. S. Soliman: Ch 1
3, 4	Basic operation on signals, elementary signals, Representation of signals using impulse function	S. S. Soliman: Ch 1
	QUIZ 1	
5, 6	Systems and its classification.	S. S. Soliman: Ch 2
7, 8, 9	Properties of Linear Time Invariant (LTI) systems: Linearity, causality, time invariance, memory, stability, invertibility. Time domain analysis of LTI systems: Impulse response - convolution integral, determination of system properties	S. S. Soliman: Ch 2
	QUIZ 2	
10	Review of Midterm Syllabus	
	MIDTERM EXAM	
11, 12	Frequency domain analysis of LTI	S. S. Soliman: Ch 3

	systems: Fourier series- properties,	
13, 14	Harmonic representation, system response, frequency response of LTI systems	S. S. Soliman: Ch 3
15, 16, 17	Fourier transformation- properties, system transfer function, system response and distortion-less systems.	S. S. Soliman: Ch 4
18, 19, 20	Applications of time and frequency domain analyses: solution of analog electrical and mechanical systems, amplitude modulation and demodulation, time-division and frequency-division multiplexing.	S. S. Soliman: Ch 4
	QUIZ 3	
21	Laplace transformation: properties,	S. S. Soliman: Ch 5
22, 23	Inverse transform, solution of system equations, system transfer function,.	S. S. Soliman: Ch 5
24	System stability and frequency response and application	S. S. Soliman: Ch 5
25, 26	Problem solving class	Exercise of S. S. Soliman: Ch 1 to Ch 5
	QUIZ 4	
27, 28	Review of Final Exam Syllabus	
	FINAL EXAM	

Required Reference(s): i) Samir S. Soliman, Mandyam D. Srinath, "Continuous and Discrete Signals and Systems", (2nd Edn) Prentice Hall, USA

Recommended Reference(s): i) Alan V. Oppenheim, Alan S. Willsky, with S. Hamid, Signals and Systems (2nd Edition), Publisher: Pearson, (1996).
ii) B. P. Lathi, Linear Systems and Signals (*2nd* Ed.), Oxford University Press., NY, USA.

Grading System: As per the approved grading scale of University of Asia Pacific (Appendix-2).

Student's responsibilities: Students must come to the class prepared for the course material covered in the previous class(es).
They must submit their assignments on time.
They must be aware of the *Plagiarism Policy* as spelt out in the curriculum.
No late or partial assignments will be acceptable. There will be no make-up quizzes.

Prepared by	**Checked by**	**Approved by**
Khandaker Sultan Mahmood Assisstant Professor Department of EEE	Curriculum Committee Department of EEE	Head/Dean

Appendix-1: Generic Skills
Washington Accord Program Outcomes (PO) for Engineering:

No.	Generic Skills	Differentiating Characteristic
1	Engineering Knowledge	Breadth and depth of education and type of knowledge, both theoretical and practical
2	Problem Analysis	Complexity of analysis
3	Design/ development of solutions	Breadth and uniqueness of engineering problems i.e. the extent to which problems are original and to which solutions have previously been identified or codified
4	Investigation	Breadth and depth of investigation and experimentation
5	Modern Tool Usage	Level of understanding of the appropriateness of the tool
6	The Engineer and Society	Level of knowledge and responsibility
7	Environment and Sustainability	Type of solutions.
8	Ethics	Understanding and level of practice
9	Individual and Team work	Role in and diversity of team
10	Communication	Level of communication according to type of activities performed
11	Project Management and Finance	Level of management required for differing types of activity
12	Lifelong learning	Preparation for and depth of Continuing learning.

Appendix-2: Grading Policy

Numeric Grade	Letter Grade	Grade Point
80% and above	A+	4.00
75% to less than 80%	A	3.75
70% to less than 75%	A-	3.50
65% to less than 70%	B+	3.25
60% to less than 65%	B	3.00
55% to less than 60%	B-	2.75
50% to less than 55%	C+	2.50
45% to less than 50%	C	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00

Appendix C

Table of Specification for Exam Question

TEMPLATE: TABLE OF SPECIFICATIONS FOR EXAM QUESTIONS

University of Asia Pacific
Department: EEE
Final Examinations, Semester: Spring-2017
Program: B.Sc. in EEE

Course Code: **Course Title:** **Credit Hr:**
Total Marks:
Time:
Name & Designation of the Examiner:

Learning Outcomes (LO):
LO 1:
LO 2:
LO 3:
LO 4:
LO 5:

Levels in Bloom's Cognitive Domain:

C1: Remember *C2: Understand* *C3: Apply* *C4: Analyze* *C5: Evaluate* *C6: Create*

Question No.	**Learning Outcome (LO) of the Course**	**Level in Bloom's Cognitive Domain along with Allocation of Marks**					
		C1	C2	C3	C4	C5	C6
Q1 (a)							
Q1 (b)							
Q2 (a)							
Q2 (b)							
Q3 (a)							
Q3 (b)							
Q3 (c)							
Q4							

Q5							
Q6							
Q7							
Q8							
Total Allocation of Marks							

Signature of the Examiner

Date:

Appendix D

Moderator Report Template of Question Paper

TEMPLATE: TABLE OF SPECIFICATIONS FOR EXAM QUESTIONS

University of Asia Pacific
Department: EEE
Final Examinations, Semester: Spring-2017
Program: B.Sc. in EEE

Course Code: **Course Title:** **Credit Hr:**
Total Marks:
Time:
Name & Designation of the Moderator(s):

A. Evaluation of Question Paper:

SL	ITEM	Accepted as it is	Minor correction	Major Correction
1.	Relevance of the questions according to six levels of Cognitive domain in Bloom's Taxonomy			
2.	Reflection of the learning outcomes in the questions provided			
3.	Breadth of the course material supposed to be covered during the semester			
4.	Clarity of the questions provided			
5.	Distribution of marks allocated for each question			
6.	Correctness of the grammar and spelling			
7.	Format followed as prescribed by the department			

B. Suggested modifications (if necessary) for the questions

Question No Suggestions:

Question No Suggestions:

Question No Suggestions:

C. Overall Comments of the Moderator(s)

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Moderated and Accepted ☐

Date (Answer script received):

Date (Answer script Delivered):

Signature of the Moderator(s)

Appendix E

Scrutinizer Report template on Answer Scripts

TEMPLATE: TABLE OF SPECIFICATIONS FOR EXAM QUESTIONS

University of Asia Pacific
Department: EEE
Final Examinations, Semester: Spring-2017
Program: B.Sc. in EEE

Course Code: **Course Title:** **Credit Hr:**
Total Marks:
Time:
Name & Designation of the Scrutinizer(s):

Name & Designation of the Examiner:

A. Scrutiny of Answer Scripts

SL	ITEM	Corrections needed	Corrections not needed	Remarks
1.	Examiner's signature was given on answer scripts			
2.	Invigilator's signature was given on answer scripts			
3.	Cover page of the answer script (Q. No./Full Marks/Marks Obtained) was filled by examiner.			
4.	Calculation of total marks in the cover page of answer script is correct			
5.	Marks were given for each part of a question i.e.1(a); 1(b); 1(c)			
6.	No answer was left unmarked/not graded.			
7.	Errors, spelling or grammatical mistakes were highlighted by the examiner			
8.	There is no anomaly between answer script marks and the marks in printed report from automation			

B. Overall Comments of the Scrutinizer(s) [if any]

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.....

.....

Signature of Scrutinizer:

Date (Answer script received):

Date (Answer script Delivered):

Appendix F

Miscellaneous Documents

F.1 Academic Calendar

University of Asia Pacific
Academic Calendar **Fall-2017**

UAP

Academic calendar

Students meet Advisor: **15 October 17**
Registration week: **8 - 12 October 17**
Orientation for 1st Year 1st Semester: **14 October 17**
Classes start for Fall 2017: **15 October 17**
Declaration of merit- based waiver list: **23 Oct 17**
Last date of Application for VC's Special waiver: **24 Oct 17**
Mid Semester Exams: **3 – 9 Dec 17**
Publishing of Mid semester Results: **17 December 17**
Students meet Advisor: **17 Dec 17** & **17 Jan 18**
Preparatory leave: **4 - 10 February 18**
Semester Final Exams**:** **11-24 February 18**
Publishing of results**:** **6 March 18**
Repeat Exams (RE): **12 – 15 March 18**
Publishing of Results after RE: **18 March 18**
Registration for Spring- 2018: **18-22 March 18**

Registration and other payment dates (last date)

A) Registration fee (1st Installment) – **9 October 17**
B) 2nd Installment – **19 November 17**
C) 3rd Installment – **15 January 18**

Holidays

1 Oct 2017: Muharram (Ashura)*
1 Dec 2017: Eid-e-Miladunnabi*
10-16 Dec 2017: Winter Vacation
16 Dec 2017: Victory Day
25 Dec 2017: Christmas Day
21 Feb 2018: International Mother Language Day
17 Mar 2018: Birthday of the Father of the Nation Bangabandhu Sheikh Mujibur Rahman
26 Mar 2018: Independence Day
14 Apr 2018: Bengali New Year
25 Apr 2018: Shab E Miraj*

Classes for Spring- 2018 start on: **1 April 2018**

* - Subject to sighting of moon

October '17

S	M	T	W	T	F	S	
1	2	3	4	5	6	7	
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	1
22	23	24	25	26	27	28	2
29	30	31					3

November '17

S	M	T	W	T	F	S	
			1	2	3	4	
5	6	7	8	9	10	11	4
12	13	14	15	16	17	18	5
19	20	21	22	23	24	25	6
26	27	28	29	30			7

December '17

S	M	T	W	T	F	S	
31					1	2	
3	4	5	6	7	8	9	Mid
10	11	12	13	14	15	16	WV
17	18	19	20	21	22	23	8
24	25	26	27	28	29	30	9

January '18

S	M	T	W	T	F	S	
	1	2	3	4	5	6	10
7	8	9	10	11	12	13	11
14	15	16	17	18	19	20	12
21	22	23	24	25	26	27	13
28	29	30	31				14

February '18

S	M	T	W	T	F	S	
				1	2	3	
4	5	6	7	8	9	10	Prep
11	12	13	14	15	16	17	Exam
18	19	20	21	22	23	24	Exam
25	26	27	28				

March '18

S	M	T	W	T	F	S	
				1	2	3	
4	5	6	7	8	9	10	Result
11	12	13	14	15	16	17	RE
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	

April '18

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

F.2 Organization Structure

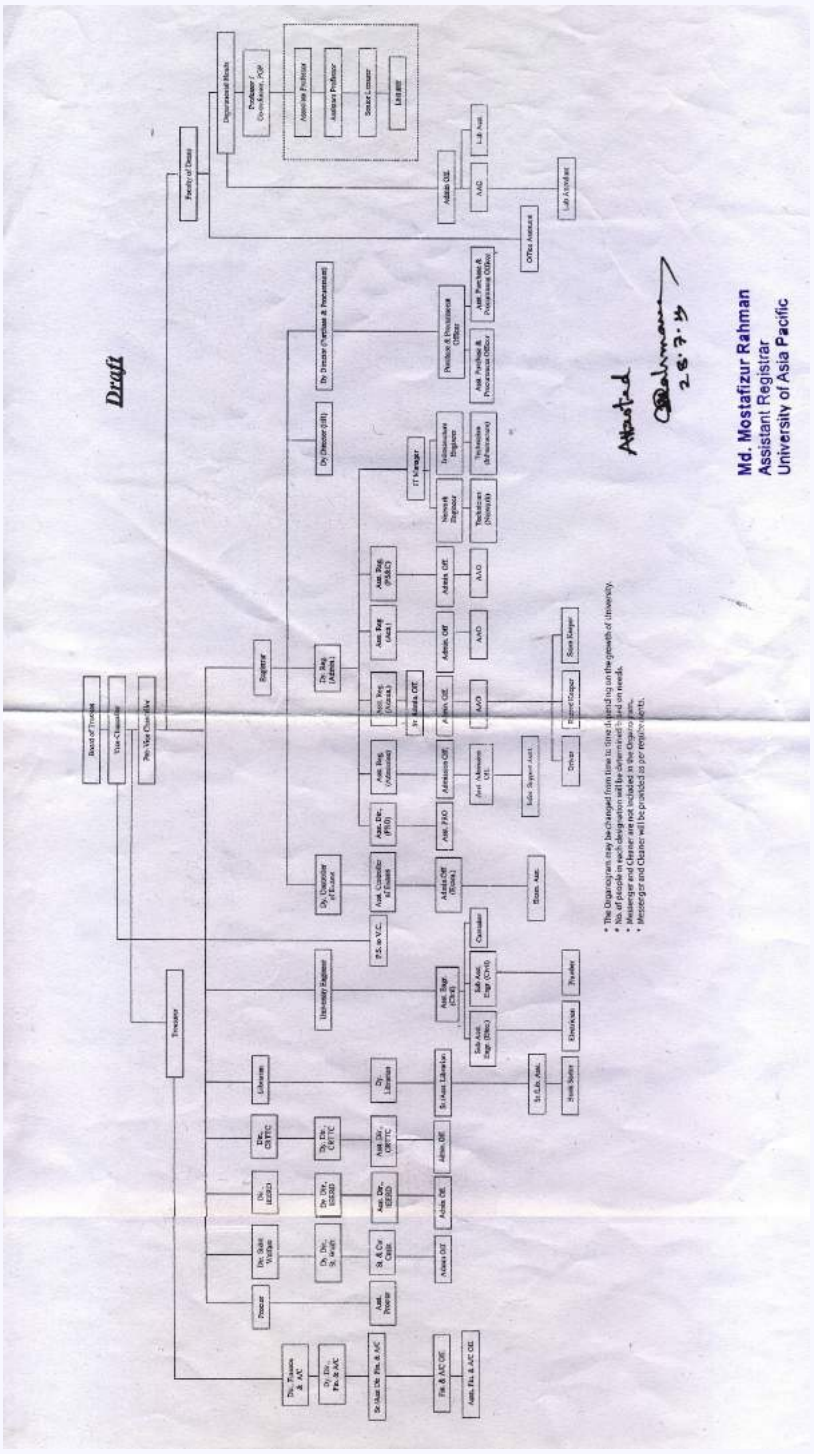

Figure F.1: Organizational structure of UAP

F.3 Member of Professional Society (Faculty)

Name of Faculty Member	Member	Name of Professional Society
Dr. Kazi Mohiuddin Ahmed	Member	Institute of Electrical and Electronics Engineers Journal (IEEE), USA
	Member	IEICE, Japan
	Fellow	Institution of Engineers, Bangladesh (IEB)
	Member	Bangladesh Computer Society.
	Founder-Member	Bangladesh Electronic Society.
	Member	Advisory Board, WPMC, Japan
	Member	Advisory Committee of the New Generation Mobile Projects, Communications Research Lab, MPHPT, Japan, for 2002-2004
Dr. Tapan Kumar Chakraborty	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
	Fellow	Institution of Engineers, Bangladesh (IEB)
Mr. G. R. Ahmed Jamal	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
	Life Member	Bangladesh Physical Society

Mr. A.H.M. Zadidul Karim	Member	Institution of Engineers, Bangladesh (IEB)
Mr. M. Abdullah Al-Amin	Member	Institution of Engineers, Bangladesh (IEB)
Dr. Tasnia Hossain	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
	Member	APECE-EEE Alumni Association, DU
Mr. Md. Sazzadur Rahman	Professional Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
	Member	IEEE Electron Device Society (EDS)
Mr. Md. Masum Howlader	Member	KIC Inno Energy , Europe
Mr. Mohammad Rokonuzzaman	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
Mr. K.M.U. Ahmed	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
	Member	Institution of Engineers, Bangladesh (IEB)
Dr. MD. Shahrukh Adnan Khan	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
	Member	Nottingham Research Group, Faculty of Engineering (UK, Malaysia, China)

Dr. Hafiz Ahmed	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)
Tanima Tasmin Chowdhury	Member	Signal Processing Society, IEEE
	Member	Women in Engineering, Affinity Group, IEEE Engineering in Medicine and Biology Society
Mr. Shahinur Rahman	Member	Women in Engineering, Affinity Group
Mr. Sakhawat Hossen Rakib	Member	Institute of Electrical and Electronics Engineers Journal (IEEE)

F.4 Honors/Awards Received (Faculty)

Honors/Awards received by the Faculty Members

Name	Name of the award
Dr. Tapan Kumar Chakraborty	1. Received University GOLD MEDAL in 1988 for obtaining 1st position in the M. Engg. Course in the Dept of Electrical Engineering at University of Roorkee (Now IIT Roorkee), India. 2. Received Japanese government scholarship (Monbusho) to pursue higher studies leading to Ph.D. 3. Received Indian Government scholarship to pursue higher studies in Masters level.
Mrs. Salma Nazia Rahman	1. Board of Governors (BOG) Gold Medal (University Gold Medal) from Rajshahi University of Engineering & Technology (RUET), 2006. 2. Gold Medal from Bangladesh International School & College, Jeddah for highest distinctions in the institute in H.S.C examination. 3. Gold Medal from Bangladesh International School & College, Jeddah for distinctions in the institute in S.S.C examination.
Mr. Md. Masum Howlader	1. "Champion" and "1st Runner up" with an prize money of "50,000TK" in Power in Energy Hackathon 2017, Organized by Ministry of Power, Energy and Mineral Resources (MPEMR) 2. KIC Inno Energy (organ of European Union) scholarship for masters in Smart Electrical Network and Systems (SENSE) (2012).
Mr. Muhammad Ahad Rahman Miah	1. Awarded 'Her Majesty the Queen Scholarship' of Thailand to pursue Master studies at AIT. 2. Awarded "Vice-Chancellor's" Gold medal for Undergraduate result at UAP.
Mr. Md. Moshiur Rahman Sourov	University Vice Chancellor's Gold Medal for highest marks among UAP graduates of 2011.
Mr. Mohammad Rokonuzzaman	1. Erasmus Mundus scholarship for masters in Space Science and Technology (2013-2015). 2. KIC InnoEnergy scholarship for masters in Environomical Pathways for Sustainable Renewable Energy (2012).

Mr. Anas Syed	"Champion" and "1st Runner up" with an prize money of "50,000TK" in Power in Energy Hackathon 2017, Organized by Ministry of Power, Energy and Mineral Resources (MPEMR)
Dr. MD Shahrukh Adnan Khan	1. Dean's Scholarship for PhD (2011) by University of Nottingham. Note: Selected as the only student from his batch. 2. Enhanced 75% High Achiever's Scholarship (2008-2011) by University of Nottingham. Note: *The only International Student in the history of Nottingham University to get 75% Enhanced High Achiever's scholarship due to the outstanding academic record throughout the years of his bachelor degree.* 3. "2010-2011, Student of the year" by University of Nottingham. 4. "2010-2011, Best Student, Faculty of Engineering" by University of Nottingham.
Mr. Shaikh Rashedur Rahman	Chancellor's Gold Medal 2012.
Dr. Hafiz Ahmed	Best PhD Theses Award in France from GDR-MACS, A Govt. organization
Mr. Md. Ibrahim Khalil	Qualification scholarship to study MSc at Karlsruhe Institute of Technology (KIT), Germany
Mr. Md. Khairul Alam	1. **First Prize** winner on Amps and Speakers Contest 2016 organized by instructables.com and sponsored by Pi Supply and justboom. 2. **First Prize** winner on Egg Contest 2016 organized by instructables.com and sponsored by Evil Mad Scientist. 3. **Second Prize** winner on Raspberry Pi Contest 2016 organized by instructables.com and sponsored by Dexter Industries 4. **Second Prize** winner on Tech Contest 2016 organized by instructables.com and sponsored by Hobby King. 5. **Second Prize** winner on Internet of Things Contest 2016 organized by instructables.com and sponsored by Thimble. 6. **Third Prize** winner on Circuits Contest 2016 organized by instructables.com and sponsored by Autodesk. 7. **Third Prize** winner on IoT Builders Contest organized by instrtables.com and sponsored by IBM Watson IoT. 8. **Runner Up** on Automation Contest 2016 organized by instructables.com and sponsored by Sparkfun electronics.

	9. **Runner Up** on Robotics Contest organized by instructables.com and sponsored by Sparkfun electronics. 10. **Runner Up** on LED Contest organized by instructables.com and sponsored by Tinkernut. 11. **Runner Up** on Lamps and Lighting Contest 2016 organized by instructables.com and sponsored by Dewalt Tools. 12. **Runner Up** on Wearable Tech Contest organized by instructables.com and sponsored by Sparkfun Electronics. 13. **Runner Up** on Safety Challenge organized by instructables.com and sponsored by Samsung. 14. **Runner Up** on Internet of voice challenge organized by hackster.com and sponsored by Amazon and Raspberry Pi. 15. Championship Award, Power and energy Hackathon2017 in solving Problem 7: Affordable access to electricity covering all the remote areas.
Mr. Khandaker Sultan Mahmood	1. Daily Star award for getting 3 A's in A-level Examination. 2. Daily Star award for getting 7 A's in O-level Examination.
Mr. Sakhawat Hossen Rakib	1. Championship Award, Power and energy Hackathon2017 in solving Problem 7: Affordable access to electricity covering all the remote areas 2. 1st runner up, Power and energy Hackathon2017, in solving Problem 1: Energy Efficient Lifestyle 3. 1st position in project exhibition Bangladesh Physics Olympiad at Dhaka University carzon hall 4. 2nd position on project exhibition 1st Bangladesh Electronics Olympiad at Dhaka University Carzon hall 5. 3rd position on project exhibition at '67th engineers day' 2015 at institution of engineers Bangladesh(IEB) 6. Championship award on project exhibition 2014 in '10 years celebration of EEE at UAP
Mr. Kazi Mahtab Kadir	Received Texas Public Educational Grant for fiscal year 2012-2013 at University of Houston, Houston, TX, USA.

F.5 Conference, Seminars, Workshops organized by the department

Conference, Seminars, Workshops organized by the department in the last five years

Sl. No.	Name of the conference/ seminar/ workshop	Year	Sponsors
1.	Seminar on "Data Center Technology and Career Counseling" was arranged by IEEE UAP Student Branch on 3rd May, 2017. Keynote Speaker: Mr. Khan Muhammad Fuad Bin Enayet Assistant General Manager, Fiber@Home Limited.	2017	Self funded
2.	Seminar on "Smart Grid: Self-healing and Energy Efficient Power Grid" was arranged by IEEE UAP Student Branch on 27th April, 2017. Keynote Speaker: Dr. Jahangir Hossain Associate Professor, Department of Engineering, Faculty of Science, Macquaire University, NSW 2109, Australia.	2017	Self funded
3.	Seminar on "A Brief History of Modern Cosmology" was arranged by IEEE UAP Student Branch on 14th December, 2016. Keynote Speaker: Dr. Bijon Saha, D.Sc. Leading Research Fellow, Laboratory of Information Technologies Joint Institute of Nuclear Research, Dubna, Moscow, Russia	2016	Self funded
4.	Workshop on 'Writing Research Paper using LaTeX' was arranged by IEEE UAP Student Branch on 6th December, 2016. Keynote Speaker: Mr. Manobendu Sarker Assistant Professor, Department of EEE, University of Asia Pacific	2016	Self funded

5.	Seminar on “Image Sensors: An Overview” was arranged by Project Club, EEE on 30th November, 2016. Keynote Speaker: Dr. Khan Lutful Kabir.	2016	Self funded
6.	Workshop on “Microcontroller: Phase-1” was arranged by IEEE UAP Student Branch on 10th August, 2016. Keynote Speaker: Md. Khairul Alam Lecturer, Department of EEE, University of Asia Pacific	2016	Self funded
7.	Workshop on “Microcontroller & Embedded System” was arranged by Project Club, EEE on 9th January, 2016. Keynote Speaker: Md. Khairul Alam Lecturer, Department of EEE, University of Asia Pacific	2016	Self funded
8.	Seminar on “Short Pulse Propagation in Optical Waveguides” was arranged by The Institute of Energy, Environment and Development (IEED) and University of Asia Pacific (UAP) on 1st August, 2013. Keynote Speaker: Engr. Kaiser R. Khan, Ph.D, P Eng.	2013	Self funded
9.	Seminar on “Growth Dynamics of Telecommunication Sector in Bangladesh” was arranged by The Institute of Energy, Environment and Development (IEED) and University of Asia Pacific (UAP) on 6th February, 2012. Keynote Speaker: Prof. Dr. Md. Rokonuzzaman School of Engineering and Computer Science, Independent University of Bangladesh, Dhaka	2012	Self funded

Appendix G

Publication List of Existing Faculty Members

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