

SELF-ASSESSMENT REPORT

B.Sc. in Computer Science and Engineering



Department of CSE
University of Asia Pacific



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ABBREVIATIONS

CLO	Course Learning Outcomes
EPRT	External Peer Review Team
HEQEP	Higher Education Quality Enhancement Project
ILO	Intended Learning Outcome
IQAC	Institutional Quality Assurance Cell
KPI	Key Performance Indicator
MoE	Ministry of Education
MoU	Memorandum of Understanding
PSAC	Program Self-Assessment Committee
QA	Quality Assurance
QAC	Quality Assurance Committee
RPI	Research Performance Indicators
SA	Self-Assessment
SAC	Self-Assessment Committee
SAR	Self-Assessment Report
TPI	Teaching Performance Indicators
UGC	University Grants Commission
UIC	University Industry Collaboration
VC	Vice Chancellor

CHAPTER I

INTRODUCTION

1.1 Significance of Program Self-Assessment

Self-Assessment reporting, which can be defined as a systematic process to assess organizational or institutional quality by monitoring and evaluating various aspects of the programs offered by the particular entity- is one of the core activities of institutional quality assurance system as well as one of the most powerful means for any organization to understand and improve its' performance. Throughout the world, it is apparent that the subject of assessment is becoming more and more central to the whole process of higher education, as we seek to find ways to assure and enhance the quality of educational provision, with a changed focus on outcomes rather than on input. With the changes in higher education landscape, it is obligatory for University graduates to have a positive mindset besides academic as well as technical skills and competence in order to find a good fit into the social system.

The general objective of the University Self-Assessment Program is to identify the strengths and weaknesses of the particular institution by gathering information on activities related to quality assurance through discussions with major stakeholders and analyzing those to identify the extent to which each quality standard is met. The specific objectives are to:

1. Understand the current state of students' learning and identify their learning needs in order to develop the required skills
2. Assess the teaching-learning capability of the entity to attain the learning objectives
3. Review and evaluate the existing curriculum and teaching-learning methods
4. Evaluate the effectiveness of academic guidance and counseling
5. Identify the areas and issues that need to be addressed and improved to meet quality standards
6. Create a basis for external assessment and validation as well as further improvement of the program offering entity
7. Provide guidelines or proper directions to the program offering entity for strategic planning
8. Ensure the maintenance of quality standards by addressing the needs and opinions of the major stakeholders
9. Identify and summarize the major progress and drawbacks of the entity and ways to overcome the drawbacks

1.2 Process of Assessment

The complete self-assessment process is comprised of several smaller sub-processes accomplished by the Program Self-Assessment Committee (**PSAC**). Upon receiving the request from IQAC director, the Head of CSE, UAP set a meeting with a small group of faculty members forming the core PSAC. Participants of this meeting as well as members of the core PSAC committee were: Dr. Md. Rashedul

Islam (Associate Professor and Head), Dr. Nasima Begum (Assistant Professor), and Abdul Kawsar Tushar (Lecturer). At this very first meeting the complete Program Self-Assessment Committee was formed by selecting other faculty members of PSAC and a general writing guideline was developed.

Two days later the second PSAC meeting was set by the PSAC head Dr. Md. Rashedul Islam with all the members of PSAC committee. In this meeting three sub committees (namely- Survey committee, Writing Committee, and Review Committee) were formed in order to conduct the whole self-assessment process in a scheduled, organized manner. The formation of the committees along with the names and designations of the members was as follows:

	Name	Designation	PSAC designation
Core PSAC	Dr. Md. Rashedul Islam	Associate Professor	Head
	Dr. Nasima Begum	Assistant Professor	Supervisor
	Abdul Kawsar Tushar	Lecturer	Co-supervisor
Survey Committee	A.S Zaforullah Momtaz	Assistant Professor	Member
	Abdullah Al Omar	Lecturer	Member
	Akm Ashiquzzaman	Lecturer	Member
Writing Committee	Dr. Abdul Hamid	Associate Professor	Member
	A.S Zaforullah Momtaz	Assistant Professor	Member
	Dr. Nasima Begum	Assistant Professor	Member
	Abdul Kawsar Tushar	Lecturer	Member
	Anika Anwar	Lecturer	Member
	Hanif Bhuiyan	Lecturer	Member
	Imran Bin Azad	Lecturer	Member
	Gazi Md. Hasnat Zahan	Lecturer	Member
	Afia Afrin	Lecturer	Member
	Abdullah Al Omar	Lecturer	Member
	Shaheer Mahadee Jilane	Lecturer	Member
	Akm Ashiquzzaman	Teaching Assistant	Member
Review Committee	Dr. Bilkis Jamal Ferdosi	Associate Professor	Member
	Dr. Abdul Hamid	Associate Professor	Member
	Shammi Akhtar	Assistant Professor	Member
	Dr. Muhammad Firoz Mridha	Assistant Professor	Member
	Dr. Shahera Hossain	Assistant Professor	Member
	Md. Akhtaruzzaman Adnan	Assistant Professor	Member
	Molla Rashied Hussein	Assistant Professor	Member

	Nadeem Ahmed	Assistant Professor	Member
	Dr. Md. Rajibul Islam	Assistant Professor	Member
	Jahir Ibna Rafiq	Lecturer	Member

Thus two different but mutually dependent subcommittees were formed and rest of the journey is nothing but the story of them working together under the supervision of the core PSAC. Members of survey committee took necessary initiatives as per plan to survey the students, non-academic staffs, and alumni. Alumni were given responsibilities to carry out a survey on their respective employer. Five sets of questionnaires were administered by the survey committee to conduct the survey on five primary stakeholders. A total number of 365 respondents comprising of 245 students, 24 faculty members, 78 alumni, 19 employers and 8 non-academic staff provided feedback in the survey process.

Following cross functional work-chart depicts the whole process at a glance.

Table 1-1. Process of Assessment.

Process: Self-Assessment			
Date & Subject	Core PSAC	Survey Committee	Writing Committee
24/10/2017 PSAC meeting 1	Formation of the PSAC and developing the general SAR guidelines	N/A	N/A
26/10/2017 Workshop on self-assessment report writing-1	Formation of two different but mutually dependent sub committees and distribution of necessary resources	Developing questionnaires for survey, fixation of a suitable date for the alumni meeting and notifying the major stakeholders	Allocating 12 different chapters to members and sharing resources
27/11/2017 Workshop on self-assessment report writing-1	Proposing a draft work schedule to complete the whole task in a structured way	Sharing the survey responses in conducted in between meeting 2 & meeting 3	Sharing a draft, 50% completed report, open discussion on the whole writing procedure
26/12/2017 Workshop on self-assessment report writing-1	Reviewing the first version of SA report	Reviewing and analyzing the first version of SA report	Submitting the first complete draft and sharing key points
03/01/2018 Final workshop on self-assessment report writing	Final review and correction	Final review and correction	Adjusting the corrections as suggested by other members

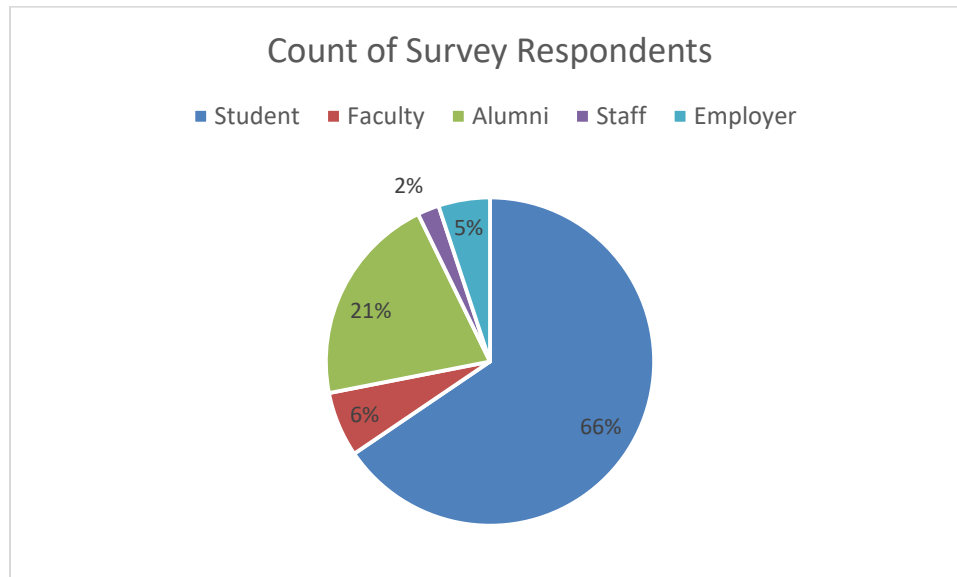


Figure 1-1. Distribution of survey respondents.

1.3 Overview of the University

University of Asia Pacific (UAP) was established in 1996 with a vision to enhance the opportunities for higher education in Bangladesh. The University, under the Private University Act 1992, started its operation in 1996 by offering a four-year Bachelor Degree Programs in Computer Science and Technology and Business Administration only. Now UAP offers undergraduate programs in nine disciplines and post-graduate programs in eight disciplines. Its curriculum has been approved by the University Grants Commission of the Government of the People's Republic of Bangladesh.

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 which was 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 the 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 3-stimulating environment for education having standard classrooms, labs, a large auditorium, library, reading rooms etc. with enriched facilities. However, as the “city campus” was

not enough to accommodate the growing size of UAP, two floors were rented at a giant building adjacent to the permanent campus for BBA and Law Department.

1.3.1 Vision and Mission of the University

Vision

UAP holds steadfastly its' passion to do better and better in fulfilling our young generations' 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.

1.3.2 University Administration

Vice-Chancellor

Prof. Dr. Jamilur Reza Choudhury
B.Sc.(Engg.), Civil (BUET), M.Sc.(Engg.)
(Advanced
Structural Engineering), Ph.D. (University of
Southampton),
Doctor of Engineering (Honoris Causa)
Manchester University, UK. Fellow,
Bangladesh Computer Society, Fellow,
Bangladesh Academy of Sciences.
Fellow, Institution of Engineers (Bangladesh)
Email: vc@uap-bd.edu

Deputy Controller of

Examinations

**Mr. Mohammad Zahirul
Islam**

Pro Vice- Chancellor

Prof. M. R. Kabir
Ph.D, Catholic University of Leuven, Belgium,
M.Sc. Engg. Post Graduate Diploma,
B.Sc. Engg. (Civil)
Fellow, IEB; Fellow, BCS; Fellow, BES
Email: mkabir@uap-bd.edu

Treasurer in Charge

**Air Commodore Ishfaq Ilahi
Choudhury**
ndc,psc (Retd.)
Email: treasurer@uap-bd.edu

Registrar

Mr. Sarwar Razzaq Chowdhury

M. Sc (Karlsruhe University,
Germany), M.Sc (JU), B.Sc
(Hons)
Email: zahirul.islam@uap-bd.edu

MBA, Bangkok University, Thailand
Former Associate Professor, Department of
Administration, UAP
Email: registrar@uap-bd.edu

1.3.3 Academic Programs Being Conducted

Program and Name of Degree	Field/ Specialization	Full/ Part time	Year of Starting	Duration
Undergraduate	Architecture, B. Arch	Full time	1997	5 years
	Business Administration, BBA	Full time	1996	4 years
	Civil Engineering, B.Sc. in CE	Full time	1997	4 years
	Computer Science & Engineering, B.Sc. in CSE	Full time	1996	4 years
	Electrical & Electronic Engineering, B.Sc. in EEE	Full time	2004	4 years
	English, B.A Hons	Full time	2010	4 years
	Laws, LL.B, Hons	Full time	2005	4 years
	Mathematics, B.Sc. Hons	Full time		4 years
	Pharmacy, B. Pharm. Hons	Full time	1996	4 years
Postgraduate	Business Administration, MBA, EMBA	Full time	2000	1-2 years
	Civil Engineering, M.Sc. in CE	Full time	2009	1-2 years
	Computer Science & Engineering, M.Sc. in CSE	Full time	2006	1-2 years
	M.A. in English	Full time		1 year
	M.A. in English (Preliminary & Final)	Full time		2 years
	Laws, LL.M	Full time	2005	1 year
	Pharmaceutical Technology, MS. Pharm. Tech.	Full time	2003	1 year

1.3.4 Student Service and Facilities

A wide range of support services is provided by UAP to assist the students with any problems they may face, including those of an academic or personal nature. A brief description of various student support services and other facilities is given below.

1.3.4.1 Student Services

Central and Departmental Clubs

A variety of co- curricular activities are provided to the students. There are 17 Central Clubs, besides host of other clubs specific to each department. 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 Department supervises department specific clubs. All Clubs have a Faculty Advisor and a students' committee that organizes various activities round the year.

Career Services

Career Counseling Centre (CCC) under Directorate of Students Welfare (DSW) provides internship placement and job placement for UAP graduate students in. This Center also provides career development training and socio-psycho counseling to UAP graduates and undergraduates. Major functions of this centre includes-

- Internship placement for UAP graduates
- Part-time and full-time job Placement for UAP graduates
- Arranging workshops & seminars
- Training program
- Job fair & career fair
- Trade show at home or abroad
- Maintaining graduate database/ profile
- Maintaining employer database
- Company visit
- Relationship development

Waiver Policy

3% of total seats are reserved for the children of Freedom Fighters and another 3% for meritorious but poor students from remote areas of Bangladesh. They will be offered full free education opportunity.

- Top 3% students in each department will be offered 100% tuition waiver based on semester results.
- Vice Chancellor's special tuition fee waiver will be offered in amount 10%-100% to poor but meritorious students.
- 50% waiver for students with individual GPA of 5.00 in S.S.C and H.S.C.
- 25% waiver for students with individual GPA of 4.50 in S.S.C and H.S.C.
- 10% waiver for students with individual GPA of 4.00 in S.S.C and H.S.C.

Counseling

An advisor is assigned to each student who helps the student to make overall planning for the undergraduate program and to choose suitable courses in a particular semester. The advisor also monitors the progress of the student. In case the student attains a cut off GPA, he is warned beforehand and his guardian is being informed accordingly about the academic performance of the student.

1.3.4.2 Campus/ Infrastructure Facilities

Library

The University has a fairly well stocked central library. Adequate facilities exist with a large number of textbooks, reference books (currently more than 10,000) and journals, periodicals for study in the reading room of the library in a quiet and congenial environment. A number of local daily newspapers and international news magazines are also subscribed for the benefit of students. The library is being enriched day by day. Students can borrow books from the library. There is also CD library for the students. In the seminar library, books and technical journals relevant to the respective disciplines are available.

Laboratory

UAP provide laboratory facilities for the students of respective departments. The laboratories are self-sufficient and rich in instruments and other facilities to carry out sessional/practical classes for different courses. Unlike many other private Universities, UAP does not depend on any other institutions for its laboratory classes. Other than sessional/practical classes, the faculties of UAP do their research work in these laboratories also.

Website and Internet Facility

University of Asia Pacific (UAP) provides twenty-four hour high-speed Internet facilities to its students. All the computers of lab and other places of each department of UAP are connected under a

LAN and high-speed Internet line. There is a website of UAP that contains important information about faculty members, ongoing research, admission, faculty search, exam of UAP etc., which is updated each week and URL is www.uap-bd.edu. Each student of UAP is given an individual email account at uap-bd.edu domain that recognizes the UAP students. Students can submit their assignments through the Internet.

1.3.4.3 Other Facilities

The University runs a well-equipped Medical Center for medical consultation, free of cost for students. The University has its own canteen, which provides hygienic foods at a reasonable cost for the students, faculty, and staffs. In near future, the University plans to provide transport facilities for students and also to provide the residential facility, especially for female students.

1.4 Overview of the Program Offering Entity: Department of Computer Science and Engineering (CSE)

The Department of Computer Science and Engineering established in 1996, with the full support of the Administration and the UAP Foundation Members, is thriving forward in disseminating knowledge in this emerging field. Such endeavor is not only helping in developing the human resources of this country but also in earning foreign exchange by exporting skilled manpower abroad. Till to date, B.Sc. Engg. The degree has been conferred on 2200 graduates and these graduates are making positive contributions in the field of Computer Science and Engineering.

The prime objective in establishing the Computer Science & Engineering Department at University of Asia Pacific is to make a concerted effort towards achieving the goal of providing quality education for the duration of 4 years at the undergraduate level. Later it is to be followed by higher academic degree programs such as MS/Ph. D.

The courses in the undergraduate programs are designed to give students a rigorous and comprehensive academic training on both the fundamental and advanced aspects of Computer Science & Engineering (CSE). It would concentrate both on software and hardware aspects. A student in CSE must not only have a sound basis in the fundamentals of computer but also should be aware of socio-economic problems of the country. Therefore, courses in science, humanities, economics, accounting, finance, and management are also included in the curricula. The last two semesters will offer the students a number of alternatives to choose from and to specialize in a particular one. Theory and seasonal work will be supplemented by Project/Thesis work, Seminars and visits to

relevant research and development organization. Following table depicts the current scenario of the department's student-teacher ratio.

Faculties	37
Undergraduate Students	985
Postgraduate Students	24
Staff	10

1.4.1 Degrees Offered

Title of Program	Field of Specialization	Full Time Duration	Sanctioned Strength	Year Starting
Undergraduate	CSE	4 Years (8 Semesters)	250 per year	1996
Graduate	CSE	2 Years (4 Semesters)	20 per year	2006

1.5 Vision, Mission Statement and Program Objectives of the Department of Computer Science and Engineering, UAP

Vision:

The department of CSE, UAP is striving for pioneer role in ICT through excellence in education, research and development towards preparing graduates as a global leader with quality education, innovative ideas, extra-curricular activities and collaboration between industry and academia.

Mission:

Department of CSE believes in the pursuit of excellence by developing students in creating, applying and imparting knowledge of ICT. Educational curriculum, research and collaboration between academia and industry are given highest priority. CSE, U AP aspires to produce graduates capable of taking leadership on the field of their best interest. We nurture graduates in

- Understanding the basic principles of computational, electronic and modern technologies
- Promoting creativity by applying their theoretical knowledge in practical problem solving
- Enabling them to communicate ideas clearly and concisely both in written and verbal forms
- Creating awareness about environment, social responsibility, and economic development within the ethical boundaries
- Engaging for further research or professional involvement

Program Educational Objectives (PEO):

The primary goal of the B.Sc. degree program in Computer Science and Engineering is to provide students the foundations for future work and careers in computation-based problem-solving. These foundations support both a successful career path in computing as well as provide appropriate qualifications for further degree work in computation related disciplines. The following objectives are to be met by students obtaining a degree in Computer Science. Students, upon graduation, will:

PEO 1: Possess theoretical and practical knowledge of Computer Science and Engineering to establish successful computing or engineering careers in industry, government, and academia that will advance the economic development of the country, the region, and beyond.

PEO 2: Enhance skills and creativity, and embrace new computing technologies through self-directed professional development and post-graduate education.

PEO 3: Apply the ethical and social aspects of modern computing technology to the design, development, and usage of computing artifacts.

PEO 4: Be committed to active participation in life-long learning and socio-economic development through research and development of Computer Science and Engineering to adapt to an ever-changing real-life environment.

This success is reflected in their job satisfaction, the respect of their peers, their highly valued work and their competitive salaries.

Table 1-2. Mapping between Mission and PEOs.

Mission	PEO 1	PEO 2	PEO 3	PEO 4
Understanding the basic principles of computational, electronic and modern technologies	√			
Promoting creativity by applying their theoretical knowledge in practical problem solving	√			
Enabling them to communicate ideas clearly and concisely both in written and verbal forms	√	√		
Creating awareness about environment, social responsibility, and economic development within the ethical boundaries			√	√
Engaging for further research or professional involvement				√

Table 1-3. Program Outcomes.

No.	Program Outcomes	Definition
1.	Engineering Knowledge	Apply knowledge of mathematics, sciences, engineering fundamentals and manufacturing engineering to the solution of complex engineering problems
2.	Problem Analysis	Identify, formulate, research relevant literature and analyze complex engineering problems, and reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences
3.	Design/Development of Solutions	Design solutions, exhibiting innovativeness, for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, economical, ethical, environmental and sustainability issues
4.	Investigation	Conduct investigation into complex problems, displaying creativeness, using research-based knowledge, and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
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
6.	The Engineer and Society	Apply reasoning based on contextual knowledge to assess societal, health, safety, legal, cultural, contemporary issues, and the consequent responsibilities relevant to professional engineering practices
7.	Environment and Sustainability	Understand the impact of professional engineering solutions in societal, global, and environmental contexts and demonstrate knowledge of and need for sustainable development
8.	Ethics	Apply professional ethics with Islamic values and commit to responsibilities and norms of professional engineering code of practices
9.	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
10.	Individual and Team Work	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
11.	Life Long Learning	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change
12.	Project Management and Finance	Demonstrate knowledge and understanding of engineering management and financial principles and apply these to one's own work, as a member and/or leader in a team, to manage projects in multidisciplinary settings, and identify opportunities of entrepreneurship

1.6 Brief Summary of the Program Reviewed

Academic Program

Table 1-4. Key aspects of the Undergraduate program of CSE, UAP.

Title of Program	Field of Specialization	Full time Duration	Sanctioned Strength	Year Starting
Undergraduate	CSE	4 years (8 semesters)	250 per year	1996

A year is counted as two semesters, namely: Spring Semester and Fall Semester. The Bachelor of Computer Science and Engineering Program consists of 162 credit hours spread in 70 courses, including departmental and non-departmental theoretical courses, laboratory courses and project/thesis. Besides this, practical teaching mechanisms like seminars/presentations, project development, workshops etc. are arranged by the department on a regular basis. Basic information is depicted in the table given below:

Table 1-5. Numerical Information of CSE, UAP.

Items	Quantity
First year enrollment (recent)	123
Total undergraduate students	985
Total backlog students	88
Fulltime faculties	25
Part-time faculties	12
Academic staffs on study leave	15
Non-academic staff	10

CHAPTER II

GOVERNANCE

2.1 Program Management

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

University of Asia Pacific (UAP) has a well-defined organogram which demonstrates the structure and the relationships between various people, departments, and jobs at different levels ^[1]. The departments and their offices have their own duties and responsibilities which are clearly explained and well-practiced. Also governed by the Chancellor (President of Peoples Republic of Bangladesh), and executively headed by Vice Chancellor, UAP maintains the proper hierarchy of administration with each faculty led by a Dean as well as the departments headed by the head of the department.

The organizational structure includes following authorities- The Syndicate, The Academic Council, The Faculties, The Boards of Studies, the Committee for advanced studies and research, The Selection Board, The Finance Committee, The Planning and Development Committee.

The officers of UAP which is a part of the organizational unit include- The Chancellor, The Vice Chancellor, The Registrar, The Exam Controller, The Director of Advisory, The Director of Students Welfare, as well as such other employees of UAP.

Through the well-defined hierarchical organogram, UAP exercises several powers which includes- providing instruction of learning, conferring research degrees as well as honorary degrees and to cooperate with other universities, to institute professorship, to supervise and control the discipline of the students of the university, regulating extracurricular activities, receiving donations for some specific purpose of the university, making provisions and research consultancy ^[4]. The UAP ordinance has ensured the provisions of – registration of students, equivalence of examination conducted by other universities, framing of detail syllabus’ of examination, condition of admissions, conducting examination, filling up casual vacancies, constituting pension and provident fund.

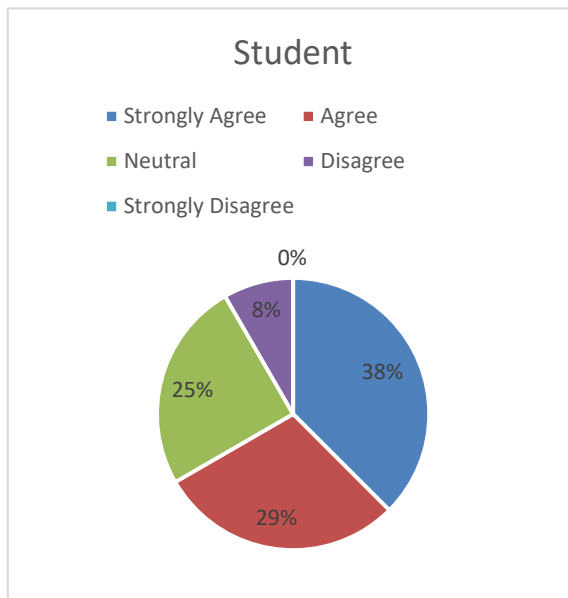


Figure 2-1. Responses of stakeholders for the question “The entity has adequate infrastructures to satisfy its mission and objectives (1.5.1)”

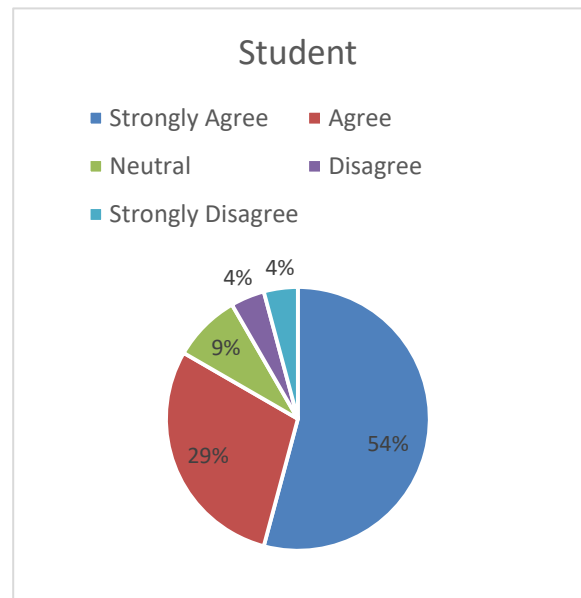


Figure 2-2. Responses of stakeholders for the question “Academic calendars are maintained strictly by the entity (1.5.2)”

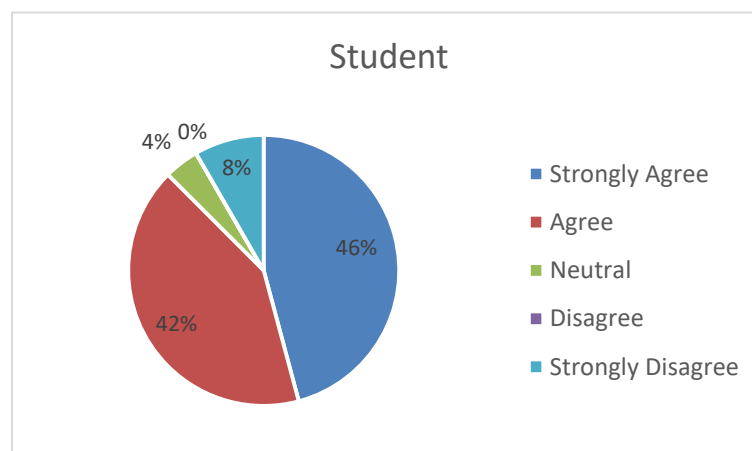


Figure 2-3. Responses of stakeholders for the question “Results are published timely in compliance with the ordinance (1.5.3)”

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

UAP has the provision to review and ratify the policies as well as procedures periodically. The administrative rules and regulations are reviewed and ratified at different levels which are finally

established by based on the final review of the syndicate members. This is also practiced in all other departments. Each of the department has Board of Undergraduate Studies as well as Board of Post-graduate committee which periodically review and update the course curriculum as well as undertake important academic decisions.

In the conducted survey, the academic stuffs and/or faculty members have evaluated the question “results at all levels are published in compliance with the ordinance” and annotated a point of 4.00 out of 5.00 where a point of 33.33% implies agree, 29.17%_implies neutral 4.17% implies disagree.

Table 2-1. Response of stakeholders to questions related to Standard 1-5, 1-6

Questions	Student	Academic Staff/Faculty	Employer	Alumni	Supporting Staff
Results at all levels are published in compliance with the ordinance	N/A	4.00	N/A	N/A	N/A

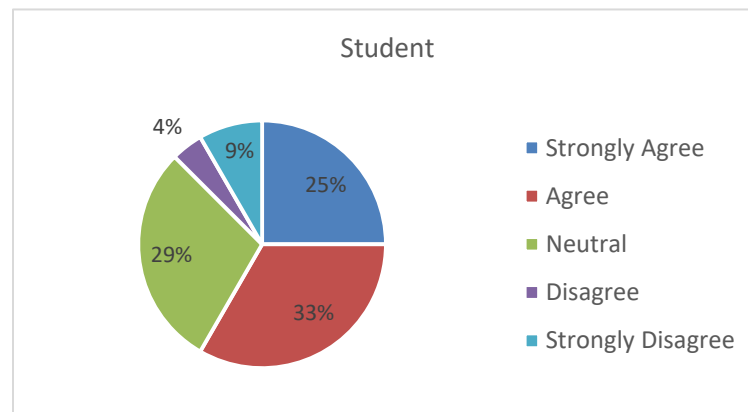


Figure 2-4. Responses of stakeholders for the question “The entity reviews its policy and procedures periodically for further improvement (1.6)”

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

UAP has a well-defined ordinance book which contains the code of conduct for all faculty members and students. The duties of faculty members as defined in the authoritative book include- teaching the students by means of lectures, tutorials, discussions as well as demonstrations, to conduct, guide and supervise research, maintaining personal contact with the students, supervising extracurricular activities, to assist the authorities in preparing course and syllabus, help to organize the library and

laboratory, give frequent assignments and tests to the students the maintain a regular record of their performance ^[6].

The university also arranges “**Teacher’s Appreciation Workshop**” for the teachers where the rules and regulations are communicated to the faculty members.

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

UAP has a well-defined website containing all the necessary information including academic program and calendar, course syllabus, an ordinance of the undergraduate and post-graduate program, admission procedure, Departmental information, admission procedure and others. The website has a notice board which is regularly updated as well as maintained. All the current affairs, seminars/workshops, achievements are updated immediately. Each student has a BIIS account through which they can get registered for to the offered courses and get results of the different semesters.

The university has their own webmail service for all the staffs through which they get important notices. Apart from the website, each department has their own website containing information of about faculty members, course curriculum, research activities, laboratory facilities, and others. Website of the department of Computer Science and Engineering can be found here: <http://uap-bd.edu/cse/index.php>

In the conducted survey, the academic staffs and/or faculty members have evaluated the question “website was informative and students could use that in various purposes” and was evaluated by 3 different groups namely students, academic staffs and faculty members, alumni and the score was 3.49, 3.88, 3.23 respectively. From the above data it is evident that all the groups found the website sufficiently helpful.

Table 2-2. Response of stakeholders to questions related to Standard 1-8

Questions	Student	Academic Staff/Faculty	Employer	Alumni	Supporting Staff
Website was informative and students could use that in various purposes	3.49	3.88	N/A	3.23	N/A

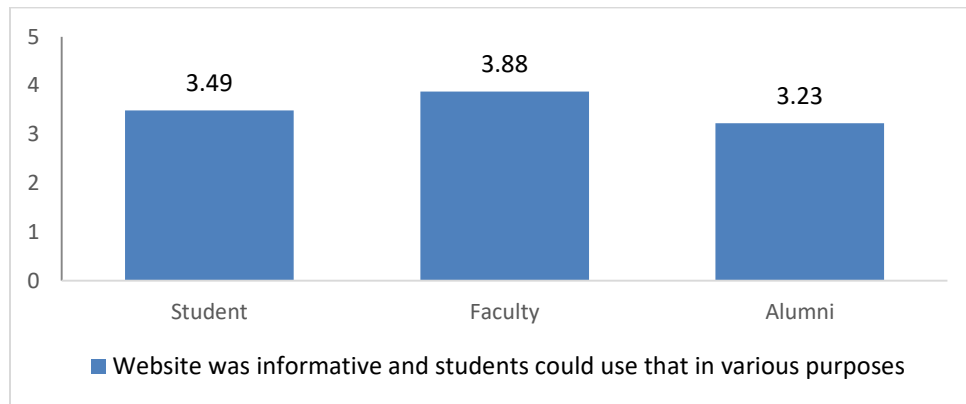


Figure 2-5. Responses of stakeholders for the questions regarding standard 1.8

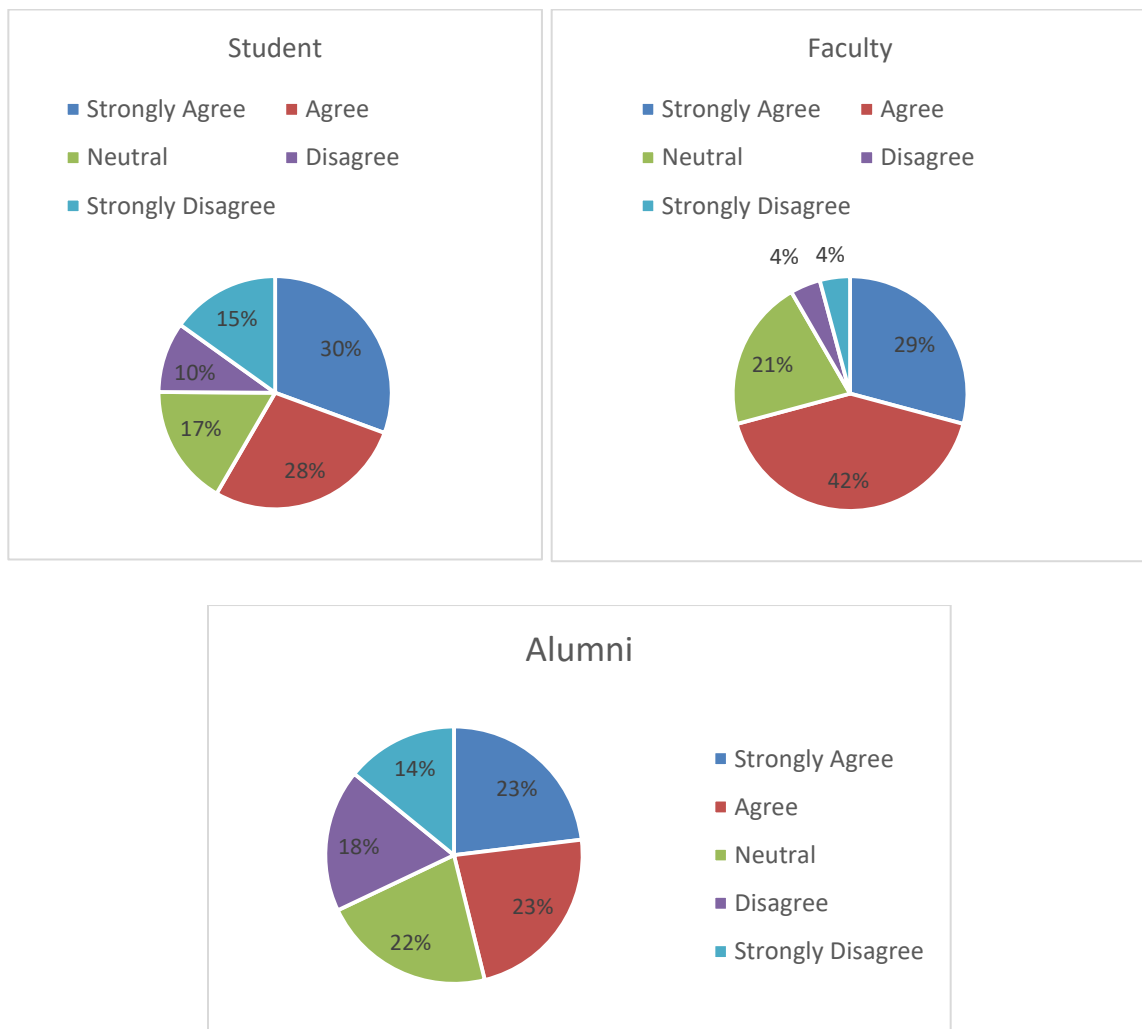


Figure 2-6. Responses of stakeholders for the question “Website is updated properly”

2.2 Vision, Mission and Objective

Standard 1-1: Vision, Mission and Objectives of the entity are clearly stated.

The University of Asia Pacific has clearly stated mission, vision as well as objectives which were devised to ensure the academic, personal and social development of the students at all levels. The vision and mission were described in chapter 1.

Exact education in Computer Science and Engineering is an essential element for the sustainable growth of a developing country like Bangladesh. The Department of Computer Science & Engineering aims to provide theoretical and practical education of the highest quality in this field to prepare its graduates with necessary skills to serve both nationally and internationally as worthy professionals, academicians and researchers. The long term goal of the CSE department is to become a major center of higher education and research in the field of Computer Science and Engineering both locally as well as globally. 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 Computer Science and Engineering. The vision and mission statement of CSE department were described in chapter 1.

In the conducted survey, students, academic stuffs and/or faculty members as well as alumni have evaluated the question “*Vision, Mission and Objectives of the entity are clearly stated*” and was evaluated by 3 different groups namely students, academic stuffs and faculty members, alumni and was score 3.76, 4.29, 3.73 respectively.

Table 2-3. Response of stakeholders to questions related to Standard 1-1

Questions	Student	Academic Staff/Faculty	Alumni	Supporting Staff
Vision, Mission and Objectives of the entity are clearly stated	3.76	4.29	3.73	N/A

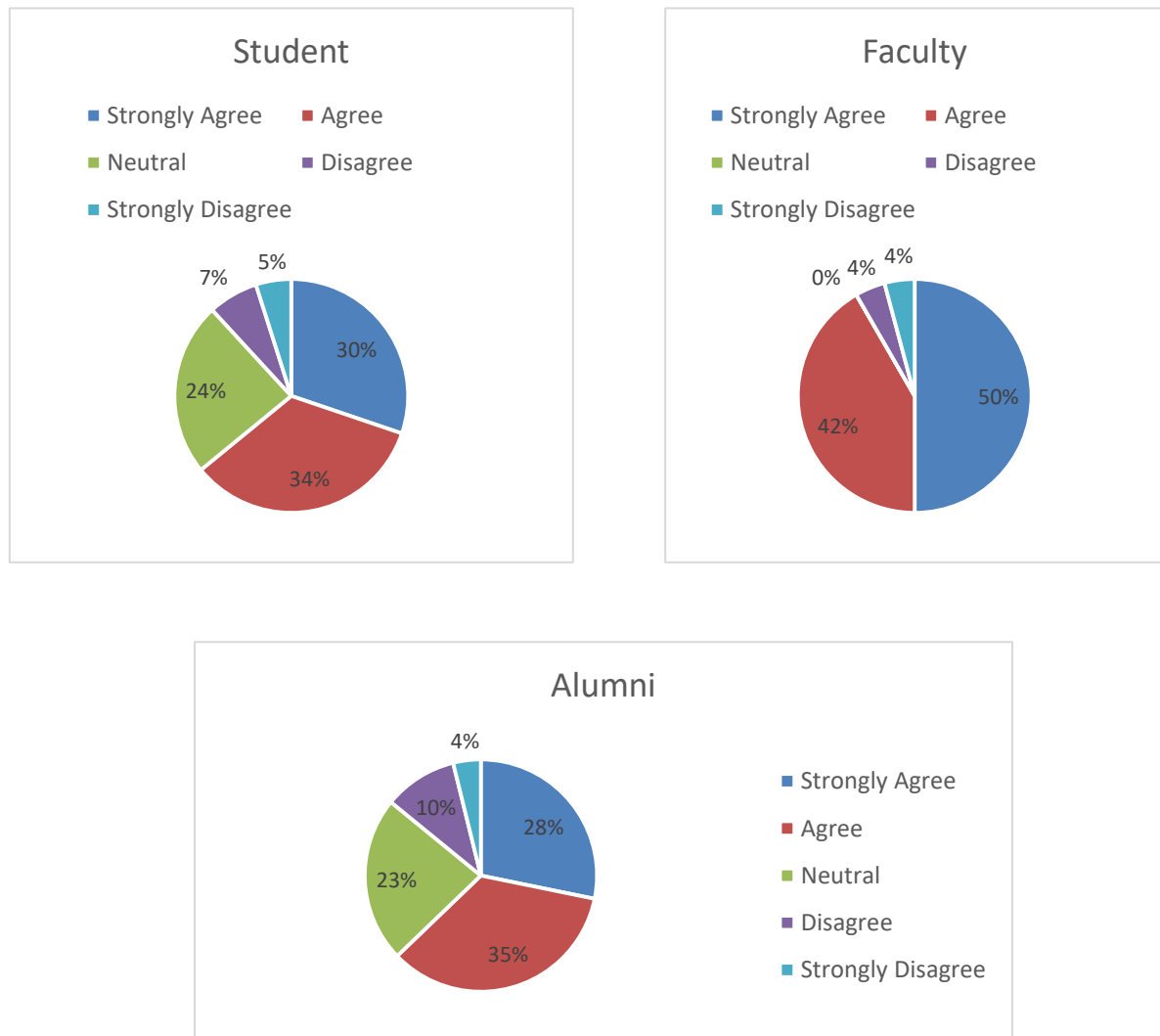


Figure 2-7. Responses of stakeholders for the question “Vision, mission and objectives of the entity are clearly stated (1.1)”

2.3 Academic Documentation

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

UAP provides the students of undergraduate and graduate program of all the departments with an information booklet prepared by the corresponding department combining with specifications of the “**Board of Undergraduate Studies**” and the “**Board of Graduate Studies**”. The booklet provides a holistic view on the organizational framework of undergraduate studies such as academic programs offered, course pattern and credit structure, scheduling of courses for different terms and levels,

course content and details of academic fees as well as the refunding process including ordinance of master degree.

In the conducted survey, the students, the academic stuffs and/or faculty members and alumni have evaluated the question “department provides student with handbook containing the program aims, objectives learning outcomes and method of assessment of students”.

Table 2-4. Response of stakeholders to questions related to Standard 1-9

Questions	Student	Academic Staff/Faculty	Employer	Alumni	Supporting Staff
Department provides student with handbook containing the program aims, objectives learning outcomes and method of assessment of students	3.86	4.21	N/A	3.49	N/A

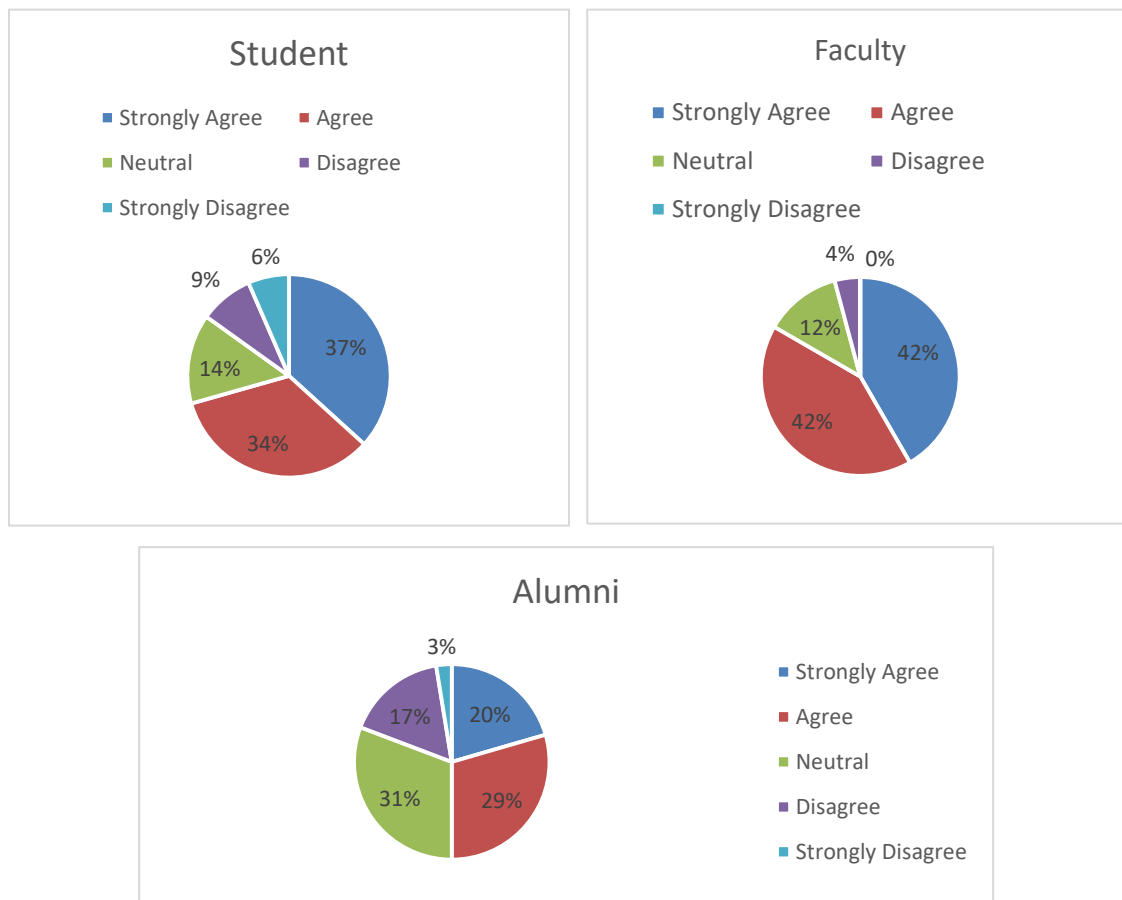


Figure 2-8. Responses of stakeholders for the question “Entity provides comprehensive guidelines to the students in advance by means of a brochure/handbook.”

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

The University has a comprehensive ordinance guide book which contains documentation at all levels of university administration from central to individual faculty members. Academic and administrative information of different offices as well as departments are clearly given in the University website. Each members of the university is given a diary where contact information of all the academic and non-academic staffs is provided. In the first statute there are some continuous provisions of university administration - The syndicate, academic council, the faculties, board of studies, finance committee, the committee for advance studies and research, planning and development committee, vice chancellor, director, controller, the director of students' welfare. In the book, specific function of each of the component of university administration is documented.

Table 2-5. Response of stakeholders to questions related to Standard 1-10

Questions	Academic Staff/Faculty
Documentations (decisions of committee, class attendance, registrars, questions, continuous assessments, examination results, students' progress) are maintained properly	4.08

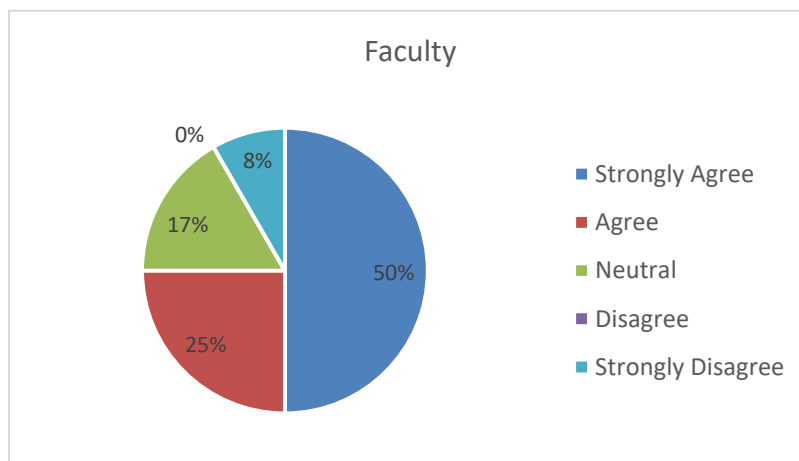


Figure 2-9. Responses of stakeholders for the question “Documentations are maintained properly (1.10)”

In the conducted survey, the academic stuffs and/or faculty members have evaluated the question “documentations (decisions of committee, class attendance, registrars, questions, continuous assessments, examination results, students' progress) are maintained properly” and annotated a point of 4.08 out of 5.00 where a point of 25% implies agree, 17% implies neutral.

2.4 Academic Leadership and Autonomy

The university has well defined organizational structure. In UAP each of the part of the governance structure enjoys a reasonable autonomy. The Vice Chancellor is the principle academic as well as administrative officer of the University of Asia Pacific who provides all the academic as well as administrative leadership. He also plays an integral part in developing and evolving the institutions' strategy as well as vision along with playing a leading part in shaping the academic development of UAP.

The VC is also a member of the Syndicate, the highest executive body of the organization that acts with great autonomy. The syndicate of UAP has complete jurisdiction over all of the academic issues which are placed in front of the Board of Trustees as per necessity.

Similarly, the highest body regarding academic decisions; the Academic Council also exercises a great deal of academic freedom. The council employs regulations prescribing the courses of studies and curricula, proper standards of instructions, research and examination. The committee of courses and studies at each department recommends the curricula and syllabus of courses prepared by each program and advances to the Academic Council for its approval to forward it to UGC for granting permission to engage in offering the course(s). Each of the department of UAP is leading by the Head of the Department and organization structure of it and allows them to act with great deal of autonomy in both academic and management issues of the respective departments.

2.5 Peer observation and Feedback Process

Standard 1-11: Decision making procedure in the entity is participatory.

The Syndicate is the supreme authority in major policy-making matters and in approving recommendations. The Finance Committee, the Planning and Development Committee, as well as other committees assist the Syndicate in matters important for proper functioning of the University. The Academic Council is the supreme body for formulating academic rules and regulations to which the CASR, Boards of Undergraduate and Graduate Studies and the Faculties recommended.

In the conducted survey, the academic stuffs and/or faculty members have evaluated the question "Decision making procedure in the entity is participatory" and annotated a point of 3.83 out of 5.00 where a point of 54.17% implies agree, 8.33% implies neutral & 4.17% implies disagree.

Table 2-6. Response of stakeholders to questions related to Standard 1-11

Questions	Academic Staff/Faculty
Decision making procedure in the entity is participatory.	3.83

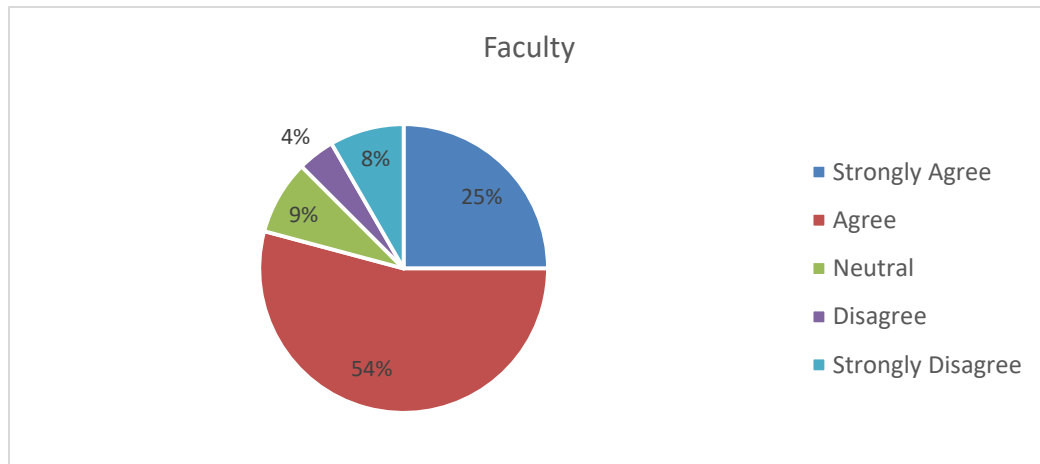


Figure 2-10. Responses of stakeholders for the question “Decision making procedure in the entity is participatory (1.11)”

2.6 Internal Quality Assurance Process

Standard 1-12: The entity ensures a conducive learning environment.

The academic leaders are judicious at different important decisions and activities. During selection of new faculty member or conformation to higher post or reappointment to higher post UAP prepares a strictly confidential report (SCR) which maintains strong rules of ethics.

For selection the lecturer or reappointment to higher post like Assistant Professor, Associate Professor and Professor some criteria are evaluated. Some of the criteria subsume-stellar academic qualification, experiences, membership or fellowship of Learned Societies, professional institution in national commissions, committees and others commissioned the Government of Bangladesh and Government institution or organizations, honors received, professional work at national or international level, teaching activities undertaken (course and laboratory) at undergraduate and graduate levels since last appointment since last appointment, supervision of Thesis/Design project at undergraduate level since the last appointment, Supervision of completed graduate research work, research grant received.

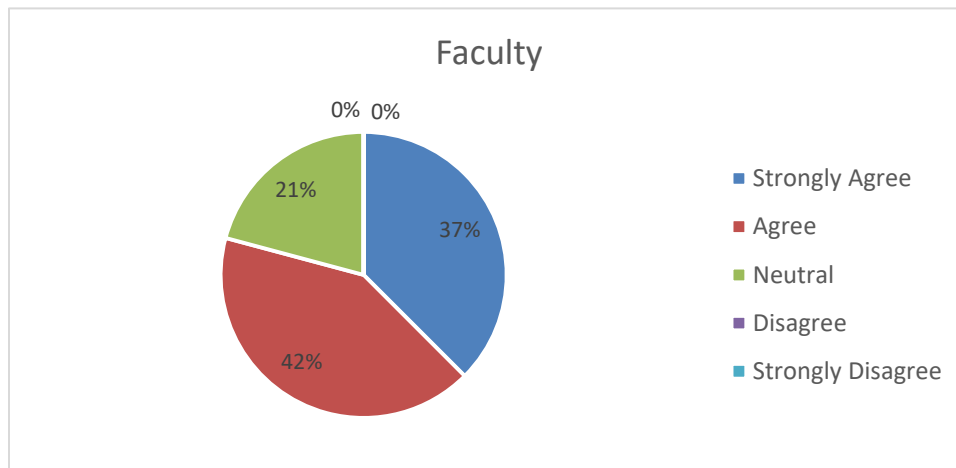


Figure 2-11. Responses of stakeholders for the question “The entity always acts in compliance with the decision of the university regarding continuous quality improvement”

CHAPTER III

CURRICULUM DESIGN AND REVIEW

A well-defined up-to-date curriculum is essential for a program in any academic institution. Typically, a curriculum refers to the knowledge and skills students are expected to learn in a program, which includes the learning objectives they are expected to meet, the lessons that teachers teach, the assignments and projects given to students, the books, materials, videos, presentations, and readings used in a course, and the tests, assessments, and other methods used to evaluate student's learning. Thus designing useful curriculum is the key to an effective teaching-learning process. This chapter covers the curriculum of dept. of Computer Science and Engineering (CSE) program, its review process, and alignment with the generic skills to be obtained by the graduates of the program. The overview on these issues is combined with the discussion of various standards as prescribed in the self-assessment manual.

Standard 2-1: Curriculum is reviewed and updated at regular intervals in compliance with the rules of the universities.

Standard 2-2: Opinions from the relevant stakeholders (students, teachers, employers and alumni) are duly considered during review of the curriculum.

Standard 2-3: Courses in the curriculum from lower to higher levels are consistently arranged.

Standard 2-3: Teaching strategies are clearly stated in the curriculum.

Standard 2-3: Assessment strategies are explicit in the curriculum.

Standard 2-4: Curriculum load is optimum and exerts no pressure.

Standard 2-4: Curriculum addresses the program objectives and program learning outcomes.

Standard 2-5: The curriculum is effective in achieving day-one skill (which happens right at the beginning in the first day at job place)

3.1 Need Assessment

To meet the growing technological challenges confronting the nation and the world as a whole, the dept. of CSE has designed the curriculum and syllabus of the subjects offered in the undergraduate and graduate courses accordingly. The curricula and syllabi are relevant to the current needs, and are

responsive to the emerging challenges. The rules and regulations for undergraduate curricula through course system are applicable for all students.

The dept. of CSE, University of Asia Pacific (UAP) strives for a pioneer role in Information, Communication and Technology (ICT) through excellence in education, research and development towards preparing graduates as a global leader with quality innovative ideas, extra-curricular activities and collaboration between industry and academia. The CSE dept. believes in the pursuit of excellence by developing students in creating, applying and imparting knowledge of ICT. Educational curriculum, research and collaboration between academia and industry are given the highest priority. The department aspires to produce graduates capable of taking leadership in the field of their best interest both in academic and professional life.

3.2 Curriculum Design

The dept. of CSE offers a well-timed curriculum approved by the University Grants Commission (UGC) for both the undergraduate and graduate program that aims to cover all the major specializations for the overall development of a student in computer science and engineering education. The curriculum of 4-years undergraduate program consists of 162 credit hours spread in 71 courses including laboratory courses and thesis/project work. The courses are divided into eight semesters for 4-years. The first year focuses on the foundation and general education courses to provide the necessary background for more specialized study in the future within this field. From second year onward, students get familiarized with the knowledge and skills concerning to the entire spectrum of computer science and engineering discipline core courses. In the final year of the program, curriculum offers options to select courses based on their desired field of specification. Additionally, in the final year, students are engaged by a thesis/project work whereby they remain attached and worked on the desired area for about one year in order to have a strong understanding of real life problem for which they can make a modern solution with the perfect use of ICT. The students are then required to write a report on their experiments and findings, and finally make a presentation before a thesis/project defense committee. The courses in the curriculum are structured into 6 area(s): general education, foundation, core, optional courses and thesis/project work. Except the four, namely, Bangladesh Studies: Society and Culture, Bangladesh Studies: Bangladesh History, English II : English for Communications and ICT Law, Policy & Ethics (each of them is of 2 credit hours), all the other courses are of 3 credits. Some laboratory courses are of 1.5 credit hours and some are of 0.75 credit hours. The course structure along with the number of courses in each area is presented in Table 3.1.

Table 3-1. Course Structure in CSE Undergraduate Program (BSc. in CSE)

Course Category	No. of Courses	Credit Hour	Total Credit
General Education (GE)	4	3+3*2	9
Foundation	12	3*8+2*1.5+2+0.75	29.75
Core	49	3*23+4*2+2+1.5*19+0.75*4	110.5
Optional	3 (out of 30)	2*3+0.75	6.75
Thesis/Project	-	3+3	6
Total			162

*The courses in various categories are presented in Appendix A.

The department of CSE also offers a 1-year MSc. program, 'Master in Computer Science & Engineering (MCSE)' that aims to provide for a modern demand of high-tech professionals in computer science and its related fields. The curriculum of this program consists of total 36 credit hours spread in 6 courses (out of 25) and a thesis/project work. The curriculum also offers two other Masters Programs: Master in Computer Applications (MCA) and Master in Computer Science (MCS). All the 25 courses are of 3 credit hours and the thesis work is of 12 credit hours. The students have to complete at least 12 credits of core courses and 6 credits of elective courses. The course structure along with the number of courses in each area is presented in Table 3.2.

Table 3-2. Course Structure in Graduate (MCSE) Program (MSc. in CSE)

Course Category	No. of Courses	Credit Hour	Total Credit
Core	4	3*4	12
MCSE Elective	2 (out of 10)	3*2	6
MCS Elective	2 (out of 11)	3*2	6
Thesis Work	-	12	12
Total			36

*The courses in various categories are presented in Appendix A.

Stakeholders' View

During survey conduction, specific questions were asked to stakeholders regarding curriculum design and review. In the survey, three stakeholders, namely, alumni, students and academics staff/faculties have participated, as there was no question directed to the employers and non-academic staff on this particular aspect. From table 3.3, it is found that the stakeholders did not quite agree with the above statement with the grand mean falling short of 4.0 ('Agree'). The reason behind is one entity of this survey is alumni who didn't get the updated revised curriculum.

Table 3-3. Response of stakeholders to questions related to standard 2-3

Aspect of Evaluation	Alumni	Students	Faculties	Grand Mean
Courses in the curriculum from lower to higher levels are consistently arranged	3.83	3.78	3.63	3.75

Figure 3-1 shows that three stakeholders agree that the courses in the curriculum from lower level to higher levels are consistently arranged. However, some percentage of stakeholders shows that there needs some revision.

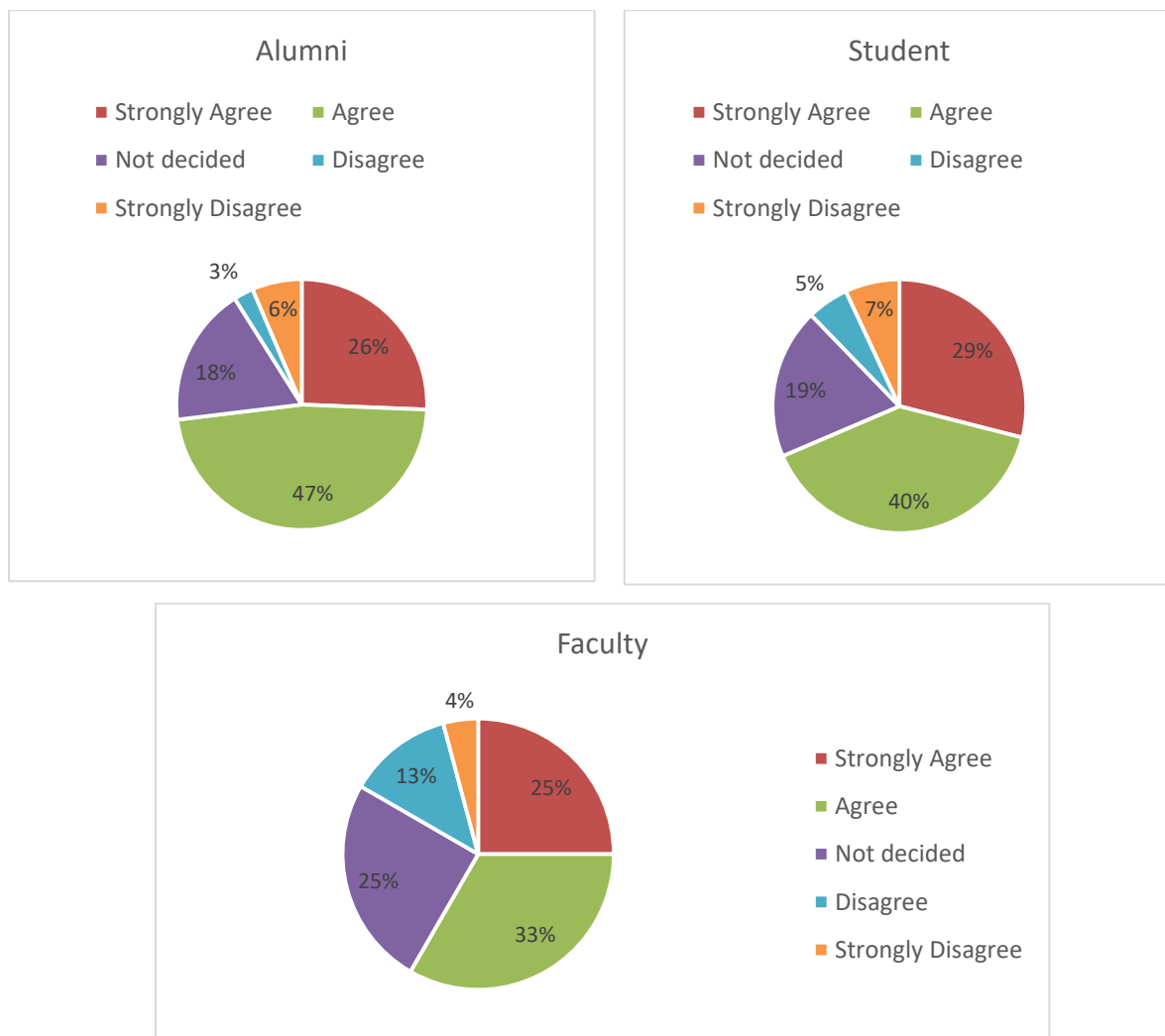


Figure 3-1. Responses of stakeholders for the question “Courses in the curriculum from lower to higher levels are consistently arranged (2.3)”

Table 3-4. Response of stakeholders to questions related to standard 2-3

Aspect of Evaluation	Alumni	Students	Faculties	Grand Mean
Teaching strategies are clearly stated in the curriculum	3.53	3.67	3.75	3.65
Assessment strategies are explicit in the curriculum	3.66	3.73	3.66	3.68

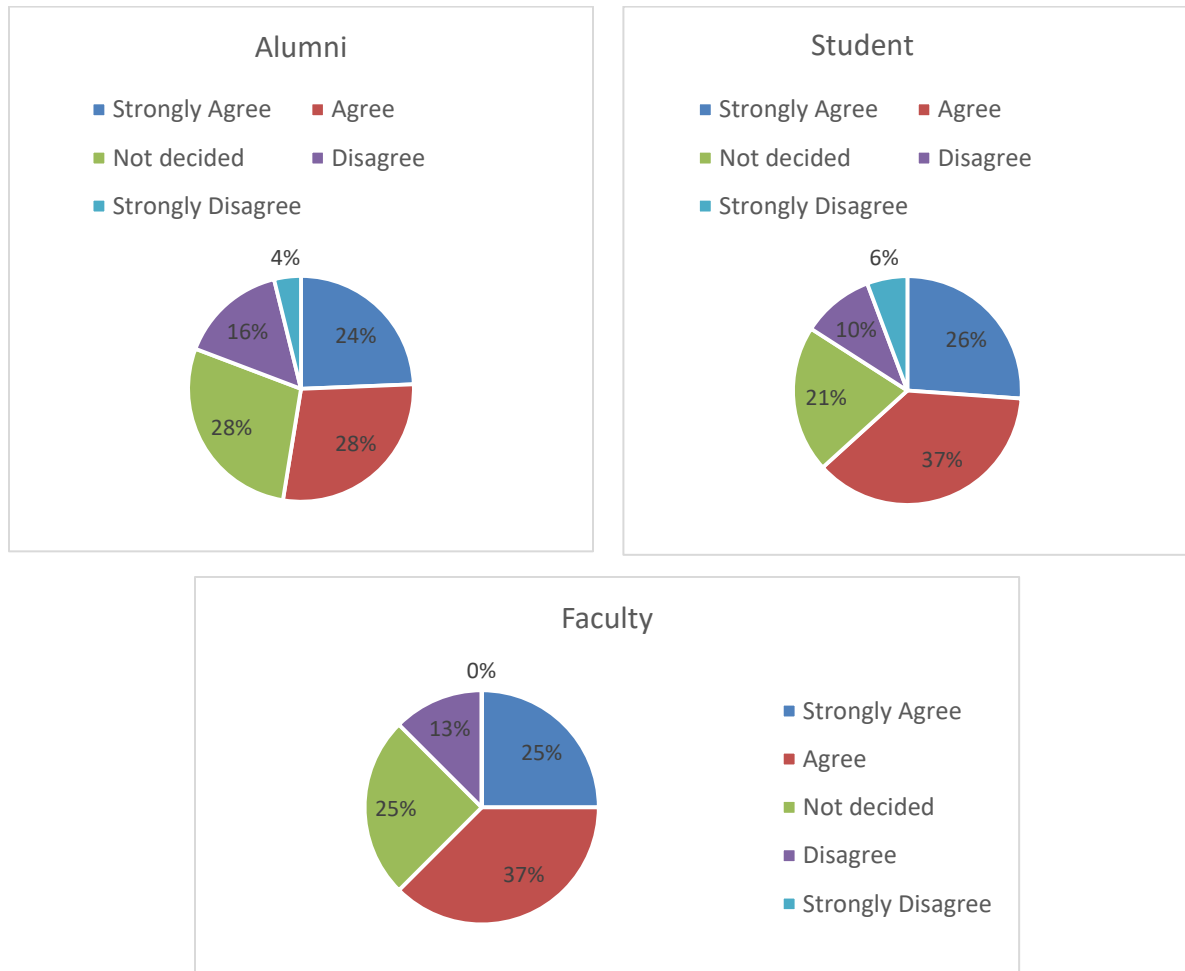


Figure 3-2. Responses of stakeholders for the question “Teaching strategies are clearly stated in the curriculum (2.3)”

From figures 3-2 and 3-3, it is observed that for all the stakeholders, the assessment strategies have scored higher means than those of teaching strategies with the grand mean very close to 4.0. In terms of clarity, students hold a positive view regarding both the assessment as well as the teaching strategies. The fact that the assessment of the answer scripts remains, in general, transparent has been proved by the positive views of the stakeholders.

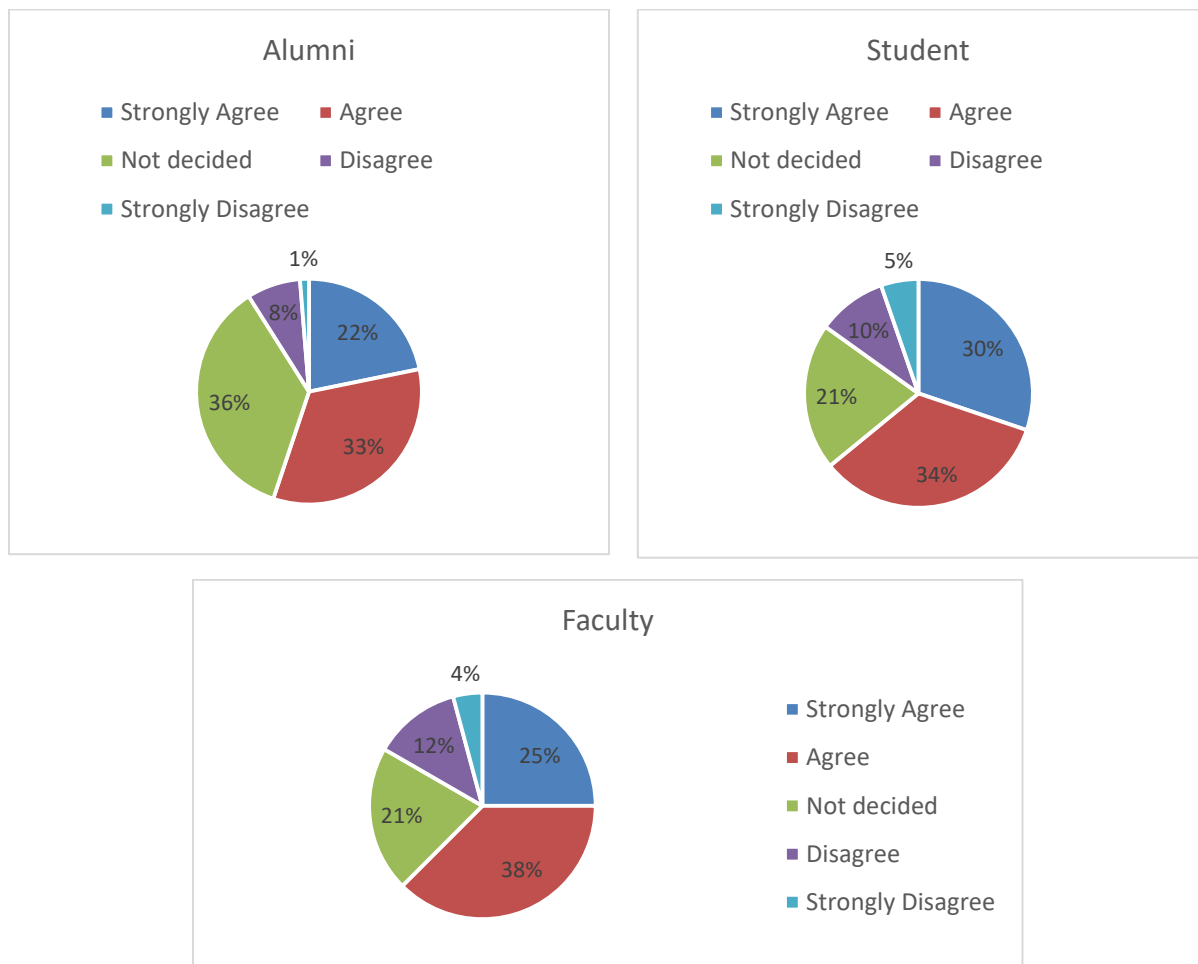


Figure 3-3. Responses of stakeholders for the question “Assessment strategies are explicit in the curriculum (2.3)”

3.3 Review Process

UAP has a very well-defined and dynamic procedure to facilitate a periodic review of different academic programs. It includes making decisions about how to effectively address the particular needs, interests and circumstances of the students and community.

3.3.1 Review Process

UAP has eight different departments, and in each of the department, there is a course and curriculum committee. The course and curriculum committee comprise the departmental Head and full-time teachers, an expert from industry and two subject-matter external experts from other universities, as nominated by the Dean of the school or Head of the department. The course curriculum and the syllabus are subject to periodic updates. Feedback from each course teacher is collected by the respective coordinators which is consolidated and forwarded to the committee 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 experience about the course content and current issues [Standard 2-2].

Periodic 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. After the detailed discussion among the committee members, the board of committee re-form the curriculum and the detailed syllabi of each program. Once the departmental committee reviews and proposes any changes to the curriculum, the suggestions are then taken up by the Academic Monitoring and Coordination Committee (AMCC). In general, the AMCC meets every month and discusses any issues relating to academic. If the proposed suggestions regarding the changes are concurred by the members of AMCC, it is then subjected to the further decision from the Academic Council (AC). After it is approved by AC, it is placed before the University Syndicate for further verification. Upon approval of the Syndicate, the proposed revised curriculum is sent to UGC for its further review and final ratification. Through such a rigorous review process, a new and improved version of the syllabus comes into effect [Standard 2-1].

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

Under the IQAC guidelines, the department has concentrated its attention to design the entire CSE course curriculum to organize and prepare the course contents of all the courses using the Outcome Based Education (OBE) model under the Washington Accord. In concern to that the SA committee arranged several training sessions and a 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 faculty members from CSE were reviewed by the SA committee again. It is mentionable that within the very short time of starting of self-assessment program, the dept. of CSE has already demonstrated a significant contribution to update and recast the 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 growing modern community needs.

Stakeholders' View

Table 3-5. Response of stakeholders to questions related to standard 2-1

Aspect of Evaluation	Faculties
Curriculum is reviewed and updated at regular intervals in compliance of the rules of the university.	3.58

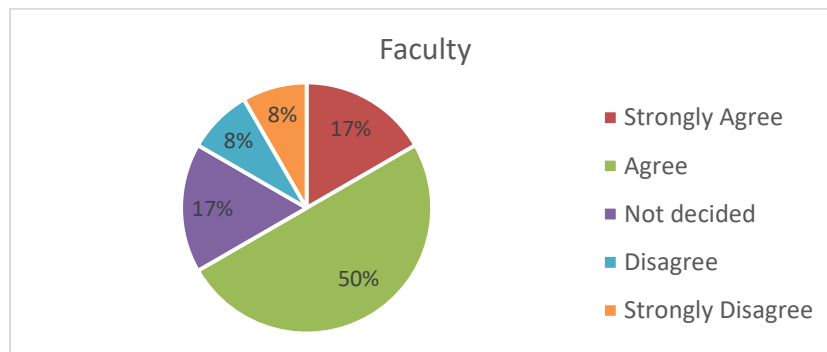


Figure 3-4. Responses of stakeholders for the question “Curriculum is reviewed and updated at regular intervals in compliance with the rules of the universities (2.1)”

The above statement was directed at the faculty members only, and not to any other stakeholder. The mean score of faculty response stands at 3.58, which is less than the threshold point 4.0 (Agree), implying that the faculty members do not hold a positive view toward this aspect. Since a substantial revised curriculum of CSE has been implemented from Fall 2016, the above response could be considered as praiseworthy.

Table 3-6. Response of stakeholders to questions related to standard 2-2

Aspect of Evaluation	Faculties
Opinions from the relevant stakeholders (students, teachers, employers and alumni) are duly considered during review of the curriculum	3.79

Regarding the statement as to whether the stakeholders’ opinions are considered during the review process, the value derived from the faculties’ opinions stands at 3.79, which falls below 4.0. This means that the faculties do not concur with this above statement, which also is in line with the practice pursued until recently. However, this has not been the case in the recent implementation of the revised curriculum of CSE.

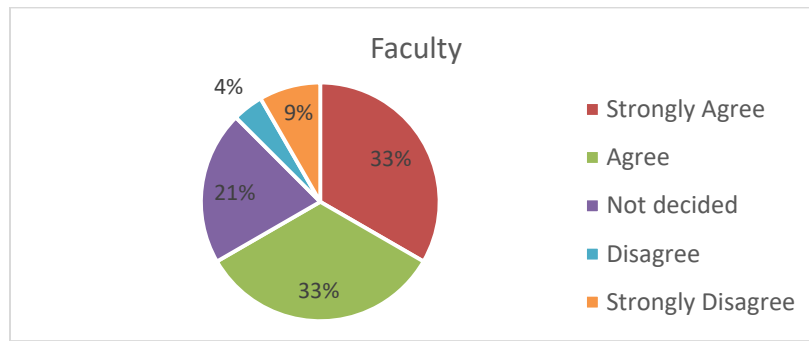


Figure 3-5. Responses of stakeholders for the question “Opinions from the relevant stakeholders (students, teachers, employers and alumni) are duly considered during review of the curriculum (2.2)”

3.3.2 Revised Curriculum Implementation:

Very recently, the department of CSE has implemented the revised curriculum with effective from Fall 2016. However, the process of the revision was started from the back of 2014. The necessary official documents regarding the review process and taking the necessary steps for implementation are included bellow.

A meeting of the Committee for Courses and Curriculum of B.Sc. in CSE for the Department of CSE held on 26 January 2014 at 4.00 pm in the Room D410 (House # 52/1, Road # 3/A, Dhanmondi, Dhaka). The following members of the committee were present in the meeting:

Aloke Kumar Saha	Associate Professor and Head, Department of CSE, UAP, Chairman
Dr. M. Kaykobad	Professor, Department of CSE, BUET, Member and External Expert
Shahadat Khan, Ph.D.	CEO, Progoti Systems Limited, Member and External Expert
Ms. Shaila Rahman	Assistant Professor, Department of CSE, UAP
Kazi Chandrima Rahman	Assistant Professor, Department of CSE, UAP
Dr. Md. Shahriar Rahman	Assistant Professor, Department of CSE, UAP
Md. Firoz Mridha	Assistant Professor, Department of CSE, UAP
Dr. Rafi Md Najmus Sadat	Assistant Professor, Department of CSE, UAP
Dr. Shahera Hossain	Assistant Professor, Department of CSE, UAP
Koushik Sarker	Senior Lecturer, Department of CSE, UAP
Md. Anowarul Abedin	Lecturer, Department of CSE, UAP
A S Zafourullah Momtaz	Lecturer, Department of CSE, UAP
Md. Shiplu Hawlader	Lecturer, Department of CSE, UAP
Molla Rashied Hussein	Lecturer, Department of CSE, UAP
Md.Asiful Hossain	Lecturer, Department of CSE, UAP
Bijan Paul	Lecturer, Department of CSE, UAP
Nahida Sultana Chowdhury	Lecturer, Department of CSE, UAP
Md. Akhtaruzaman Adnan	Lecturer, Department of CSE, UAP



University of Asia Pacific

Department of Computer Science & Engineering

House#52/1, Road#3/A, Dhanmondi R/A, Dhaka-1209

Tel: 9664951, PABX: 9664953-133,131, Email: headcse@uap-bd.edu

Date : January 7, 2016
To : The Registrar
From : Head, Department of Computer Science & Engineering (CSE)

Subject: Introduce the new curriculum for the B.Sc. in Computer Science & Engineering program from Fall 2016 semester.

With reference to letter no. UAP/1201/03/Aca/Vol.-X/39, date: December 31, 2015 that the new curriculum for the B.Sc. in Computer Science & Engineering program will be introduced from Spring 2016. Discussion with Pro Vice Chancellor, UAP that the new curriculum will be introduced from Fall 2016 semester.

In this circumstance, the Department of Computer Science and Engineering would highly appreciate if you kindly take necessary actions (i.e., updating Automation System, Admission Section, Finance & Accounts Office, Controller of Examinations section, etc.) for smooth introduction of the new curriculum from Fall 2016 semester.

Forwarding for take the necessary step

Attachments:

1. Previous letter copy

A handwritten signature in black ink, appearing to read "Aloke Kumar Saha", with the date "07.01.16" written below it.

Aloke Kumar Saha
Associate Professor & Head
Department of CSE
Aloke Kumar Saha
Associate Professor & Head
Department of CSE
University of Asia Pacific

Figure 3-6. Introduce New Curriculum from Fall 2016.

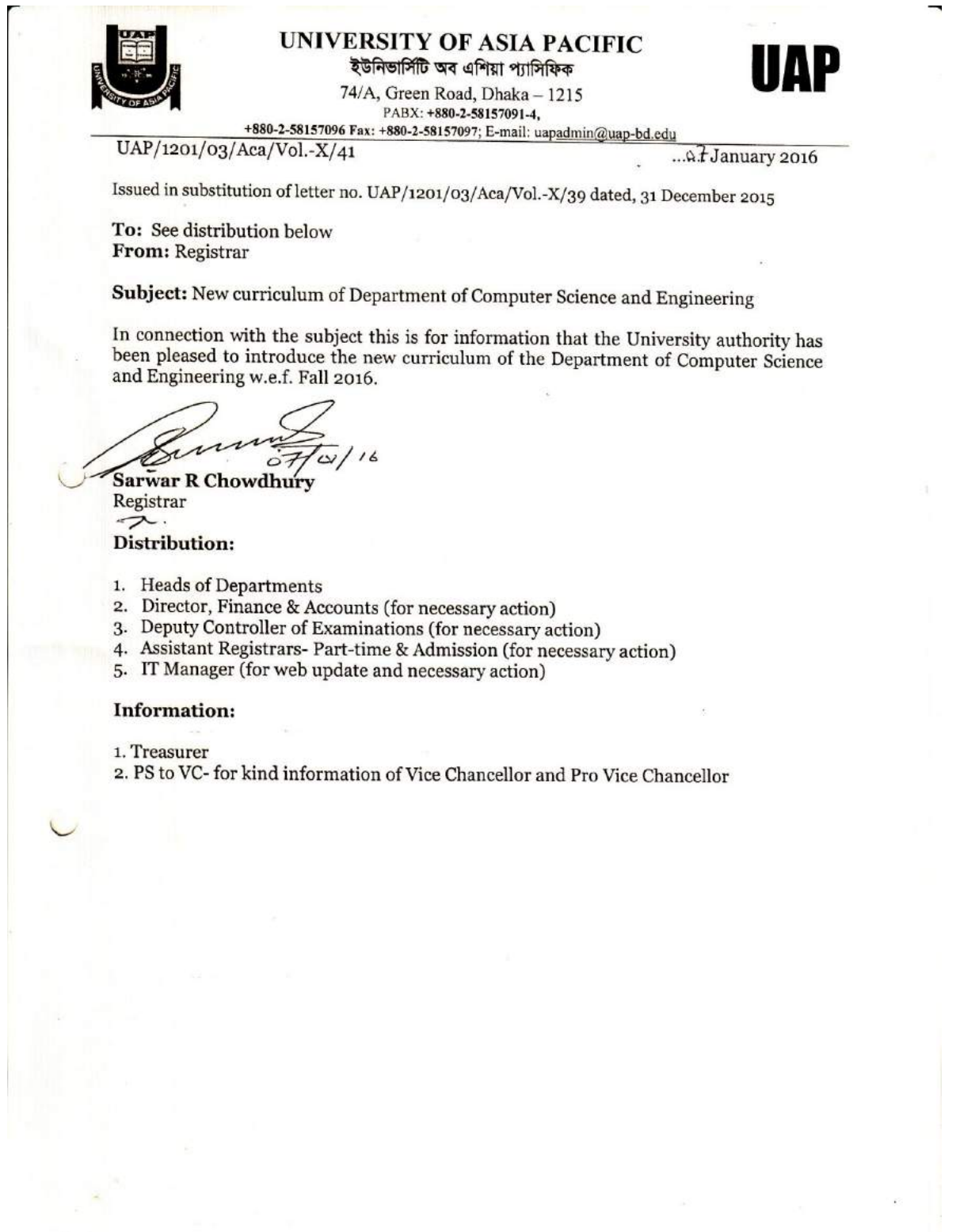


Figure 3-7. Introduce New Curriculum from Fall 2016.

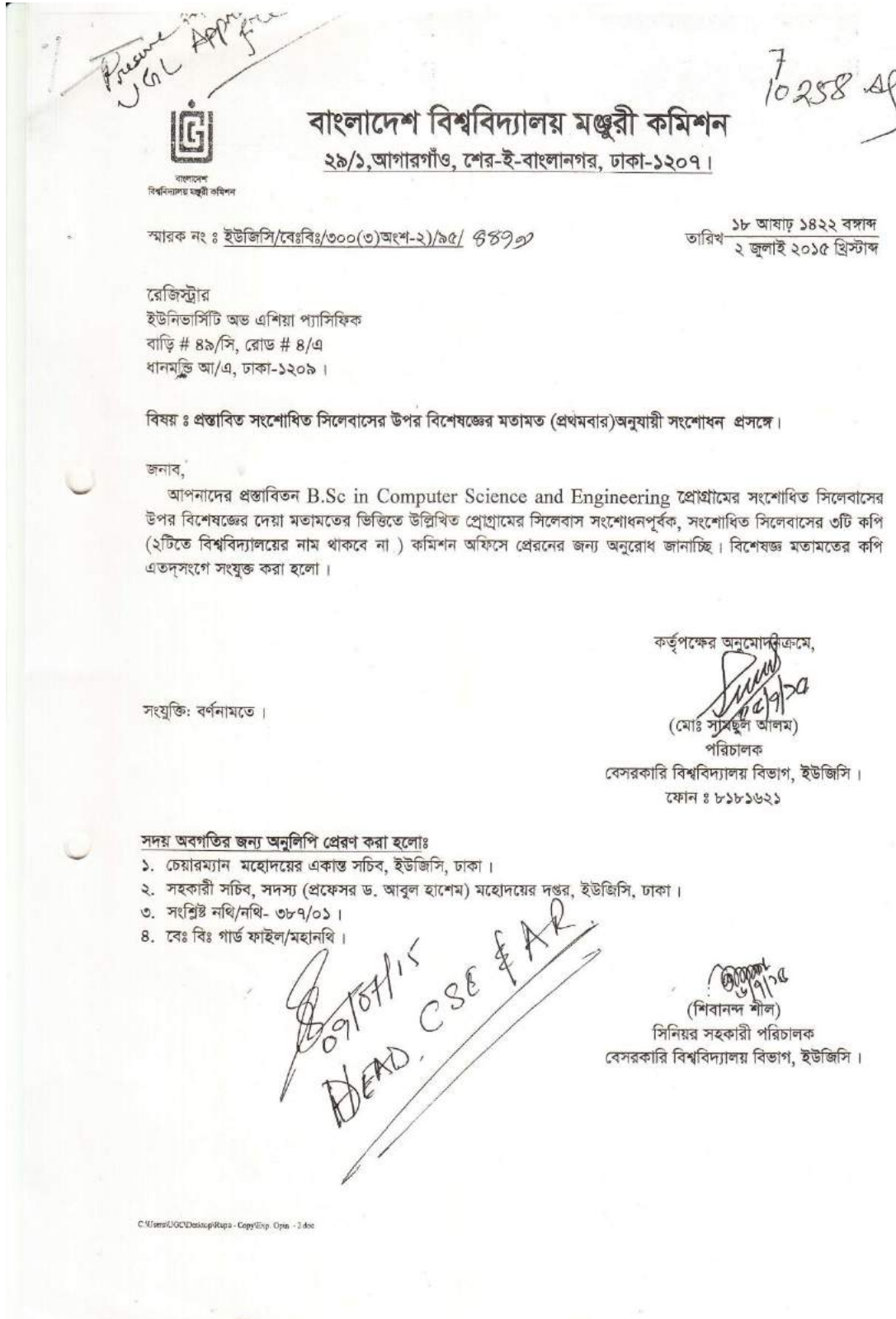


Figure 3-8. UGC Letter for Experts Opinion on New Curriculum of CSE.

UNIVERSITY OF ASIA PACIFIC
House 49/C, Road 4A, Dhanmondi, Dhaka – 1209
E-mail: registrar@uap-bd.edu, website: www.uap-bd.edu

3 February 2014

ADDENDUM TO AGENDA OF 29TH MEETING OF ACADEMIC COUNCIL

Reference: Notice of 29th meeting of Academic Council (Ref: UAP 1200/01/Aca/Vol-IV/41 dated 28 January 2014)

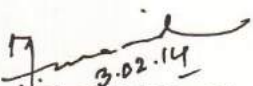
In connection with the reference above, the following item has been added to the agenda of the meeting:

Consideration of modification in syllabus for undergraduate program of Department of Computer Science & Engineering of UAP.

The item will be discussed as item no. 4 (four) in the meeting.

This is for information of all concerned.

By order of the Vice Chancellor.


Dr. Md. Abdul Mazid
Registrar and
Member-Secretary, UAP Academic Council

Distribution:

Chairperson, UAP Academic Council
Members of UAP Academic Council

Information:

Vice Chancellor
Pro Vice Chancellor
Treasurer

Figure 3-9. Notice of Academic Committee for New Curriculum of CSE.

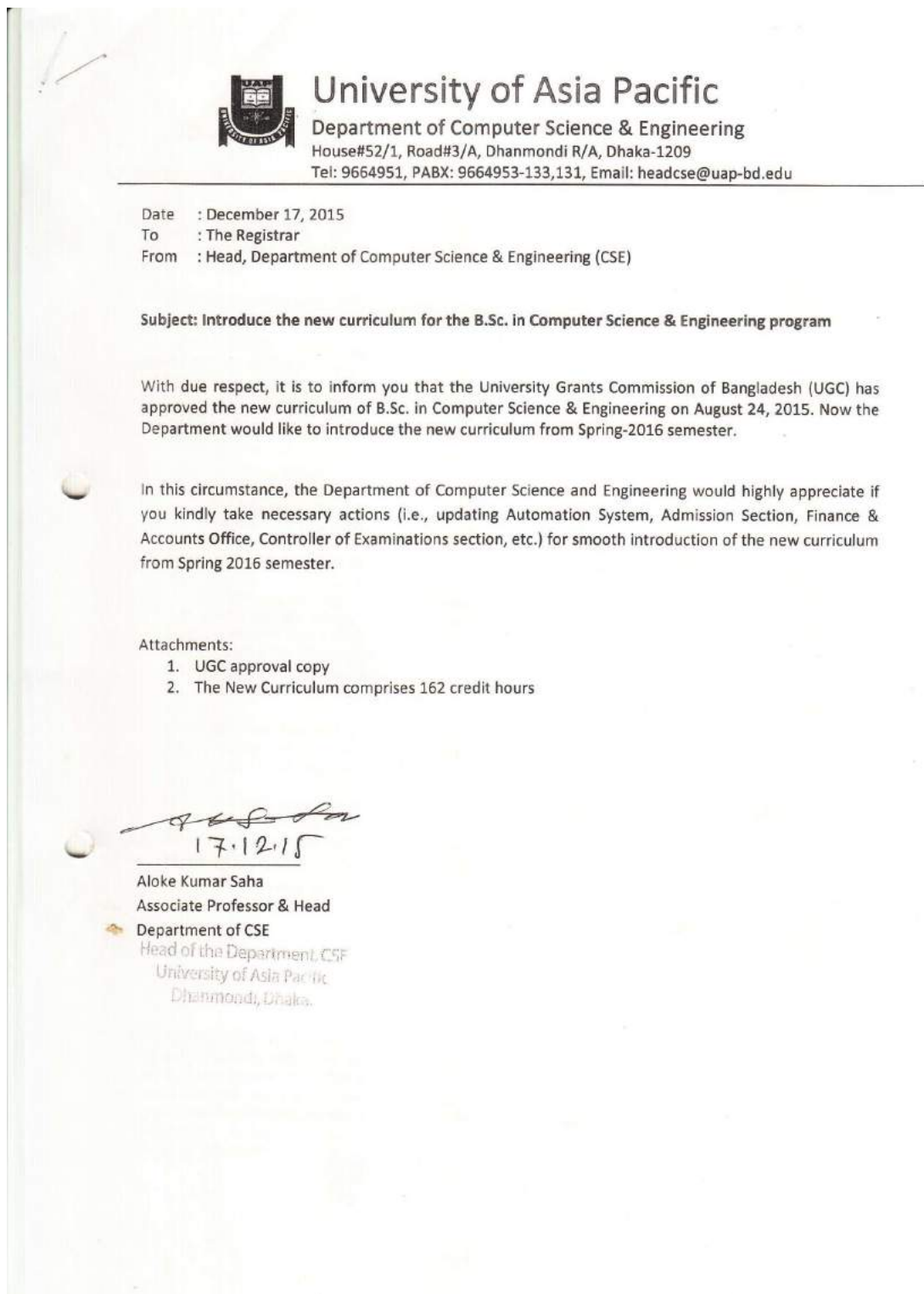


Figure 3-10. Department's Proposal for Introducing CSE New Curriculum from Spring 2016.

১৯/১, আগারগাঁও, শের-ই-বাংলানগর, ঢাকা-১২০৭।
ফোন: ৮১৮১৬১১, ফ্যাক্স: ৮১৮১৬২৯, E-mail: shamsul_uhc58@yahoo.com

10619

নং: বিমক/বোবি/১০০(৩)/অংশ-২/৯৫/ ০৬০৫

তারিখ: ০৯ জুলাই ১৪২২ খ্রিস্টাব্দ
২৪ আগস্ট ২০১৫ খ্রিস্টাব্দ

১. রেজিস্ট্রার
ইউনিভার্সিটি অফ এশিয়া প্যাসিফিক
বাড়ী # ৪৯/সি, রোড # ৪/এ
ধানমন্ডি, ঢাকা-১২০৫।

বিষয়: B.Sc in Computer Science and Engineering (revised) প্রোগ্রামটি অনুমোদন প্রদানে।

জনাব,

আপনাদের বিশ্ববিদ্যালয়ের চলমান B.Sc in Computer Science and Engineering প্রোগ্রামটির প্রস্তাবিত revised সিলেবাস কমিশন কর্তৃপক্ষ নিম্নোক্ত শর্তে অনুমোদন করেছেন:

১. ক্রেডিট আওতাধীন (১৬২) সাহ সিলেবাসে মৌলিক বা গুরুত্বপূর্ণ কোন পরিবর্তনের প্রয়োজন হলে কমিশন কর্তৃপক্ষের অনুমোদন নিতে হবে।
২. প্রোগ্রামটি শুধুমাত্র বিশ্ববিদ্যালয়ের (বাড়ী # ৪৯/সি, রোড # ৪/এ, ধানমন্ডি, ঢাকা-১২০৫) পরিচালনা করা যাবে অন্য কোন ক্যাম্পাসে নয়।
৩. প্রোগ্রামটি ফিল্ডার্স লার্নিং 'mode' এ পরিচালনা করা যাবে না।
৪. কমিশন কর্তৃক অনুমোদিত স্নাতক পর্যায়ে কোন প্রোগ্রাম/কোর্সে কোন ছাত্র-ছাত্রীকে ভর্তি করার জন্য এইচ.এস.সি/এ-সেভেন বা সমমানের পরীক্ষার পাশ থাকতে হবে।
৫. এস.এস.সি এবং এইচ.এস.সি বা সমমানের পাঠ্যক্রম পরীক্ষার প্রতিটি পর্যায়ে অবশ্যই ন্যূনতম দ্বিতীয় বিভাগ অথবা জিপিএ-২.৫ থাকতে হবে। কোন একটি পরীক্ষায় ন্যূনতম ২.০০ থাকলে দুই পরীক্ষার মোট জিপিএ অন্তত ৬.০০ থাকতে হবে। তবে সুকিত্বোক্তার সন্তানদের জন্য দুই পরীক্ষার মোট জিপিএ ৫.০০ থাকলে ভর্তির যোগ্য বলে বিবেচিত হবে।
৬. O-Level পরীক্ষার ন্যূনতম ৫টি বিষয় (subject) এবং A-Level পরীক্ষায় ন্যূনতম ২টি বিষয় (subject) অবশ্যই থাকতে হবে। উক্ত দুটি পরীক্ষায় অন্তত ৩টি বিষয়ের মধ্যে চারটিতে বি শ্রেণি বা জিপিএ ৪.০ এবং বাকী তিনটি বিষয়ে সি শ্রেণি বা জিপিএ ৩.৫ অবশ্যই থাকতে হবে। GED পরীক্ষার প্রতিটি কোর্সে অর্থাৎ পাঁচটি কোর্সেই পৃথকভাবে ১০০ নম্বরের মধ্যে ৪১০ এবং গড় ৪৫০ নম্বর প্রাপ্ত শিক্ষার্থী বেসরকারি বিশ্ববিদ্যালয়ে স্নাতক পর্যায়ে ভর্তির যোগ্য বলে বিবেচিত হবে।
৭. এই প্রোগ্রামটির জন্য প্রতি সেমিস্টারের সেরাফ্রি আসন সংখ্যা ৫০ জন। যে কোন কোর্সে ভর্তির সময় প্রত্যেক ছাত্র-ছাত্রীকে একটি রেজিস্ট্রেশন নম্বর প্রদান করতে হবে এবং কোর্স সম্পন্ন না হওয়া পর্যন্ত উক্ত রেজিস্ট্রেশন নম্বর বহাল থাকবে এবং বিশ্ববিদ্যালয় কর্তৃক প্রদত্ত সনদপত্র ও মার্কশীটে উক্ত রেজিস্ট্রেশন নম্বর উল্লেখ থাকতে হবে।
৮. কোন প্রোগ্রাম/কোর্স পরিচালনার জন্য কমিশনের শিক্ষক নিয়োগ নীতিমালা অনুযায়ী একজন অধ্যাপক/সহযোগী অধ্যাপক/নয় ন্যূনতম ০৪ (চার) জন পূর্ণকালীন শিক্ষক থাকতে হবে। উল্লেখ্য, এডভাইজার পদধারী কোন ব্যক্তির দ্বারা কোন প্রোগ্রাম/কোর্স পরিচালনা করার সুযোগ নেই।
৯. বিশ্ববিদ্যালয়ের প্রদত্ত তালিকা অনুযায়ী অনুমোদিত শিক্ষক নিয়োগের পর নিয়োগকৃত কোন শিক্ষক পরিবর্তনের প্রয়োজন হলে পুনরায় কমিশনের অনুমোদন নিতে হবে। কোন কারণে বর্ধিত বিষয়ের ন্যূনতম শিক্ষক সংখ্যার (একজন অধ্যাপক/সহযোগী অধ্যাপক/নয় কমপক্ষে ০৪ জন পূর্ণকালীন শিক্ষক) ঘাটতি দেখা দিলে প্রয়োজনীয় ন্যূনতম সংখ্যক শিক্ষক তিন মাসের মধ্যে পূরণনিশ্চয় দিয়ে কমিশনকে অবহিত করতে হবে।
১০. বর্ধিত কোর্সে পাঠ্যক্রমের জন্য বিশেষী শিক্ষক নিয়োগ করার প্রয়োজন হলে কমিশনের অনুমোদন/সুপারিশ গ্রহণপূর্বক সরকারের নির্দিষ্ট বিজ্ঞপ্তি/দফতর থেকে ওয়ার্ডার শারমিট সংগ্রহ করে কমিশন অফিসে জমা দিতে হবে।

বিশ্ববিদ্যালয় মঞ্জুরী কমিশন কর্তৃক অনুমোদিত অভিন্ন প্রোগ্রাম পদ্ধতি বধ্যবদ্ধভাবে অনুসরণ করতে হবে।
এই প্রোগ্রামের Revised সিলেবাসটি পত্র জারীর তারিখ থেকে অনুমোদিত বলে গণ্য হবে।

প্রোগ্রামটি পরিচালনার উদ্দেশ্যে উপরোক্ত শর্তসমূহ কঠোরভাবে অনুসরণ ও প্রতিপালন নিশ্চিত করার জন্য অনুরোধ করা হলো।

কর্তৃপক্ষের নিম্নস্বাক্ষরে
মোঃ সামুয়েল আলম
পরিচালক
বেসরকারি বিশ্ববিদ্যালয় বিভাগ, ইউজিসি।

সদর অবগতির জন্য অনুলিপি প্রেরণ করা হলো:

১. পরিচালক, আইএমসিটি, ইউজিসি, ঢাকা (ওয়েবসাইটে তথ্য update করার ব্যবস্থা গ্রহণের জন্য অনুরোধ করা হ'ল)।
২. চেয়ারম্যান মহোদয়ের একান্ত সচিব, ইউজিসি, ঢাকা।
৩. সহকারী সচিব, সদস্য (প্রফেসর ড. আবুল হাসেম) মহোদয়ের দপ্তর, ইউজিসি, ঢাকা।
৪. জনাব মোহাম্মদ হোসেন সরকার, প্রশাসনিক কর্মকর্তা, বেসরকারি বিশ্ববিদ্যালয় বিভাগ, ইউজিসি, ঢাকা।
৫. সংশ্লিষ্ট নথি/মিথি - ৩৮৭/০১।
৬. বো: বি: পার্স ফাইল/মহানবি।

31/8/15
Pro VC

8.9.15

শিবাসিনী দাস
সিনিয়র সহকারী পরিচালক
বেসরকারি বিশ্ববিদ্যালয় বিভাগ, ইউজিসি।

Figure 3-11. Letter from UGC for approval of CSE New Curriculum.

3.4 Curriculum and Skill Mapping

Program Outcomes (POs) are defined in terms of knowledge, skills and attitude that students are expected to attain by their time of graduation. Each course outline consists of a certain number of POs. To define and implement these POs, a number of workshops and seminars has taken place in the department, where the faculty members received training from the experts on their respective field. After having consecutive training, workshops, seminars and intensive discussions, all the faculties agreed upon the 12 POs for the CSE program. These POs are stated in each course outline provided to the students by the respective course instructor at the beginning of the semester. The 12 POs along with their definitions/explanations are presented in Table 3.7 [Standard 2-4]. More information regarding POs can be found in Appendix A.

Table 3-7. Program Outcomes (POs) with their Definitions/Explanations

No.	Program Outcomes	Definitions/Explanations
1	Engineering Knowledge	Breadth and depth of education and type of knowledge
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

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

Stakeholders' View

Table 3-8. Response of stakeholders to questions related to standard 2-4.

Aspect of Evaluation	Alumni	Students	Faculties	Grand Mean
Curriculum load is optimum and exerts no pressure.	3.67	3.48	3.83	3.66

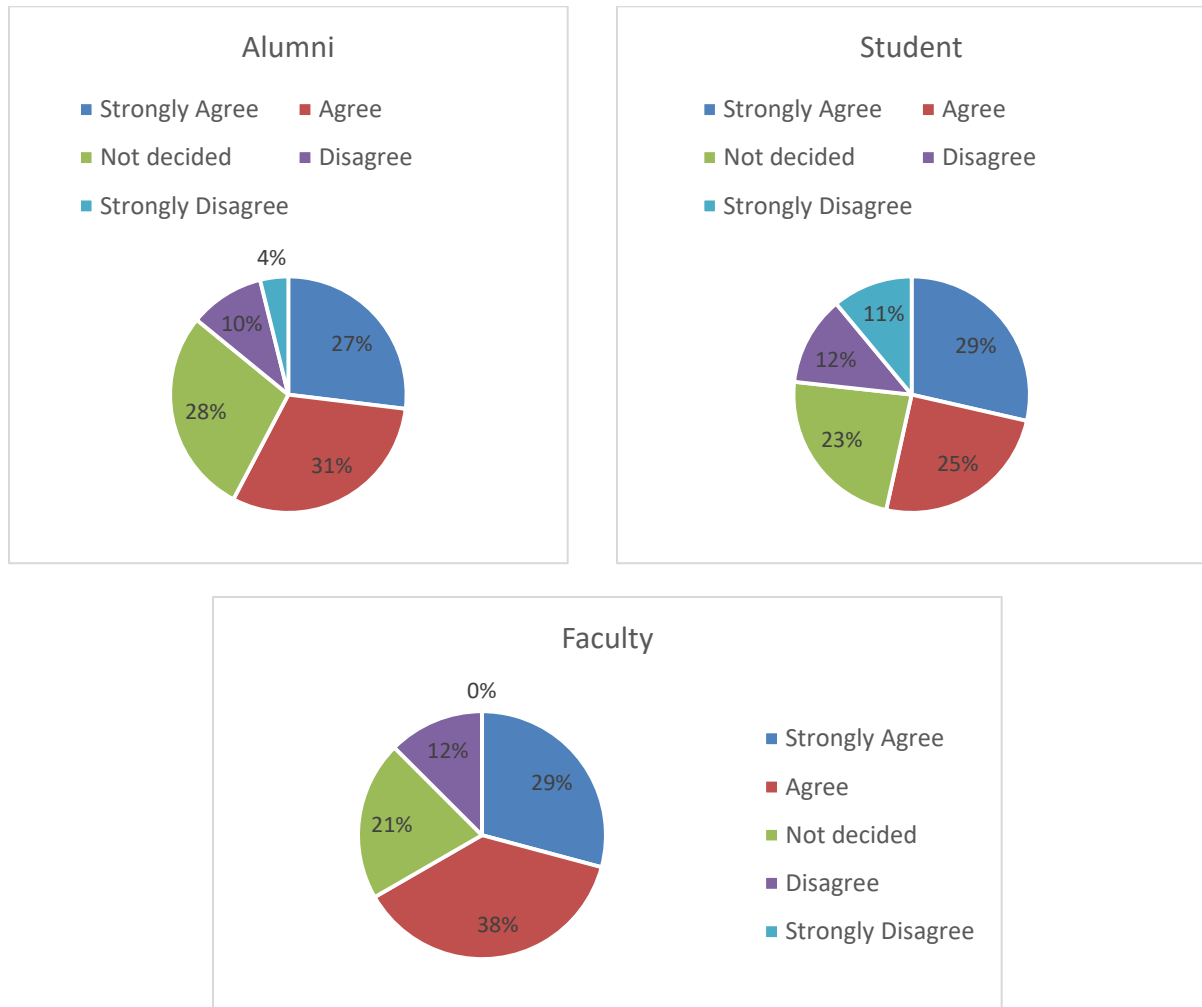


Figure 3-12. Responses of stakeholders for the question "Curriculum load is optimum and exerts no pressure (2.4)"

Table 3-9. Response of stakeholders to questions related to standard 2-5

Aspect of Evaluation	Faculties
Curriculum addresses program objectives and learning outcomes	3.86

Table 3-10. Employers' Perception

Dimension of Quality	Recruitment	Performance
Job knowledge (knowledge on the subject matter)	3.95	4.05
IT Knowledge	3.79	4.05
Ability to link theory into practice	3.89	3.84
Presentation Skills	4.21	3.95
Sense of Responsibility	4.26	4.05

3.5 Gaps in Curriculum

Changing the curriculum is a continuous process. Identifying the gaps and addressing those effectively, will always bring improvements. Technological advancement and explosion of knowledge is the basic reason of changing course curriculum.

In the existing curriculum, there are a number of gaps that had been identified during the review process of course outline of individual courses of CSE curriculum. Those limitations had been addressed by proposing and implementing the revised curriculum at the dept. of CSE. Several recommendations have come out from the current students, alumni, faculty members and employers.

A brief enumeration on this issue is highlighted below:

1. Even though there are number of programming languages included in the course curriculum, including some more advanced and latest programming languages like Ruby on Rails, ML, BPN, Python in the course curriculum will improve the programming language diversity of the students.
2. Including some most promising and demandable research based courses like User Privacy and Cyber Security may help the students for further research and higher study fund during and after the graduation.
3. Guest speaker from top level industry with different expertise may be invited to conduct certain topics which may include in the revised curriculum and can share their real-life industry experience with the students.
4. Internship program can be included in the curriculum so that the students can get on-hand experience before completion of their graduation.
5. Effective training program for the students on different programming language will increase the programming capability and increase the confidence to take challenge on competitive development.
6. Some courses or projects can be included where students will be able to implement real life related problem through the use of ICT.
7. Industrial courses can be included in the curriculum to provide the students prior knowledge on practical job environment.
8. Collaboration with foreign universities will help the students to take part in exchange program which will increase the students' skill diversity.
9. Frequent presentation practice during the semester will increase the communication and presentation skills of the students.

Stakeholders' View

Table 3-11. Relevance of Curriculum in Achieving Day-one Skill

Aspect of Evaluation	Alumni	Faculties	Grand Mean
The curriculum is effective in achieving day-one skill (which happens right at the beginning of the first day at job place).	3.474359	3.625	3.5496795

CHAPTER IV

STUDENT ADMISSION, PROGRESS AND ACHIEVEMENTS

4.1 Entry Qualification

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

Entry requirements of UAP are well defined. Before beginning of each semester, Registrar office of UAP circulates notice for undergraduate admission test and prescribed application form which is 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.

Registrar office also gives advertisements in the leading Bengali & English newspapers to inform prospective candidates. After that, the role of admission office begins, which is very crucial because it is the first point of contact for prospective students. The office of admission at UAP is dedicated to assisting students and communicating with prospective students and their parents/guardians.

Department of CSE, UAP has some criteria that ensure applicants possess the skills and knowledge to successfully complete the program. These requirements are as follows:

B.Sc. Engineering

Candidates scoring total GPA of 7.50 in SSC and HSC (with Min GPA 3.00 in HSC) or scoring total GPA of 7.00 in SSC and Diploma can sit for the admission test in B.Sc. Engineering in CSE program.

Candidates with minimum GPA of 2.5 in O level in five subjects and A level in two subjects and total GPA of 6.0 according to UAP scale are eligible to apply for admission.

Candidates must have Physics, Mathematics in HSC (or equivalent) and Chemistry in either SSC or HSC (or equivalent).

GED candidates would be eligible to get admission if they have a cumulative score of 2250 and not less than 410 in individual modules.

Candidates having a break of study of not more than two years may apply for admission.

Candidates transferring credits from any other university with a system similar to UAP are allowed to apply with the required documents and the matter will be decided by the Equivalence Committee of Department of CSE.

Candidates successfully completing school abroad are required to submit their applications and verified/attested copies of previous academic documents/transcripts from their institute/Foreign Ministry & Equivalence Certificate from Secondary & Higher Secondary Education Board, Dhaka.

Candidates who pass through the admission test are then called for a viva voce examination. However, candidates scoring total GPA of 10.00 in SSC and HSC are directly called for the viva voce examination.

M. Sc.

Candidates must have one 1st class/ 1st Division in any public examination. 50% Marks or CGPA 2.50 out of 4.00 in B.Sc. Engineering is required. Candidates must not have 3rd Division/ class in any public examination. Candidates meeting all the above requirements are selected for admission with the approval of Head of the Department.

Table 4-1. Response of stakeholders to questions related to standard 3-1

Aspect of Evaluation	Students	Alumni	Teachers	Staff	Grand Mean
Admission policy ensures entry of quality students	3.72	3.55	3.71	N/A	3.66

From the survey data, it is evident that admission policy reasonably ensures entry of capable and quality students. It can be interpreted from the findings that while faculty members and students concurred with the statement, the alumni were also in favor of the claim. The response could be attributed to the fact that if all private universities complied with the policy of UGC in following ‘Semester System’, then admission time for all universities will be uniformed which would accelerate competition and ensure the process of acquiring quality students.

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.

1. Engineering students need to know the basics of Math, Physics and Chemistry very well to carry out the program successfully. For this, the eligibility criteria of the department mentioned that candidates must have these subjects in SSC, HSC (or equivalent).

2. GPA 7.50 is the prerequisite for appearing in the admission test. However, meeting this requirement does not guarantee an entry to the program. It will merely ensure the eligibility to sit for written test.
3. The eligible candidates sit for a 1.5 hour admission test on Mathematics, Physics, English and Aptitude. The test is designed in such a way by which candidates' quantitative aptitudes, English proficiency and subject-wise knowledge are evaluated.
4. The distribution of total marks of CSE Undergraduate Admission Test is given below:

Time:	90 minutes
Total Marks:	100
Mathematics:	40
Physics:	30
English:	20
Aptitude:	10

Stakeholders' View

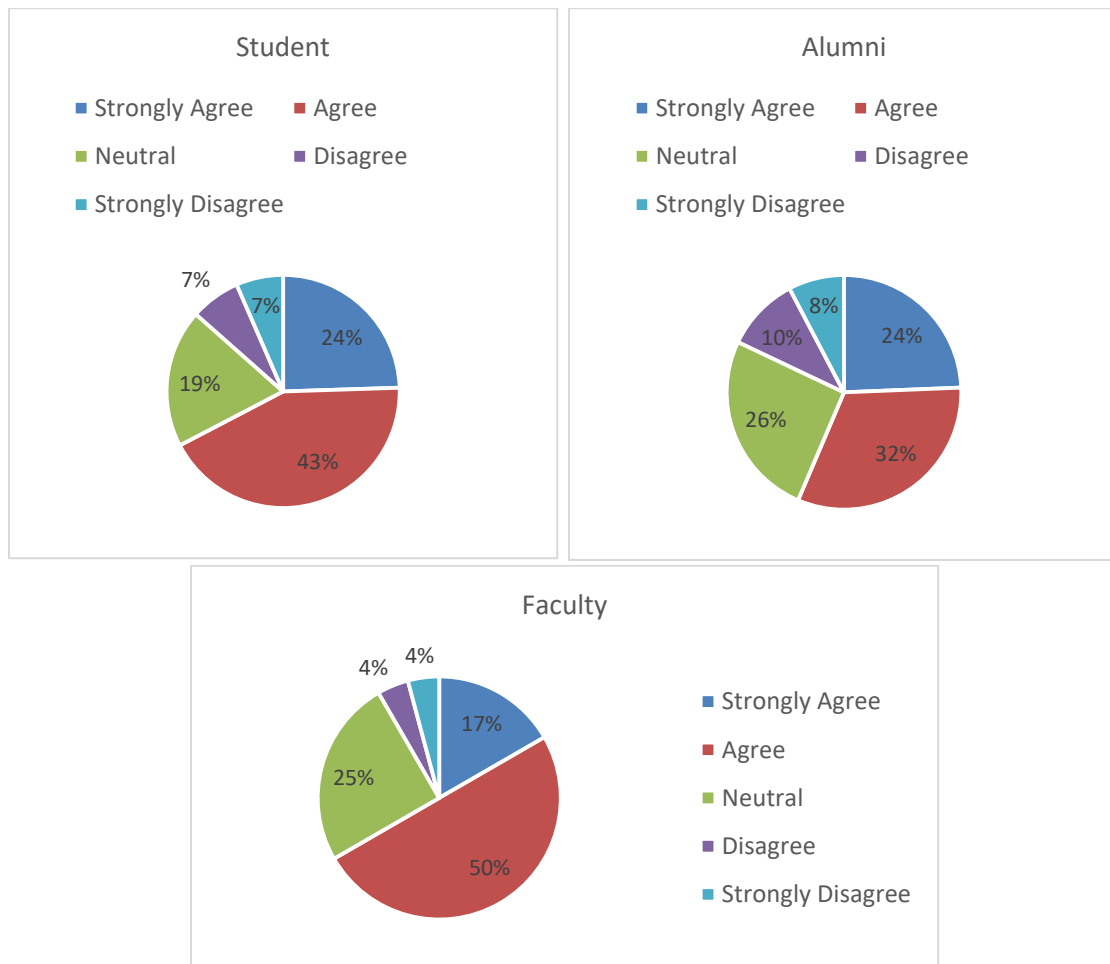


Figure 4-1. Responses of stakeholders for the question “Admission policy ensures entry of quality students”

Table 4-2. Response of stakeholders to questions related to standard 3-2

Aspect of Evaluation	Students	Alumni	Teachers	Staff	Grand Mean
Commitment among students is observed to ensure desired progress and achievement	3.63	3.45	3.63	N/A	3.57

The survey results manifest that the alumni fairly agreed with their response while the other two stakeholders responded positively. It can be assumed that the alumni are not acquainted with the inclusion of the rigorous selective process of admission. However, grand mean score is 3.57, indicating that current admission procedure facilitates to get commitment from the students to ensure desire progress and achievement but scope for improvement is still there.

33% faculty members and 32% alumni gave neutral response to the question. This can be explained because of the fairly high acceptance rate in the admission test. The department is concerned of this matter and trying to reduce the number of student intake each semester to improve the overall quality of admission procedure.

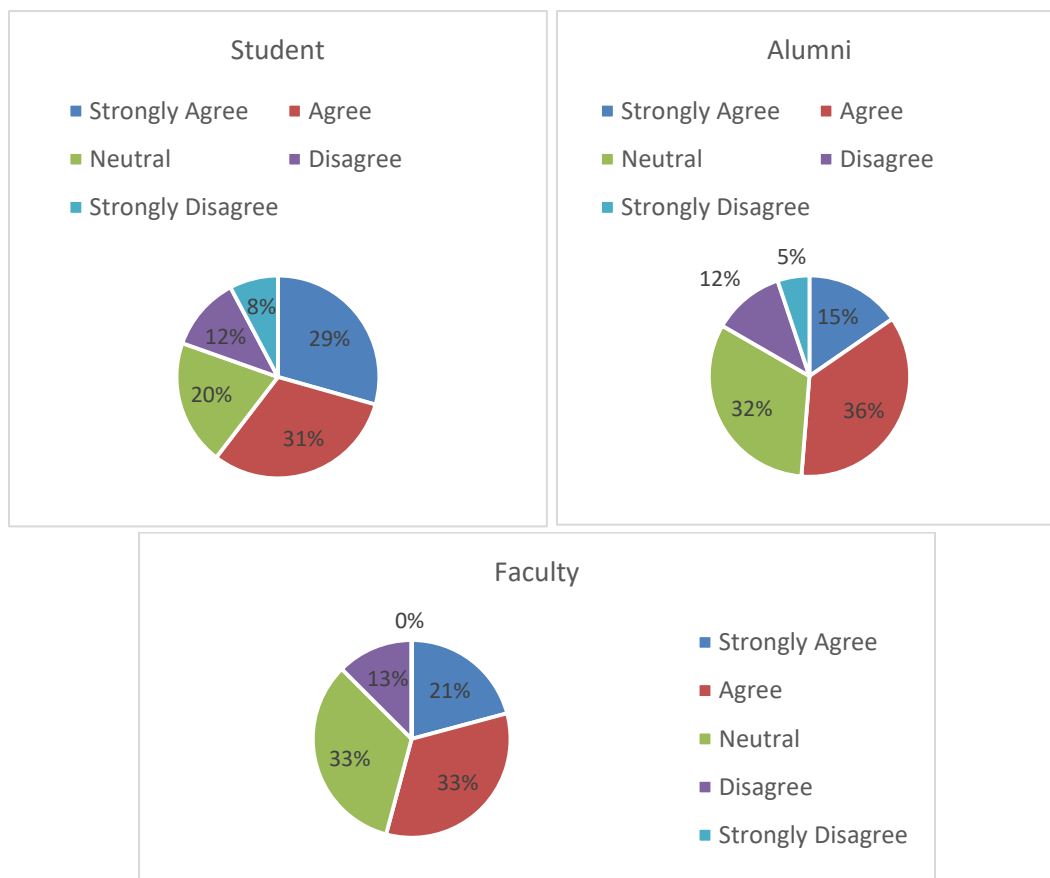


Figure 4-2. Responses of stakeholders for the question “Commitment among students is observed to ensure desired progress and achievement”

4.2 Admission Procedure

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.

UAP pays close attention to standard approach in terms of admission procedure. In compliance with UAP rules, Department of CSE conducts two admission tests before each of Spring and Fall Semester. Dates of the tests are published in newspapers and on the university website. Prospective candidates taking admission to B.Sc. Engineering in CSE program have to collect admission materials from the admission office and return the application forms with necessary documents to the admission office. The entire process of admission goes through a rigorous selection process where applicants are asked to follow the given instructions. To get admitted into B.Sc. Engineering program all candidates must sit for a written admission test and a viva voce. At the time of taking admission, selected candidates must submit attested copy of original certificates, transcripts/mark sheets, testimonials etc.

Results of SSC, HSC examinations and marks obtained in admission test are assessed for selecting prospective candidates. For admission into B.Sc. Engineering program, candidates are given a score out of Total 300. The distribution is as follows:

- GPA of both SSC and HSC exam (or equivalent) are converted to 100 separately (Earned GPA x 20)
- Admission Test Score out of 100

The Admission Test of B.Sc. Engineering in CSE program has two phases:

- Written Test
- Viva Voce

For conducting the written test, an examination committee is formed with the Head of the department as the Chair. A group of teachers from the department act as question setters, invigilators, script examiners and scrutinizers. The Admission Committee also sets the minimum score out of 300 for eligibility of admission and prepares result which is published by the admission office. Admission office then informs selected candidates the date and venue of viva voce.

For M.Sc. in CSE program, only 10 candidates are selected each semester after viva voce and direct approval from Head of the department.

Table 4-3. Response of stakeholders to questions related to standard 3-3

Aspect of Evaluation	Students	Alumni	Teachers	Staff	Grand Mean
Admission procedure is quite fair	3.64	3.56	3.50	N/A	3.57

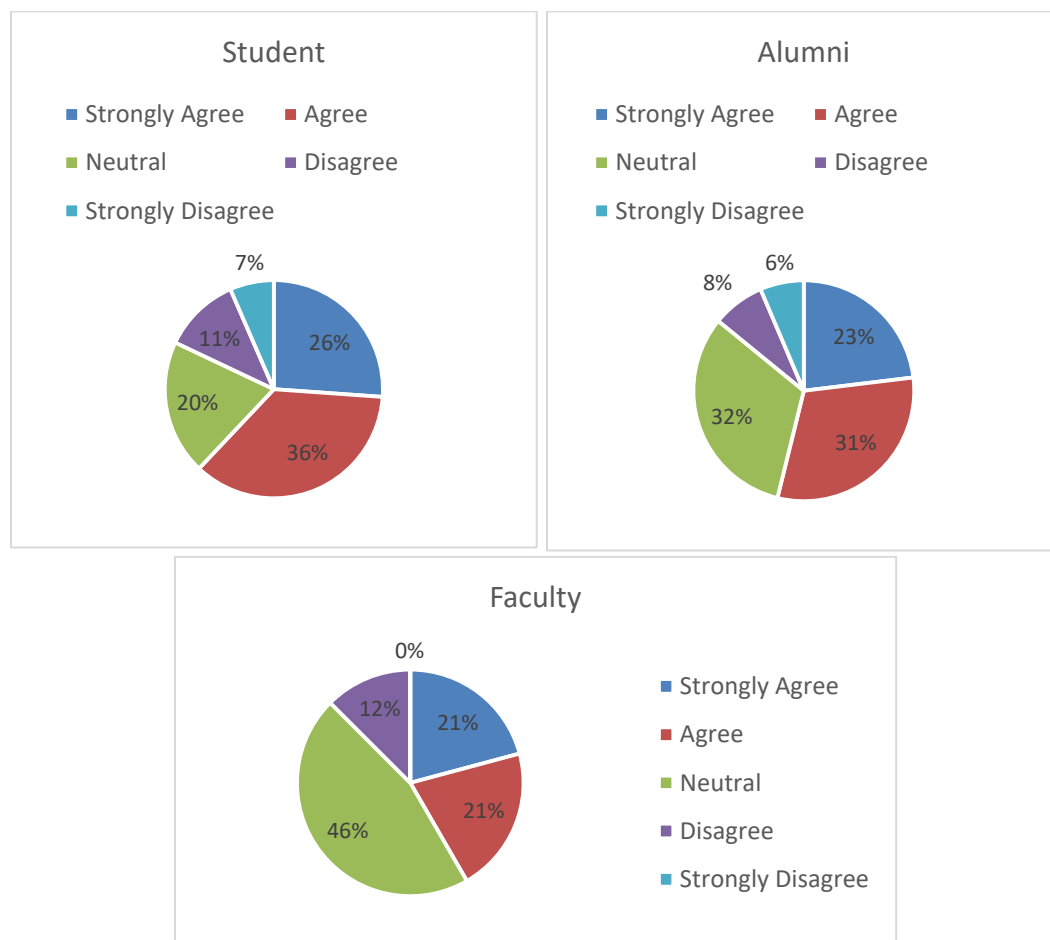


Figure 4-3. Responses of stakeholders for the question “Admission procedure is quite fair”

In the survey, 3 groups namely alumni, students, and teachers have been asked the question “Admission procedure is quite fair”. The stakeholders mostly either agreed or remained neutral on the topic. A large number of faculty members (46%) remained neutral too indicating that revision on the

admission procedure can bring further improvement. The department of CSE is actively taking measures to ensure the quality of admission test procedure.

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

The department ensures that it maintains integrity in completing the admission process. As mentioned earlier, a separate committee is formed to handle the admission process. The committee consists of three members who are responsible to carry out all the activities regarding admission test. Members of the committee are responsible for preparing the admission test questions, photocopying the questions, seat planning, checking the scripts and preparing the written test results. The committee assigns teachers of the department for any of the above tasks as required. Admission committee also announces the viva voce date for the selected students. Except the members of the admission committee, no other faculty member is involved with the process. Confidentiality is strictly maintained in every phase from preparing the question to scrutinizing the script by each of the members of admission committee.

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

The eligibility to apply for admission in the B.Sc. Engineering program is determined by the students' academic credentials of last 4 years.

Standardized questions are designed for ensuring competitive entry which in turn helps to successfully screen out deserving candidates. In the most recent admission test of Fall 2017, 175 candidates participated in written test. Among them, 120 were finally selected for admission.

If more than one student gets same marks in written examination then deserving candidate is selected through the final viva voce.

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

Students admit into the program after qualifying the admission examination by the department. This examination is quite standardized which ensures selection of capable students. The potentials of the prospective candidates are tested by questions focused on creative and fundamental problems.

The syllabus of admission test includes Mathematics, Physics, English and Aptitude. Each of these topics is required to successfully complete the engineering program. Students' knowledge on these

topics is checked through the examination. This procedure enables to select potential students who can complete the degree requirements.

3% of total seats are reserved for the children of Freedom Fighters and another 3% for meritorious but poor students from remote areas of Bangladesh. They are offered full free education opportunity.

Table 4-4. Undergraduate Student Admission and Passing out Record

Year	Students Admitted	Students Passed out	Year	Students Admitted	Students Passed out
Spring'96	09	-	Fall'06	12	-
Fall'96	27	-	Spring'07	18	29
Spring'97	22	-	Fall'08	22	36
Fall'97	33	-	Spring'08	34	5
Spring'98	18	-	Fall'08	38	6
Fall'98	52	-	Spring'09	39	6
Spring'99	39	-	Fall'09	38	7
Fall'99	69	9	Spring'10	58	10
Spring'00	59	15	Fall'10	30	10
Fall'00	89	23	Spring'11	81	20
Spring'01	83	24	Fall'11	100	24
Fall'01	67	13	Spring'12	100	13
Spring'02	72	23	Fall'12	54	27
Summer 02	-	17	Spring'13	95	22
Fall'02	45	18	Fall'13	48	36
Spring'03	33	44	Spring'14	110	18
Fall'03	13	46	Fall'14	131	21
Spring'04	18	64	Spring'15	155	30
Fall'04	07	52	Fall'15	150	35
Spring'05	12	61	Spring'16	207	27
Fall'05	-	67	Fall'16	155	-
Spring'06	07	39			

4.3 Progress and Achievement

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.

The Quality Assurance Cell of UAP has started their activity recently.

1. The Controller of Exam office stores the records of Students' progress and achievements. Teachers, Administrative Offices and respective students can access these records through UAP Automation Software (<https://uap.orbund.com>).
2. Monitoring of student is done by the advisor of each student. Advisors track a student's academic progress and give academic guidance and mentoring accordingly.

3. The department of CSE has been practicing a rigorous individual and group counseling by the concerned course teachers. This counseling offers students the opportunity to sit down one-on-one with a course teacher apart from his/her regular class schedule. During the counseling period, course teacher discusses specific academic concerns that the student might have, offers suggestions on strategies to improve academic performance, and addresses other issues hindering academic performance.

4.3.1 Student Advisor

Department of Computer Science & Engineering has a strong student advisory system. One advisor is appointed for a group of students by the concerned department. The advisors usually perform the following responsibilities:

- Maintain regularly scheduled office hours for academic advising as needed throughout the semester.
- Assist the students in selection of courses on a short-term and long-term basis.
- Monitor academic progress of advisees as well as their behavior, manner in the campus and initiate contact with advisees those are failing to progress satisfactorily.
- Inform students the changes in academic policy, rules and curriculum in the university.
- For students with excellent academic background and for needy students, advisor recommends to the higher authority for financial assistance.

10.

UAP has a waiver policy which is given on the basis of Semester GPA. Tuition fee waiver (only for merit-based) is awarded based on GPA.

4.3.2 Scholarships and Waiver Policy

- Top 3% students in each department are offered 100% tuition waiver based on semester results.
- Vice Chancellor's special tuition fee waiver are offered in amount 10%-100% to poor but meritorious students.
- 50% waiver for students with individual GPA of 5.00 in S.S.C and H.S.C.
- 25% waiver for students with individual GPA of 4.50 in S.S.C and H.S.C.
- 10% waiver for students with individual GPA of 4.00 in S.S.C and H.S.C.

4.3.3 Criteria for semester based tuition fee waiver (including Vice Chancellor's Special Tuition fee waiver)

- Has to be regular throughout all the semesters (i.e. no break of studies or lower than acceptable credit hours enrolled un any semester)
- Has a record of good conduct
- Has no outstanding dues
- Is not availing any other concession/waivers
- Is not financially solvent
- Has been recommended by the Head of the Department and Advisor
- Has obtained one of the following GPAs

GPA	Percentage of Tuition fee waived
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3.5-3.74	25%
3.75-3.89	50%
3.90-3.99	75%
4.0	100%

Table 4-5. Tuition Fee Waiver granted for Spring 2017 and Fall 2016 Semesters

Type of Waiver	Amount (BDT)	
	Spring 2017	Fall 2016
Entry Level (GPA \geq 4.00 in SSC and HSC)	2,152,763	808,300
Package	132,000	132,000
Sibling Basis	279,300	257,400
Merit Basis	3,053,188	2,146,500
Special Waiver	379,188	333,300
Freedom Fighter	229,250	222,000
BOT Waiver	493,314	558,500
Total	6,719,003	4,458,000
Total Amount Receivable	60,106,750	50,303,000
Percentage of Waiver	11.18%	8.86%

Table 4-6. Response of stakeholders to questions related to standard 3-7

Aspect of Evaluation	Students	Alumni	Grand Mean
Students' progress are regularly recorded and monitored	3.67	3.55	3.61
Teachers provide regular feedback to the students about their progress	3.76	3.39	3.58

It is seen from the survey that, the 26% alumni remained neutral regarding the process of recording and monitoring the students' progress whereas the existing students were closed to becoming affirmative. The response could be attributed to the fact that there lies significant room for improvement in terms of regular monitoring and recording of students' progress.

In response to the 2nd question, "Teachers provide regular feedback to the students about their progress" the aforementioned 2 groups' mean scores were 3.76 and 3.39 respectively. It can be interpreted from the result that the current students receive regular feedback from their teachers which guide their future improvement. Though, a large group of stakeholders remained neutral on the topic. The grand mean signifies that the stakeholders were in favor of the statement.

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.

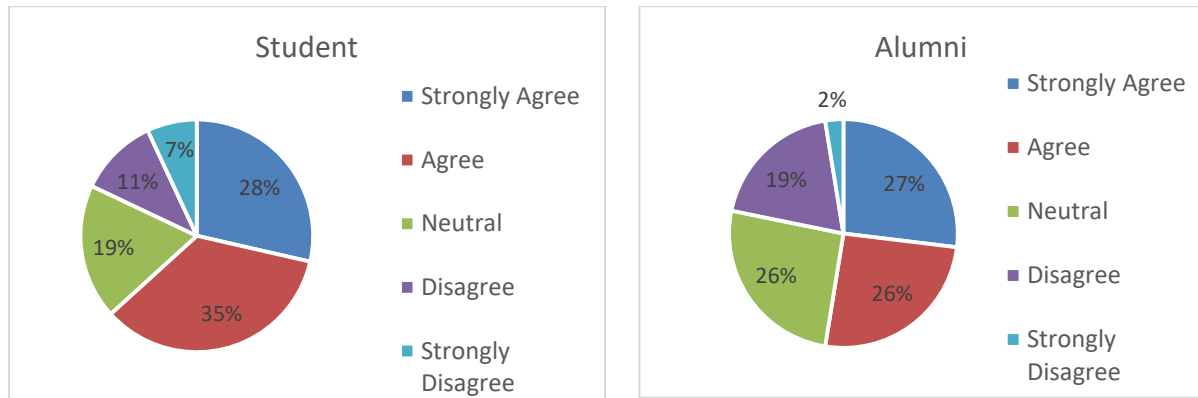


Figure 4-4. Responses of stakeholders for the question “Students’ progress is regularly recorded and monitored”

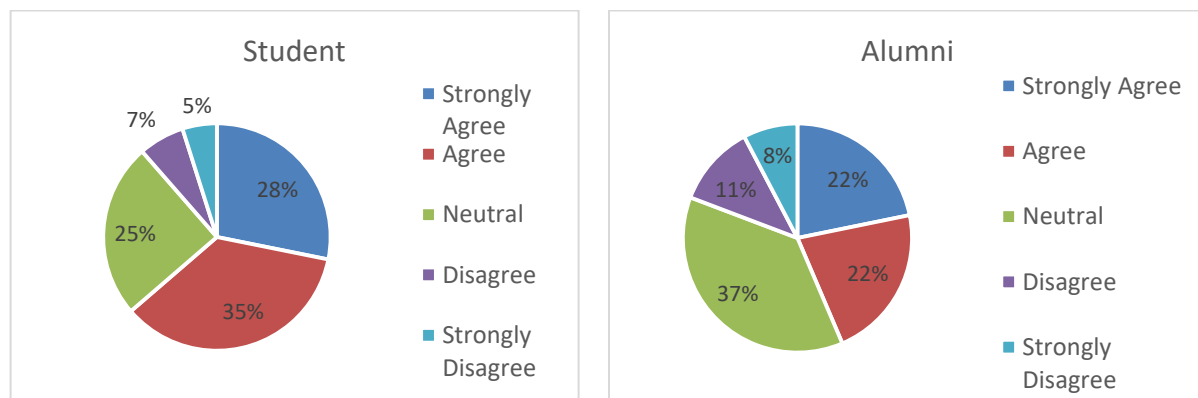


Figure 4-5. Responses of stakeholders for the question “Teacher provide regular feedback to the students about their progress”

The Controller of Exam office maintains the record of the total number of years, semesters, credits and other academic records for each student. All the faculties are responsible for preparing the academic results through automation software and submitting the result within a due date, which is set by the authority. Based on these results, Controller of Exam office issues the certificate for successful students.

Table 4-7. Response of stakeholders to questions related to standard 3-8

Aspect of Evaluation	Students	Alumni	Teachers	Staff	Grand Mean
The entity maintains individual student's	3.72	3.65	3.96	N/A	3.78

records properly					
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The survey scores imply that the faculty members were almost convinced with the process of maintaining academic records of students. It can be assumed from the result that alumni are not aware of the automation software which has been used for processing the academic results. However, grand mean score 3.78 depicts that further improvement is required in this regard in order to get positive response from the alumni and students.

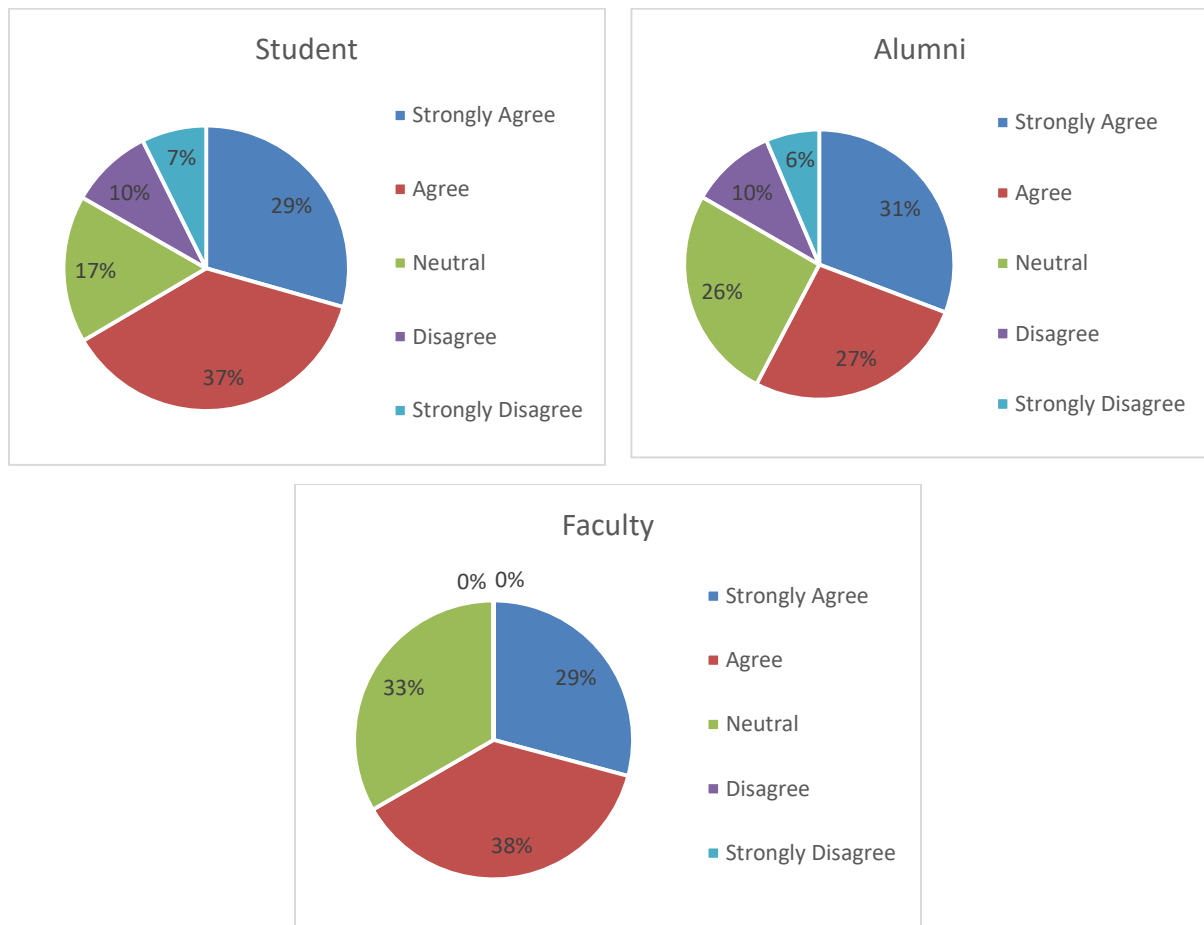


Figure 4-6. Responses of stakeholders for the question “The entity maintains individual student’s records properly”

Table 4-8. Number of students securing honors or distinction

Year	First Class (CGPA \geq 3.00)	Distinction (CGPA \geq 3.75)	Total number passing

Year	First Class (CGPA \geq 3.00)	Distinction (CGPA \geq 3.75)	Total number passing
Fall'98	26	14	-
Spring'99	14	03	-
Fall'99	24	04	9
Spring'00	14	07	15
Fall'00	39	10	23
Spring'01	28	02	24
Fall'01	8	04	13
Spring'02	22	05	23
Summer'02	13	02	17
Fall'02	17	03	18
Spring'03	08	01	44
Fall'03	09	01	46
Spring'04	40	15	64
Fall'04	36	9	52
Spring'05	23	5	61
Fall'05	30	7	67
Spring'06	18	5	39
Fall'06	-	-	-
Spring'07	7	4	29
Fall'07	10	6	36
Spring'08	-	-	5
Fall'08	4	-	6
Spring'09	2	1	6
Fall'09	5	-	7
Spring'10	9	4	10
Fall'10	5	1	10
Spring'11	11	4	20
Fall'11	5	2	24
Spring'12	12	2	13
Fall'12	10	4	27
Spring'13	11	2	22
Fall'13	14	2	36
Spring'14	16	3	18
Fall'14	17	1	21
Spring'15	24	2	30

Year	First Class (CGPA \geq 3.00)	Distinction (CGPA \geq 3.75)	Total number passing
Fall'15	22	3	35
Spring'16	-	-	27
Fall'16	-	-	-

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.

4.3.4 Progress Semester by Semester

A student's performance in a running semester decides which courses he/she can take on the upcoming ones. Most of the core courses require some pre-requisites to be completed before enrollment. A student is not allowed to take a course unless he/she completes all pre-requisites.

A student is normally required to earn at least 15 credits (out of 17.5 to 20 credits) in a semester. At the end of each semester, the students will be classified into one of the following three categories:

Category 1:

"Students who have passed all the courses prescribed for the semester and have no backlog of courses"

A student of Category 1 is eligible for registration in all courses prescribed for the next or following semesters.

Category 2:

"Students who have earned at least 15 credits in a semester but do not belong to Category 1"

These students are advised to take at least one course less in the following semester than those offered for students of Category 1, subject to the condition that, they will register for such backlog courses as prescribed by the respective advisor.

Category 3:

"Students, who have failed to earn 15 credits in a semester"

Students of this category are advised to take at least two courses less in the following semester than those offered for students of Category 1 subject to the registration for a minimum of 15 credits and maximum 24 credit hours. However, they are required to register for such backlog courses as prescribed by the advisor.

Any course in any semester has to be repeated for the purpose of grade improvement. F grades are not counted for GPA calculation but are mentioned on the grade sheet and transcript. A student can improve the grade of a course by either participating in a repeat exam for that course (under special conditions) or by retaking the course as ‘backlog’ on any of the subsequent semesters.

4.3.5 Performance Evaluation

The performance of a student is evaluated in terms of semester GPA and cumulative grade point average (CGPA), which is the grade point average for the semesters under consideration. A candidate is awarded a degree with honors if his/her CGPA is 3.75 or above. A student is considered to be making normal progress towards a degree if his/her CGPA for all work attempted is 2.25 or better and is in good standing with the university.

Students who fail to maintain this minimum rate of progress fail to be in good standing. Such circumstances may prevail under one or more of the following conditions:

- Semester GPA falls below 2.25.
- Cumulative GPA falls below 2.25.

Earned credits fall below 15 times the number of semesters studied.

4.3.6 Repeat Examination Rules

A student is allowed to appear at the Repeat Examination in case s/he fails in three theory courses or less but not exceeding 10 credit hours. The results of Repeat Examinations are published within three weeks from the date of publication of the results of the Semester Final Examination concerned. The department arranges such Repeat Examinations. Candidates willing to appear at such Repeat Examinations must apply to the Heads of department through the respective advisors stating their willingness to appear at the said examination. Repeat examinations are held before next semester would start.

Repeat Examinations on theory courses are held on 50 percent of marks for each course and the marks for Class Assessment and Mid Semester Examination are carried. There are no repeat examinations for sessional courses. The maximum grade to be obtained by a student in a repeat examination is B (equivalent to 60%).

4.3.7 Provisions for Improvement of Grades

Category A

The Provision for Improvement of grades applies to those only who obtained a grade C or lower in any course. Such candidates are allowed to improve their grades by surrendering the earlier grade obtained by him/her.

For grade improvement purpose, a student is allowed to repeat a maximum of four courses.

For availing such provision of grade improvement, a candidate needs apply to the Controller of Examinations through the Head of the Department. A student can apply for such provision any time during his/her study period in the university but not beyond two weeks after the publication of his/her final semester results.

Category B

A Cumulative Grade Point Average (CGPA) of minimum 2.25 is required for graduation. A candidate whose CGPA is below 2.25 has to increase his/her CGPA to the minimum requirement within two consecutive semesters failing which s/he is placed under academic probation.

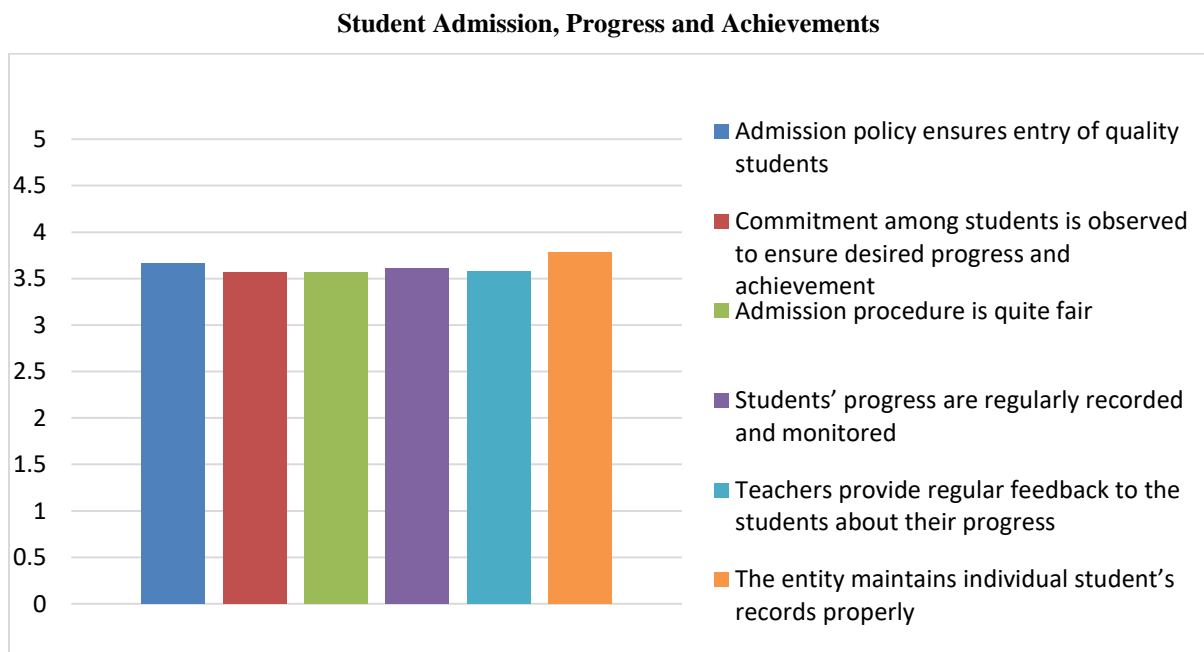


Figure 4-7. Grand Mean of Responses for the Survey Questions

Figure 4-7 illustrates the average of responses of stakeholders on different questions about student admission and progress. All stakeholders seem to be satisfied on the current system of maintaining student records. Students responded positively about the feedback they get from teachers on their progress and performance whether the alumni remained neutral. Although there is still room for improvement on student monitoring. The department of CSE is taking initiatives to find an optimal threshold to limit student intake each semester and improve the quality.

CHAPTER V

PHYSICAL FACILITIES

Physical facilities give educational institutions their complete shape and a good environment to learn and teach which can have a profound impact on both student's and faculty's outcomes. Physical facilities can affect a student's health, behavior, engagement, learning, and growth in achievement as well as the commitment and effort of the faculties and staff. Physical facilities in any educational institution include building, classroom, laboratory, library, cafeteria, leisure room, to other infrastructural facilities that can motivate the students towards learning. The department of CSE of the University of Asia Pacific has excellent physical facilities to provide the students the best learning environment. It has self-supporting classrooms, laboratories and research facilities along with other facilities to ensure quality education. The details of the different physical facilities of the department of CSE are provided in the rest of this chapter.

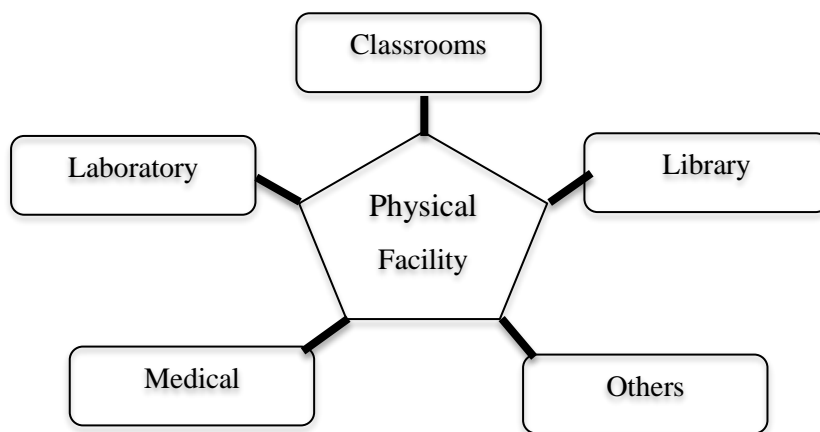


Figure 5-1. Layout of Physical Facilities

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 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.

5.1 Classroom

In the Department of Computer Science and Engineering (CSE), 6 spacious classrooms are available, equipped with computers, air conditioners and projectors. Portable sound systems are adjusted on demand to provide the support of audiovisual aid. On an average 35-40 students can be accommodated in each of these rooms. A central seminar room is made available for holding seminars and workshops for CSE students. Different types of workshops and conferences are also arranged here for the faculties.



Figure 5-2. Classroom 1 (Room # 702)



Figure 5-3. Classroom 2 (Room # 713)



Figure 5-4. Classroom 3 (Room # 714)

Table 5-1. Number of different rooms and their seating arrangement of Dept. of CSE

Sl. No	Types of Rooms	Seating Capacity	No of rooms	Area (sq. ft.)
1	Lecture Rooms	70/Room	2	5020
		50/Room	2	
		45/Room	2	
		40/Room	2	
2	Faculty Rooms	1/Room	12	2800
		3/Room	1	
		10/Room (Partitioned)	1	
3	Guest Faculty Room	3/Room	1	120
4	Seminar Rooms	30	1	350
5	Server Room		1	50
6	Student Counseling Room		1	90
7	Office Room	2	1	100

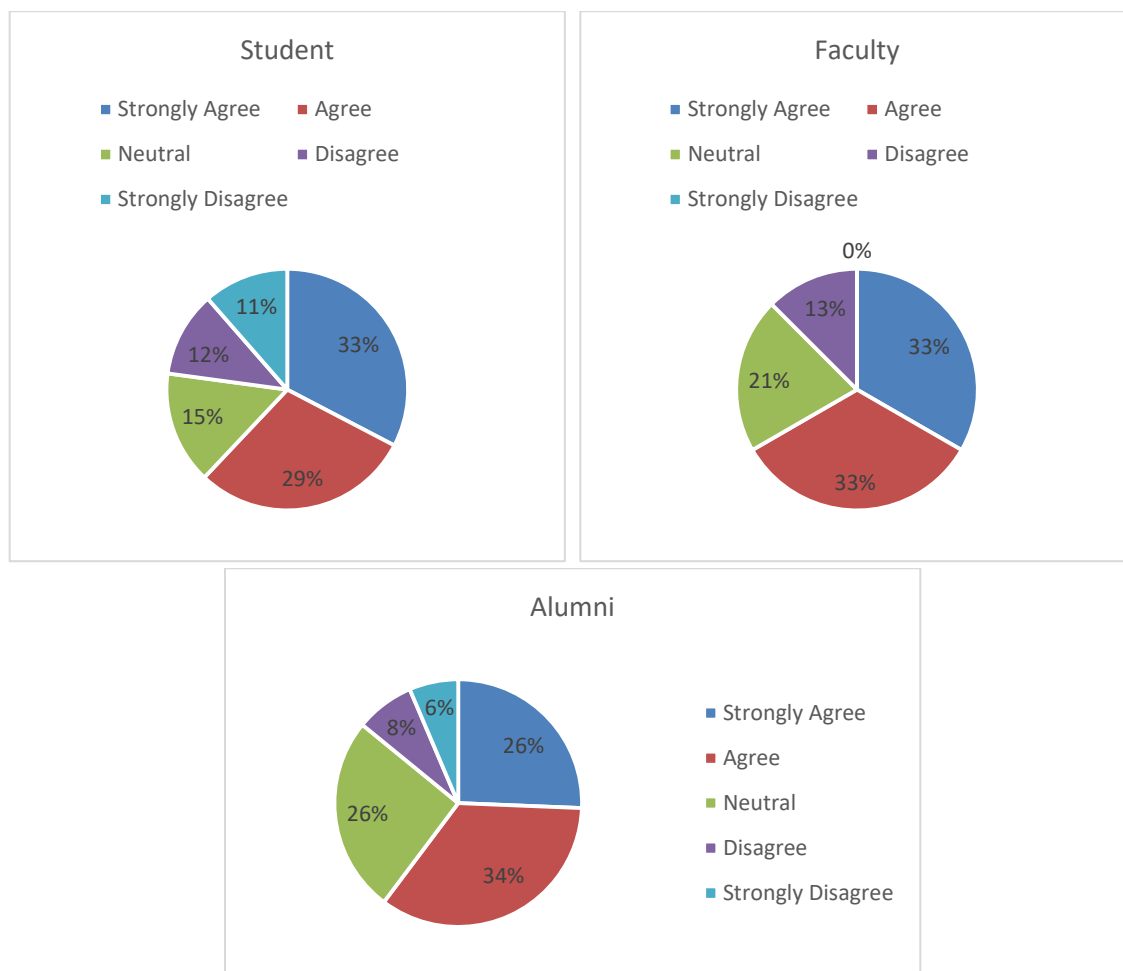


Figure 5-5. Responses of stakeholders for the question "Classroom facilities are suitable for ensuring effective learning"

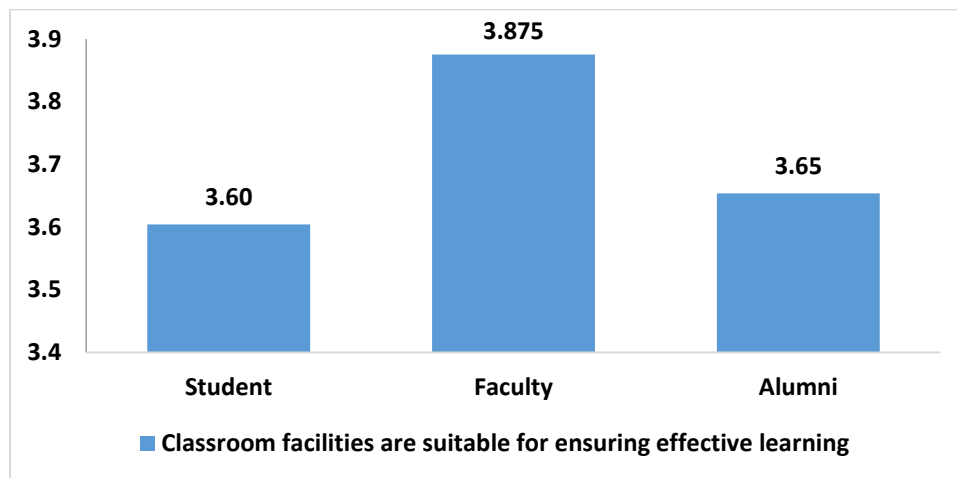


Figure 5-6. Responses of stakeholders for the question “Classroom facilities are suitable for ensuring effective learning”

Figure 5.6 shows the stakeholder’s response for the classroom facilities. The average faculty response for the classroom facilities is 3.87 having 33.33% on the agreed side. The students gave an average score of 3.6 where more than 62% students agreed on the availability of suitable classroom facilities. Alumni weighted response is 3.65 having around 86% positive feedback about classroom facilities.

5.2 Library

There is a central library at the 9th floor of the main building for all of the students. The air-conditioned library can accommodate around 152 readers at a time. The library contains around 19640 books including textbooks, and reference books which are being regularly updated. For the convenience of the students, the library gives an access to 32 online journals. The Daily newspapers i.e. Daily Star, Independent, Prothom-Alo, Ittefaq and Daily Observer are placed there. The library is supervised by 7 staff. Updated library management soft wares are available for the library staff for their effective functioning. The library is kept open 7 days a week for the convenience of the students and faculties.

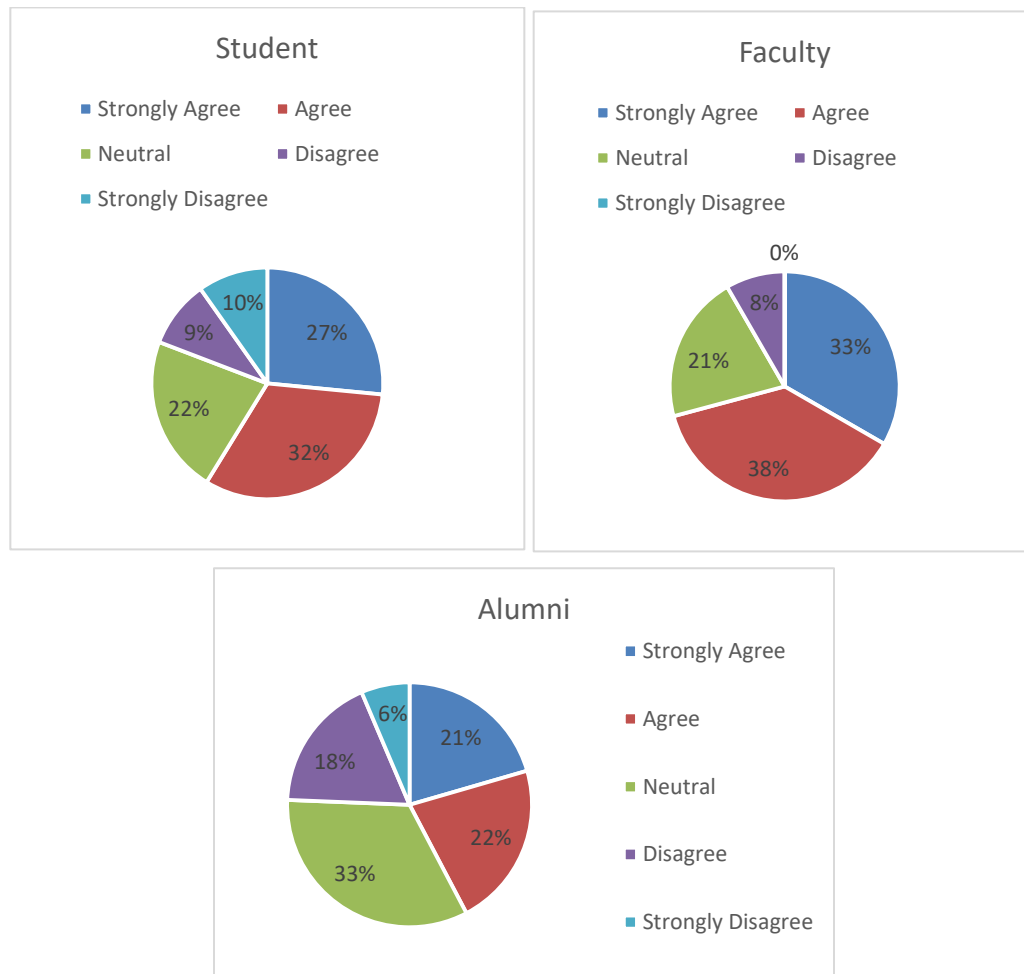


Figure 5-7. Responses of stakeholders for the question “The library has adequate up-to-date reading and reference materials to meet the academic & research needs”

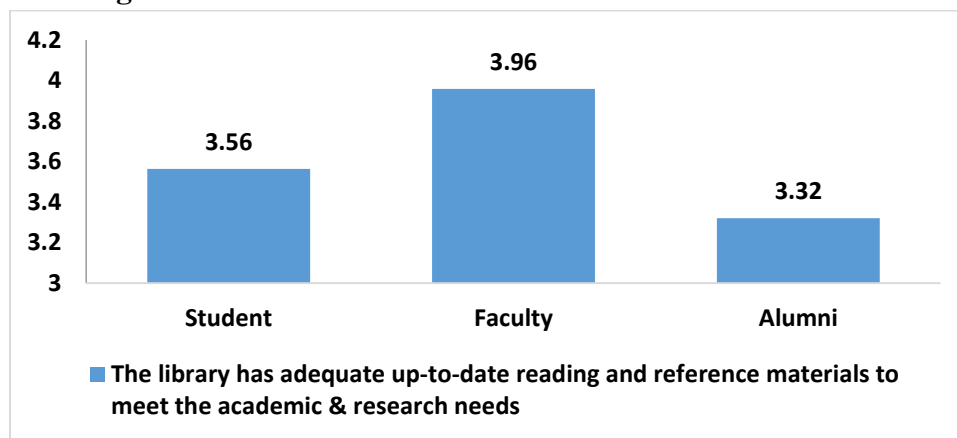


Figure 5-8. Responses of stakeholders for the question “The library has adequate up-to-date reading and reference materials to meet the academic & research needs”

Figure 5.8 shows the stakeholder's response for the Library facilities. Around 59% students agreed to have an up to date reading and reference materials to meet their academic and research needs whereas around 71% faculties are satisfied with the library materials. To improve the student's response initiatives have been taken to enrich to library with new sets of books. Alumni weighted response is 3.32 having around 76% positive feedbacks about library facilities.

5.3 Laboratory and Field laboratories

The department of CSE has 6 laboratories all of which are assigned to different purposes. There are lab attendants for each lab and lab assistants to take care of lab attendants. Minimum qualification of the lab assistants is diploma and that of lab attendants is either H. S. C or Degree holders. Also a faculty member is associated with each lab to monitor the overall work environment of the labs.

5.3.1 Programming Lab I

This Lab is fully air-conditioned with total area of 550 square feet equipped with Thirty five (35) PCs consist of one server pc and others for students use, connected to the intranet and internet through high a speed switch, this Lab facilitates uninterrupted use of computers. For departmental students and non-departmental students especially Electrical and Electronic Engineering students, this lab is used for typical programming classes on C programming language. Apart from the classes on C as mentioned above, this lab is for classes on application software such as MS Office, Photoshop and Illustrator etc. for Civil Engineering/Architecture/ Law & Human Rights students. Students can use internet from the Lab as well this lab is for the Departmental students to get hands-on experience on the different hardware components of a computer.

5.3.2 Programming Lab II-cum-VLSI Lab

This lab has an area of 550 square feet. Thirty four (34) PCs, in this lab, arranged in networked environment facilitated by full air-condition, uninterrupted internet connection have created a practical class room for programming languages like C++, Java, C#, VB.Net. C#.Net This lab is also used as VLSI (Very Large Scale Integration) lab with cutting edge software like Vhdl, Microwind, PSpice, OrCAD to name but a few.



Figure 5-9. Programming Lab I



Figure 5-10. Programming Lab II

5.3.3 Programming Lab III

This lab has an area of 550 sft. Fully air-conditioned with Thirty four (34) HP brand PCs organized in networked environment, this lab is an ideal class room for practically dealing with Oracle9i/10g in back end, Oracle Developer 2000/6i/9i in front end, MySQL, PHP in client server environment, MS Sql Server, MS Visual Studio and .Net. High speed internet facility is also available in the lab. Network programming with java programming language and operating system related scripting based programming in Linux platform are conducted in this lab.

5.3.4 Programming Lab IV

This lab has an area of 550 sft. Fully air-conditioned with Thirty three (33) HP brand PCs organized in networked environment, this lab is an ideal class room for practically dealing with Matlab, Python, Circuit Maker, Webserver, PHP, HTML, and Sql Server . High speed internet facility is also available in the lab. Network programming with java programming language and operating system related scripting-based programming in Linux platform are conducted in this lab.



Figure 5-11. Programming Lab III



Figure 5-12. Programming Lab IV

5.3.5 Programming Lab V

This lab has an area of 550 sft. Fully air-conditioned with Thirty-five (35) HP All-In-One PCs organized in networked environment, this lab is an ideal class room for practically dealing with Webserver, HTML and PHP editor, CodeBlocks, MS Office. High speed internet facility is also available in the lab. Network programming with java programming language and operating system related scripting-based programming in Linux platform are conducted in this lab.



Figure 5-13. Programming Lab V

Table 5-2. List and quantity of major equipment in Programming laboratories

Available Equipment	Lab1	Lab2	Lab3	Lab4	Lab5
Computer with LEDE Monitor, UPS	35	34	35	33	5
Computer all in one, UPS	0	0	0	0	30
Network Switch	3	3	3	3	3
Multimedia Projector	1	1	1	1	1

5.3.6 Digital Lab

This lab has an area of 432sft. The fully air-conditioned Digital Lab has a number of highly sophisticated modern equipment such as Trainer Boards, 8086 Microprocessor kits, Digital IC Tester, PCs (Pentium IV), Analog and Digital Communication Training Systems, PC Based Analog and Digital Motor Control Teaching Set, Transducers and Instrumentation Teaching Set, Digital Signal Processing Training kit, etc. Also it has a huge resource of digital and analog ICs and other electronic

components. In this lab, students can design and implement starting from small digital circuits to 8-bit microprocessor. Also, they can acquire the technical knowledge of 8086 microprocessor and its peripherals. Furthermore, students can easily interface any personal computer with analog world for adaptive control and automation. This lab has also full-fledged 5 equipment set-ups so that 5 groups of students can carry on any digital and interfacing experiment and project simultaneously.

5.3.7 Circuit Lab I & II

There is a rich air-conditioned circuit lab in CSE Department, which is equipped with modern tools. The purpose of this lab is to design various electrical and electronic circuits. Also this lab is used to study the behavioral characteristics of the different electrical and electronic projects. This lab has full-fledged 5 equipment set-ups so that 5 groups of students can carry on with any electronic and electrical experiment and project simultaneously. Each equipment set-up includes modern Oscilloscope, dc generator, signal generator, trainer board, high-configured PC. This lab also has sufficient amount of all necessary electrical and electronic components including ICs (Digital and Analog), resistors, capacitors, inductors, transformer, etc.

5.3.8 Project Lab

Project Lab has an area of 260 sft. It contains twenty-five (25) PCs with network and internet facilities. It is intended for final year students to carry out their project works. However, students are encouraged to use this lab to develop hardware/software projects.

5.3.9 Machine lab

The modern machine lab has an area of 425 sft having five experimental benches. Each bench can accommodate five students. The lab has three phase machines (induction, synchronous) and 1-phase machines and transformers. The lab is equipped with high grade and good accuracy class measuring instruments like Volt meters, Ammeters (Analog and Digital), Frequency meter, Wattmeter, Tachometer, and Magnetic Conductors etc. The students perform experiments with machines and the results are verified by the simulation software like SLIM, MATLAB, P-Spice.

5.3.10 Physics Lab

Physics Lab has an area of 609 sft. It contains Oscilloscope, Polarimeter, Malus Law Apparatus, Planck's Constant Apparatus, Newton's ring Apparatus, Acoustic Transducer, Sono Meter, Tuning Fork, Spectrometer and other equipment. It is intended students to carry out their experiments related to physics course

Figure 5.14 and 5.15 show the stakeholder's response for the laboratory facilities. The average faculty response for the laboratory facilities is 4.04 having 33.33% on strongly agreed and 45.83% on agreed side. The students gave an average score of 3.73 where more than 62% students agreed on the availability of suitable laboratory facilities. Alumni weighted response is 3.65 having around 88% positive feedback about laboratory facilities.

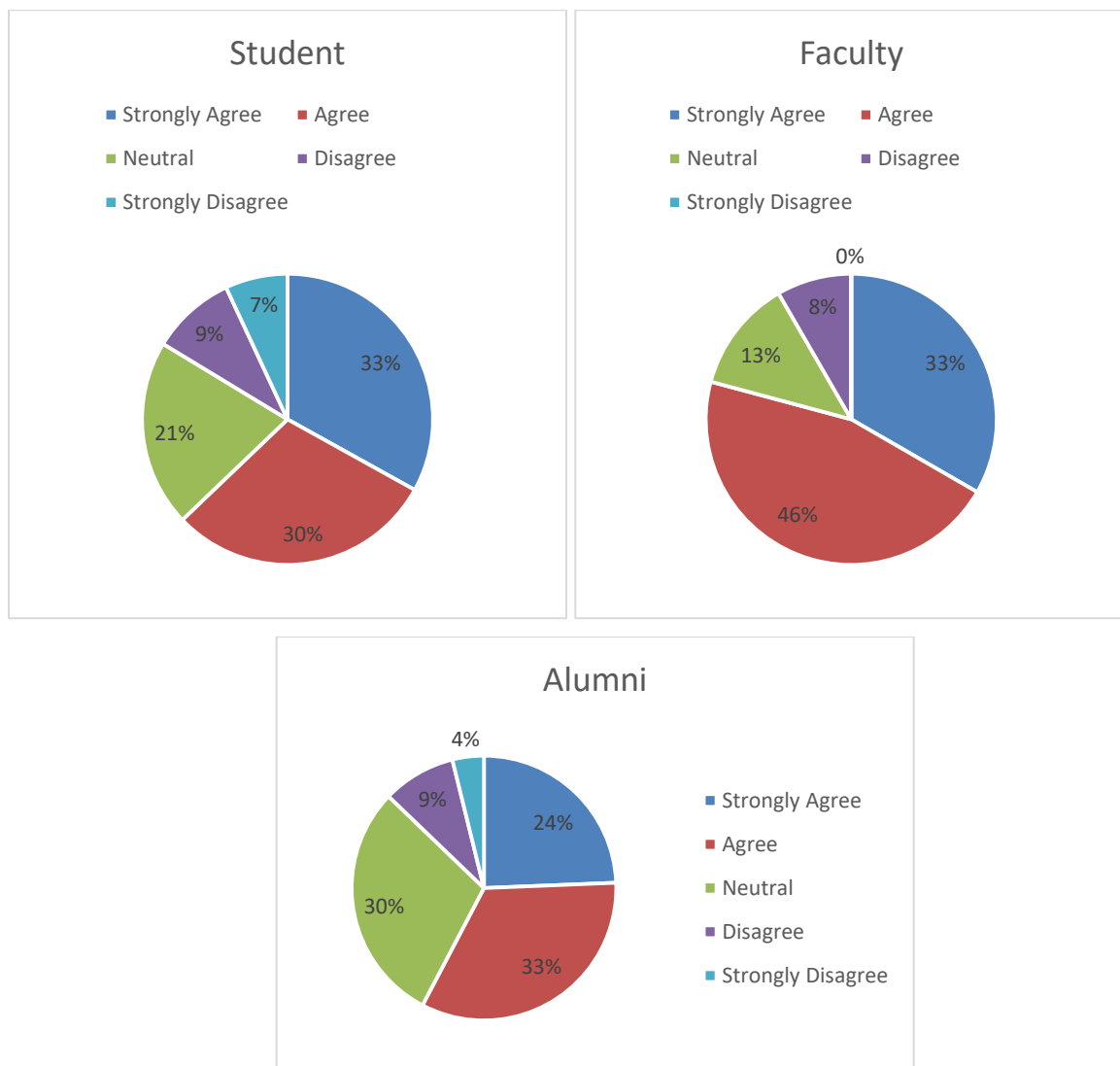


Figure 5-14. Responses of stakeholders for the question “Laboratory facilities are congenial for practical teaching-learning”

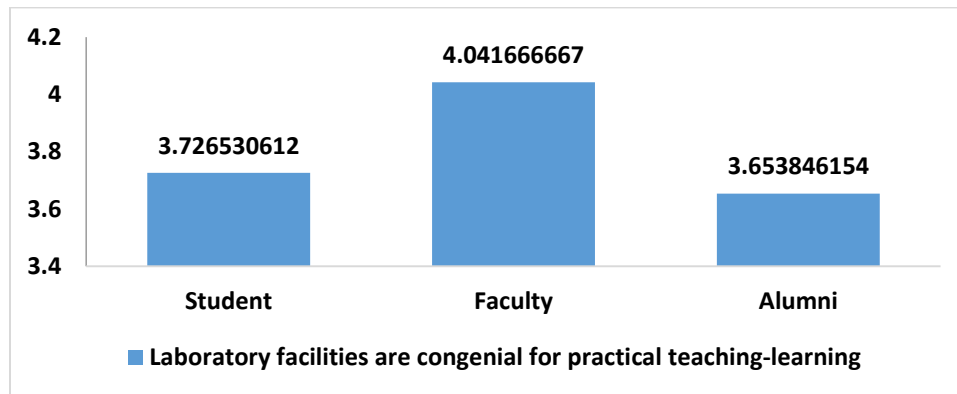


Figure 5-15. Responses of stakeholders for the question “Laboratory facilities are congenial for practical teaching-learning”

5.4 Medical Facilities

The department does not have a medical center of their own. However, for any medical emergency, all students and the faculty members have to go to the central medical facility where two certified doctors and updated apparatuses are available during the office hour and emergency medicine and first aid service is provided.



Figure 5-16. Medical center at UAP

Figure 5.17 and 5.18 show the stakeholder’s response for the medical facilities. The weighted alumni response is 3.12 whereas the response of the students is 3.55 which shows that the medical facilities are improving with time. Around 59% students agreed or strongly agreed on adequacy of indoor medical facilities. Faculty responded with a score of 3.71 having 50% agreed or strongly agreed on adequacy of indoor medical facilities.

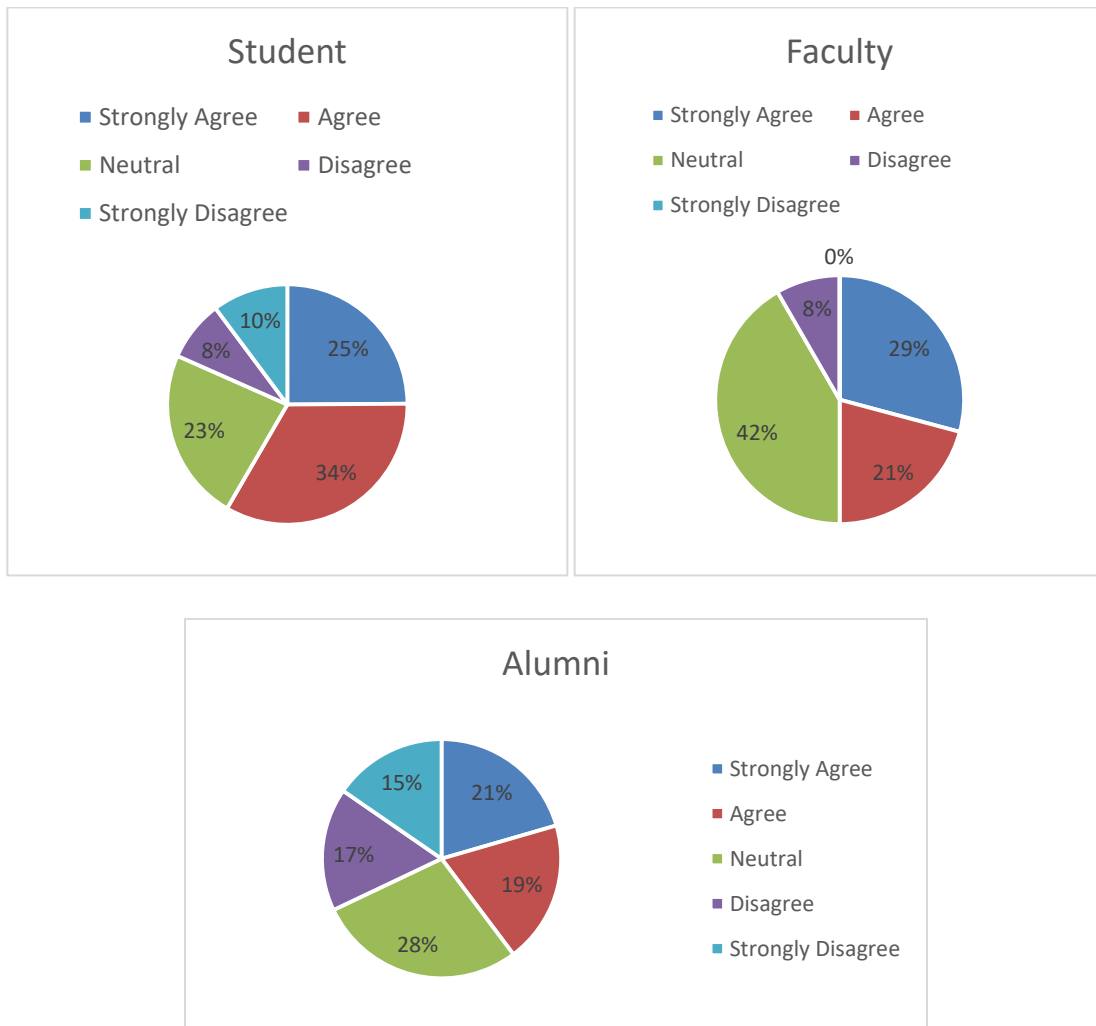


Figure 5-17. Responses of stakeholders for the question “Indoor and outdoor medical facilities are adequate”

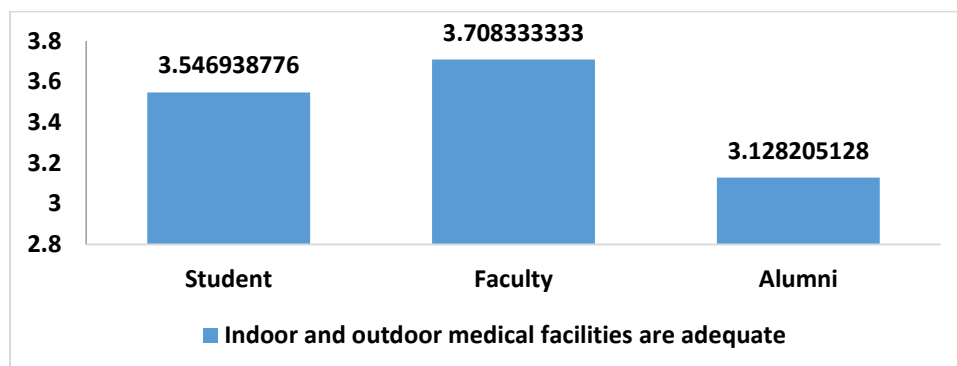


Figure 5-18. Responses of stakeholders for the question “Indoor and outdoor medical facilities are adequate”

5.5 Other Facilities

5.5.1 Internet Connectivity

Cutting edge computers with high speed internet connections are made available for the faculties and administrative staff. To maintain proper communication with inter and intra departments and offices of UAP, CSE has PABX system, each staff and faculty has access to this system of internal communication. For printing articles, required documents and question papers, faculties and staff have access to latest model of printers. A latest model of photocopy machine is set up for both faculties and staff.

Table 5-3. Response of stakeholders to questions related to standard 4-2

Aspect of Evaluation	Alumni	Students	Faculty	Grand Mean
Access to internet facilities with sufficient speed is available.	3.02564	3.2408163	3.375	3.213819

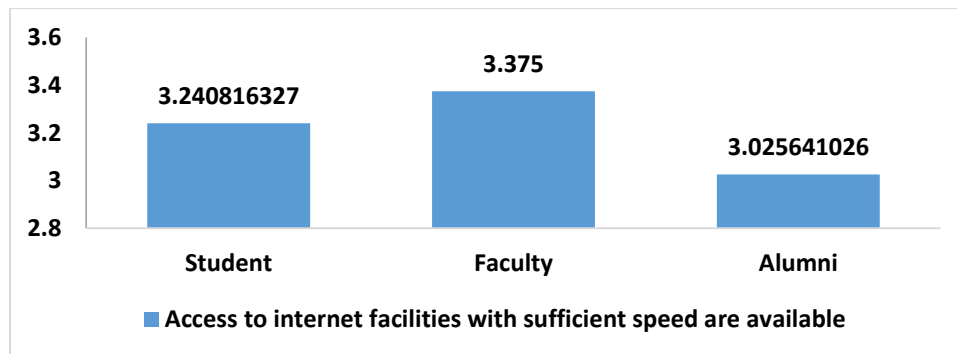


Figure 5-19. Responses of stakeholders for the question “Access to internet facilities with sufficient speed is available

Figure 5.19 shows the stakeholder’s response for the internet facilities. The average faculty response for the internet facilities is 3.375 having 17% on strongly agreed and 25% on agreed side. The students gave an average score of 3.24 where more than 50% students agreed on the availability of suitable internet facilities. Alumni weighted response is 3.03 which shows the improvement of internet facilities with time. Around 44% alumni agreed on having suitable internet facilities.

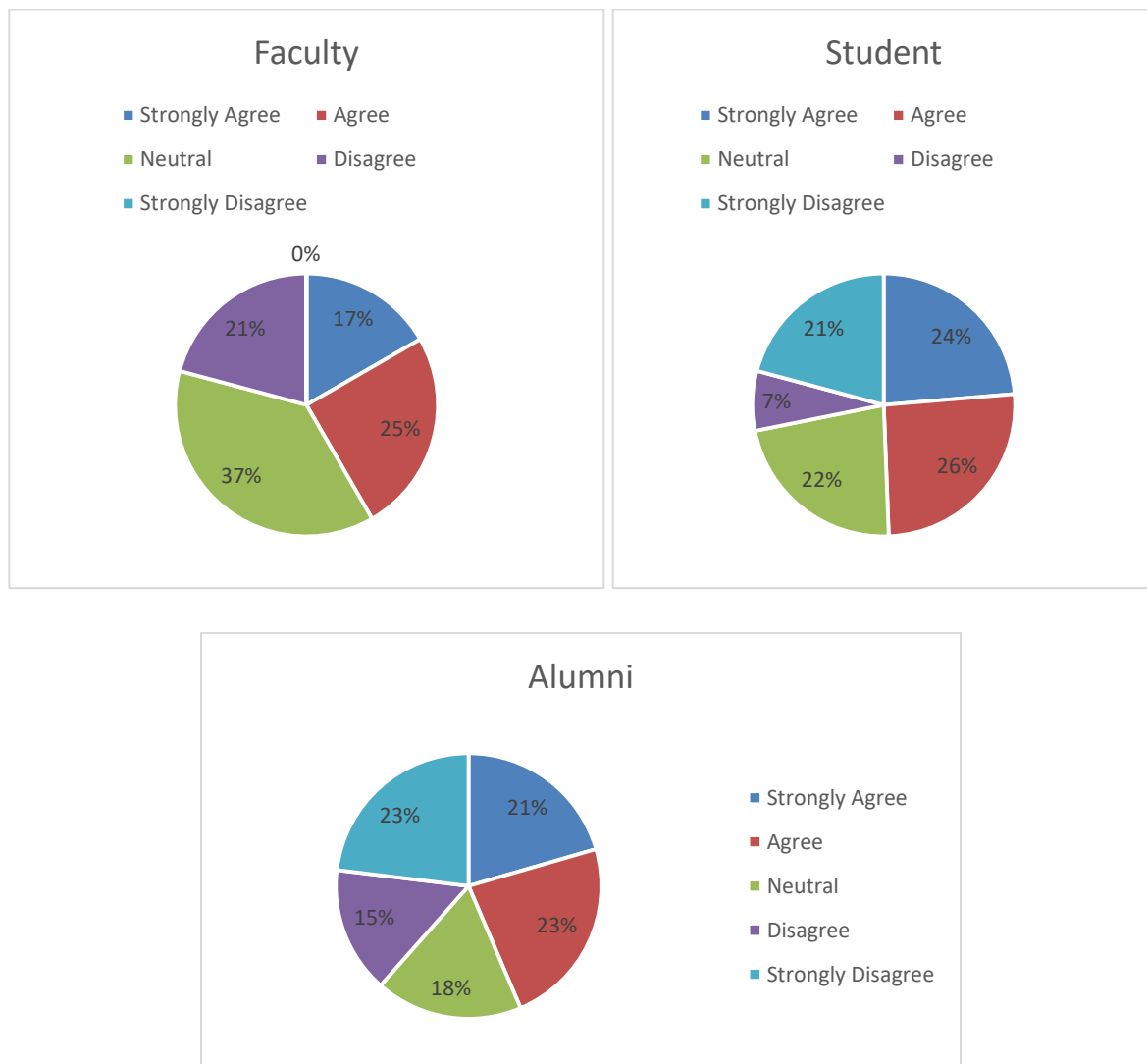


Figure 5-20. Responses of stakeholders for the question “Access to internet facilities with sufficient speed is available

5.5.2 Sports and Physical Exercise Facilities

An indoor sports center is located at the main building with provision of arranging games like table tennis, chess, carom etc. Sports ground is rented for arranging intra-department and inter departments outdoor sports like cricket, football etc. However, UAP has procured 3 acres of land in Rajuk Purbachal of Dhaka city where campus can provide its own sports facilities. A gymnasium with modern amenities has been proposed for accommodate physical exercises.

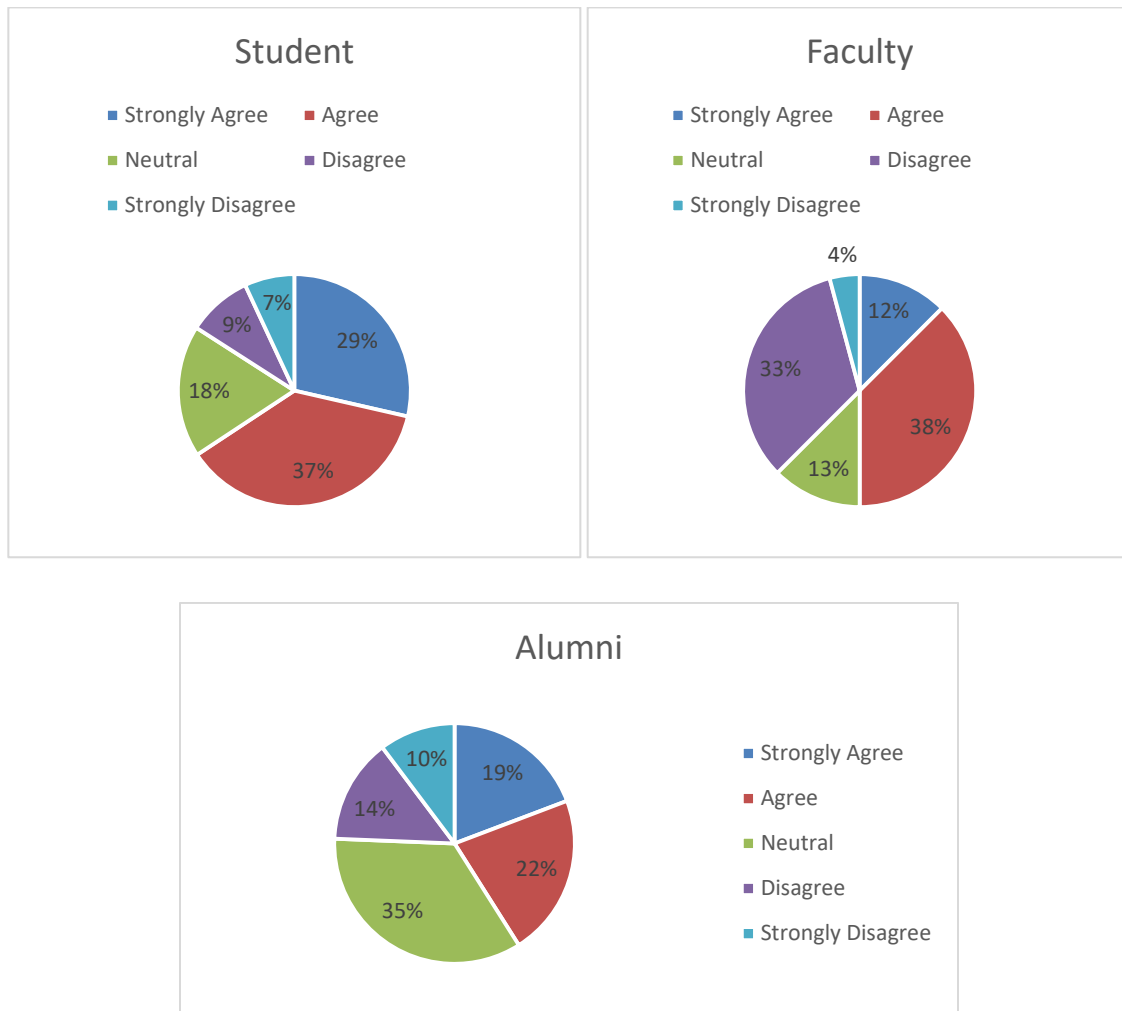


Figure 5-21. Responses of stakeholders for the question “There are adequate sports facilities (indoor and outdoor)”

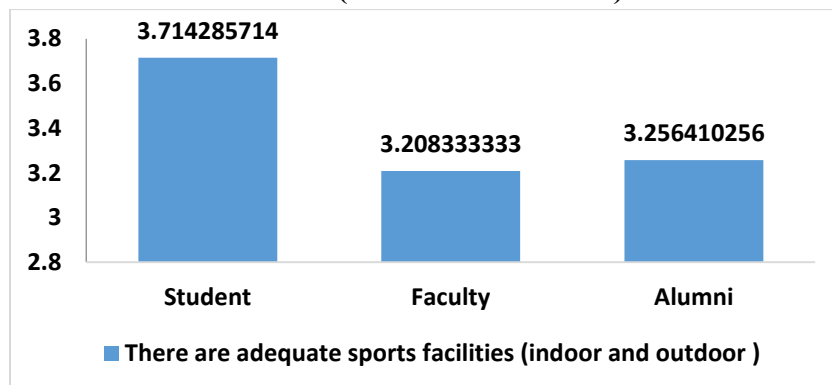


Figure 5-22. Responses of stakeholders for the question “There are adequate sports facilities (indoor and outdoor)”

Figures 5.21 and 5.22 illustrate the response of the stakeholders on indoor and outdoor sport facilities. Around 66% students, 50% faculties and 41% alumnus agreed on having adequate sport facilities.

5.5.3 Prayer Room

There is a central mosque in the main building where time is separated for male and female faculties, staffs and students. In future there will be partitioned separate rooms for both genders.

5.5.4 Cafeteria

University of Asia Pacific has a central cafeteria shared by the students and faculties of all the departments. The cafeteria remains open from 8 am to 5 pm and remains closed on weekends. The university authority continuously monitors the food quality and the environment of the cafeteria.

5.5.5 Auditorium

The University of Asia Pacific has a well-spaced auditorium with 6992 square feet area with modern sound systems and comfortable seating facilities which can accommodate around 300 students. Students and faculties can arrange different academic and cultural programs there.



Figure 5-23. Cafeteria



Figure 5-24. Auditorium under construction

5.5.6 Seminar Room

The department of CSE has its own seminar room of 350 square feet which can accommodate 30 people. The seminar room is used for departmental meetings, research activities and group discussion between faculties and students.

5.5.7 Washrooms

Each floor of the university has separate and adequate washrooms for both male and female students and faculties. All washrooms are regularly cleaned and maintained by the cleaners to ensure the good hygiene.

5.5.8 Research Facilities

The department of CSE encourages its students for various research activities. Students can use the facilities of programming labs and seminar room for the research activities. A club called “Research club” has been found specifically for the research purpose of faculties and students. Moreover students can seek financial help from the department regarding various research projects.

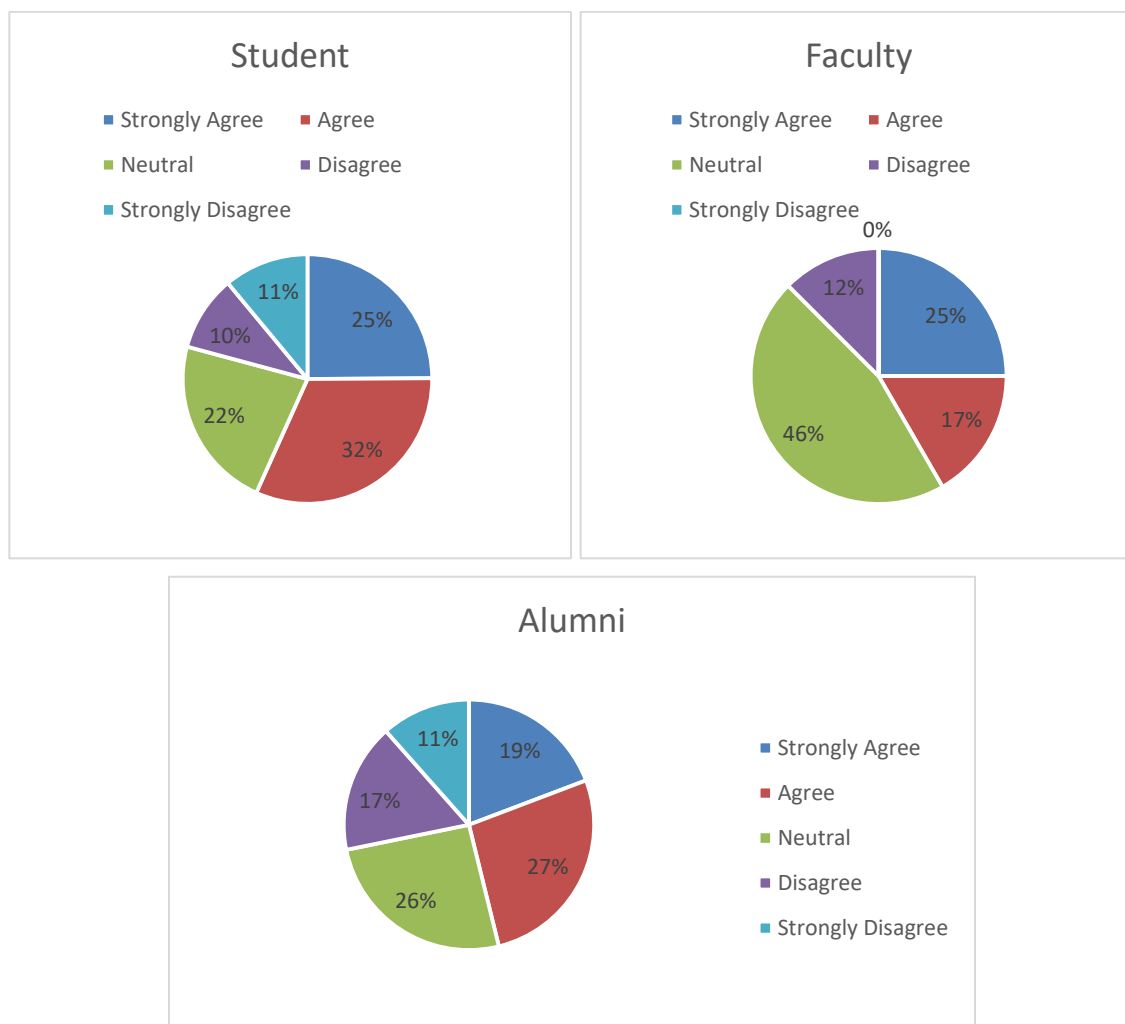


Figure 5-25. Responses of stakeholders for the question “Facilities for conducting research are adequate”

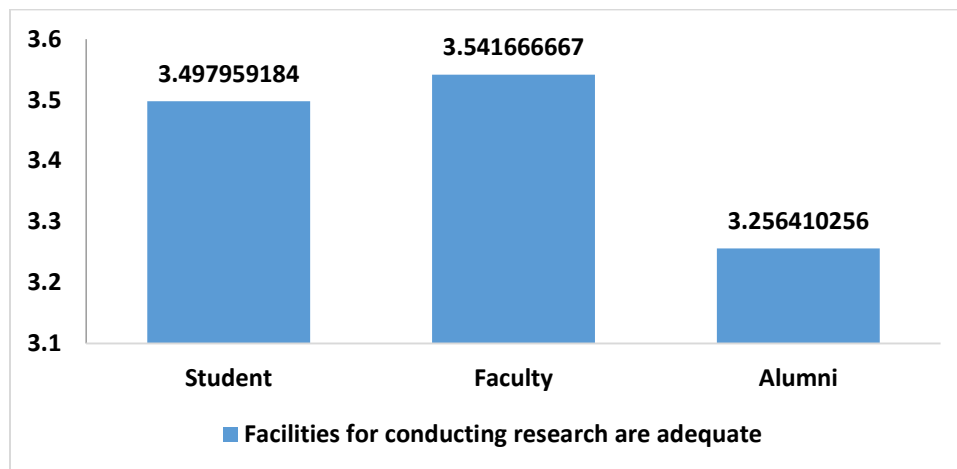


Figure 5-26. Responses of stakeholders for the question “Facilities for conducting research are adequate”

Figures 5.25 and 5.26 illustrate the response of the stakeholders on research facilities. Around 25% students and faculties and 20% alumnus strongly agreed on having adequate research facilities. Around 23% and 26% students and alumnus was neutral about research facilities respectively which shows that there are still chance of improvements. The department of CSE is taking initiatives to further encourage the students to be involved in various research activities.

Table 5-4. Response of stakeholders to questions related to standard 4-1

Aspect of Evaluation	Alumni	Students	Faculty	Grand Mean
Classroom facilities are suitable for ensuring effective learning	3.65384	3.604081	3.875	3.710976
Laboratory facilities are congenial for practical teaching-learning	3.65384	3.726530	4.0416667	3.807348
Facilities for conducting research are adequate	3.25641	3.497959	3.5416667	3.432012
The library has adequate up-to-date reading and reference materials to meet the academic & research needs	3.32051	3.563265	3.9583333	3.614037
Indoor and outdoor medical facilities are adequate	3.12820	3.546938	3.7083333	3.461159
There are adequate sports facilities (indoor and outdoor)	3.25641	3.714285	3.2083333	3.39301
Existing gymnasium facilities are good enough	2.85897	3.979591	3.5416667	3.460078
Entity has competent manpower to run the academic affairs	N/A	N/A	4.0833333	4.083333
Office equipment are adequate to support the students' need	N/A	N/A	3.4166667	3.416667

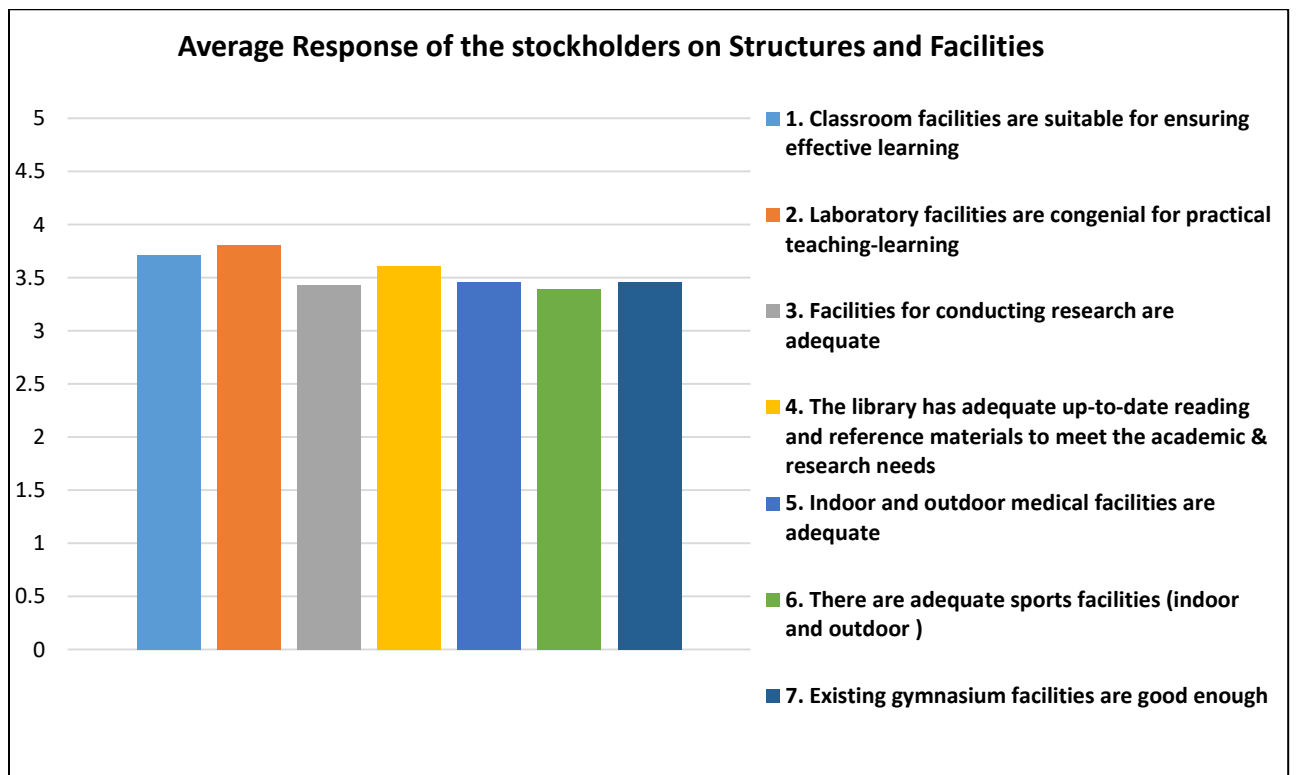


Figure 5-27. Average responses for the Questions on “Structures and Facilities”

Figure 5.27 illustrates the average response of the stakeholders on different questions about structure and facilities. From the graph we can say that faculties, students and alumnus seem to think there should be more improvement on the internet facilities. The department is taking necessary steps to improve the speed and range of the internet. All the stakeholders seem to be satisfied about the classroom, laboratory and library facilities. The responses about the research, sports, medical and gymnasium facilities show that there are still chance of improvements. The department of CSE is taking initiatives to further improve these facilities to provide a sound and best learning environment.

CHAPTER VI

TEACHING LEARNING AND ASSESSMENT

Standard 6.1: Teaching Learning Practice is interactive, motivating, promoting a sense of responsibility and commitment.

Standard 6.2: Teaching Learning Practice involves practical evidence, initiates critical thinking and inspires students to apply acquired knowledge in the real-life situations focusing on higher order of learning.

Teaching is the process, by which a teacher assists their students to acquire knowledge. There are numerous teaching methods depending on the requirement of a particular course and the teacher's innate style. Two of the most widely used teaching methods at Department of Computer Science and Engineering are the direct lecture method and the demonstration method. In the direct lecture method the teachers deliver regular lectures of 3 hours for 3.0 credits per week. The end goal of this method is to examine and evaluate how successfully the students have received the instructions and information delivered by their teachers on the subject matter. Demonstrating is mainly used in the sessional/laboratory courses which are normally of 1.5 credit hours (3 hours duration per week). One or in some case Two teachers are assigned for each sessional class with one lab assistant. 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 sessional courses, students are given hands-on-training on different open source software and programming languages that are used in different software/computer engineering studies.

A thesis or project spanning one year and accounting for 6 credits is an essential part of the curriculum. The program also includes a weekly session of active interaction between students and supervisors. The students are assigned to work in different areas of computer science related problems in accordance with their concentration such as Robotics, Image Processing, Machine Learning, Artificial Intelligence etc. They are instructed by their supervisor to follow the guideline of thesis/report writing manual and to prepare thesis/report accordingly. The students are required to present the report in front of Defense Board, comprising all faculty members.

6.1 Quality Staff

Faculty members are highly qualified in their academic credentials and experience in industry practices. The teachers are given training after their joining to improve teaching and learning assessment. It motivates the teachers to develop skill to carry out the responsibilities. Senior and experienced teachers share their experience with junior teachers to guide them for better performance. As part of interactive session in classroom, the students are encouraged to ask questions. The students are assigned different assignments by the teachers. This method helps the students to interact with the teachers about assignment related problem that they may face and the ways of solving them. Specified time is allotted by each and every faculty member to deal with any queries. A faculty advisor assumes the responsibility of student counseling to guide them about their duties, commitment, academic rules and regulations of the department.

Table 6-1. Response of stakeholders to questions related to Teaching Assessment

Aspect of Evaluation	Students	Faculty	Alumni
1. Teaching-learning is interactive and supportive (5.1)	3.808163265	3.833333333	3.602564103
2. Class size is optimum for interactive teaching learning (5.1)	3.8	3.708333333	3.769230769
3. Entity provides adequate opportunities for practical exercises to apply in real life situation. (5.2)	3.689795918	3.875	3.282051282
4. Modern devices are used to improve teaching-learning process(5.5)	3.718367347	3.708333333	3.58974359
5. Diverse methods are practiced to achieve learning objectives (5.5)	3.767346939	3.625	3.641025641
6. Lesson plans/course outlines are provided to the students in advance (5.6)	3.812244898	4.083333333	3.576923077

Table 6-2. Response of stakeholders to questions related to Learning Assessment

Aspect of Evaluation	Students	Faculty	Alumni
1. Assessment systems are duly communicated to students at the outset of the term/semester (5.7).	3.812245	3.958333333	3.782051282
2. Assessment procedures meet the objectives of the course (5.8)	3.930612	3.5	3.717948718
3. Both formative (quizzes, assignments, term papers, continuous assessments, presentations etc.) and summative assessment (final examination) strategies are followed (5.8).	3.710204	3.708333333	3.679487179
4. Diverse methods are used for assessment (5.9).	3.865306	3.791666667	3.538461538
5. The students are provided feedback immediately after assessment (5.10).	3.767347	3.782608696	3.320512821

Response of all the groups for the statement “Teaching learning is interactive and supportive” and “Entity provides adequate opportunities for practical exercises to apply in real life situation” was found above average. Survey showed that, students almost agree that teachers remain available during the specified office hours and after class for consultations while all groups agree that class size is optimum. Students responded that the standard of using diverse teaching methods and inspiring

students for own learning is below average although other groups responded to this as above average condition. The teachers' response was found as above average for all of the questions.

6.2 Use of Lesson Plan

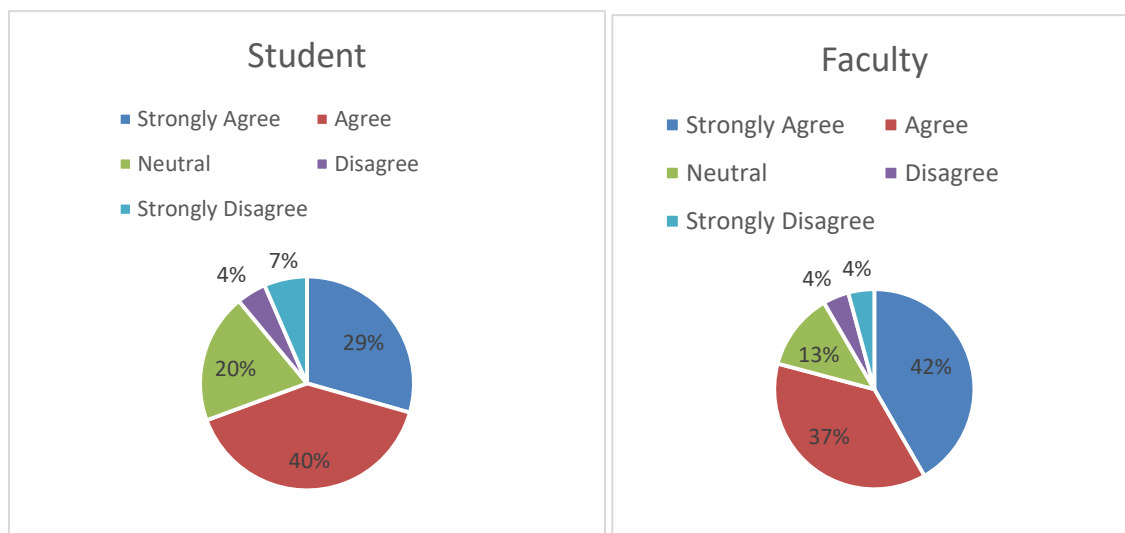
Standard 6.3: *Use of lesson plans should be formalized in teaching learning practice with proper documentation and access*

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. In some cases, daily lesson plan is developed by a teacher to guide class learning. Details normally vary depending on the preference of the teacher, subject being covered, and the needs of the students.

There is no a mandatory template requirement by the department regarding the lesson plan. As a result, lesson plans are formalized in teacher-level, in accordance within the template. The access of the documents is also frequent among teachers in most cases. The department has a structured policy to keep these for further use.

Table 6-3. Response of stakeholders to questions related to Use of Lesson Plan

Item	Students	Faculty	Alumni
Lesson plans/course outlines are provided to the students in advance (5.6)	3.808163	3.576923	3.576923



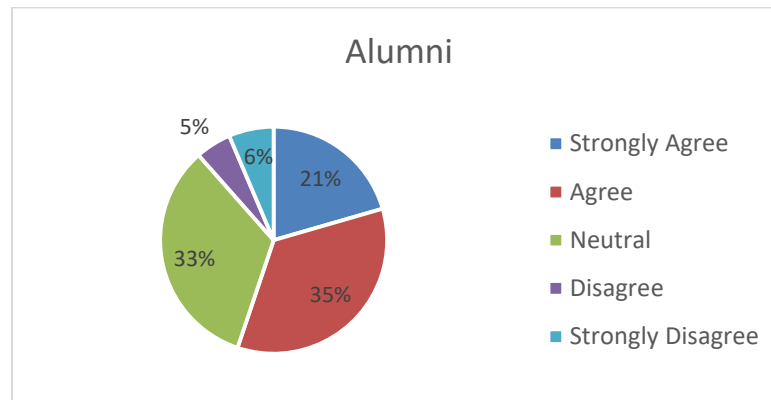


Figure 6-1. Responses of stakeholders for the question “Lesson plans/course outlines are provided to the students in advance (5.6)”

Response for the statement “Lesson plans/course outlines are provided in advance to the students” was found close to very good from current students while good from alumni and faculty members. So, it can be stated that this practice is increasing with time.

6.3 Technology Integration

Standard 6.4: 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

The department provides facilities to the students for effective academic preparation with the integration of technology. The facilities include multimedia projectors and personal computer for teachers, computer lab and library computers for all students. All computers are available with internet facilities with Wi-Fi network as well. The presentation works of different courses also require information from various online sources.

All teachers have the practice of using power point presentation to teach efficiently in the classroom so that students get scope to learn more realistically with the actual figures, graphs, image and videos. In some courses there is an option of online submission (such as, in courses CSE-102 and CSE-104) of assignments via Google classroom.

Students are taught the use of different software and programming languages used in software/industry projects like C, C++, PHP, JAVA, Python and MATLAB. 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 journals based on their thesis work.

Table 6-4. Response of stakeholders to questions related to Technology Integration

Item	Student	Faculty	Alumni
Modern devices are used to improve teaching-learning process (5.5)	3.767347	3.589744	3.589744

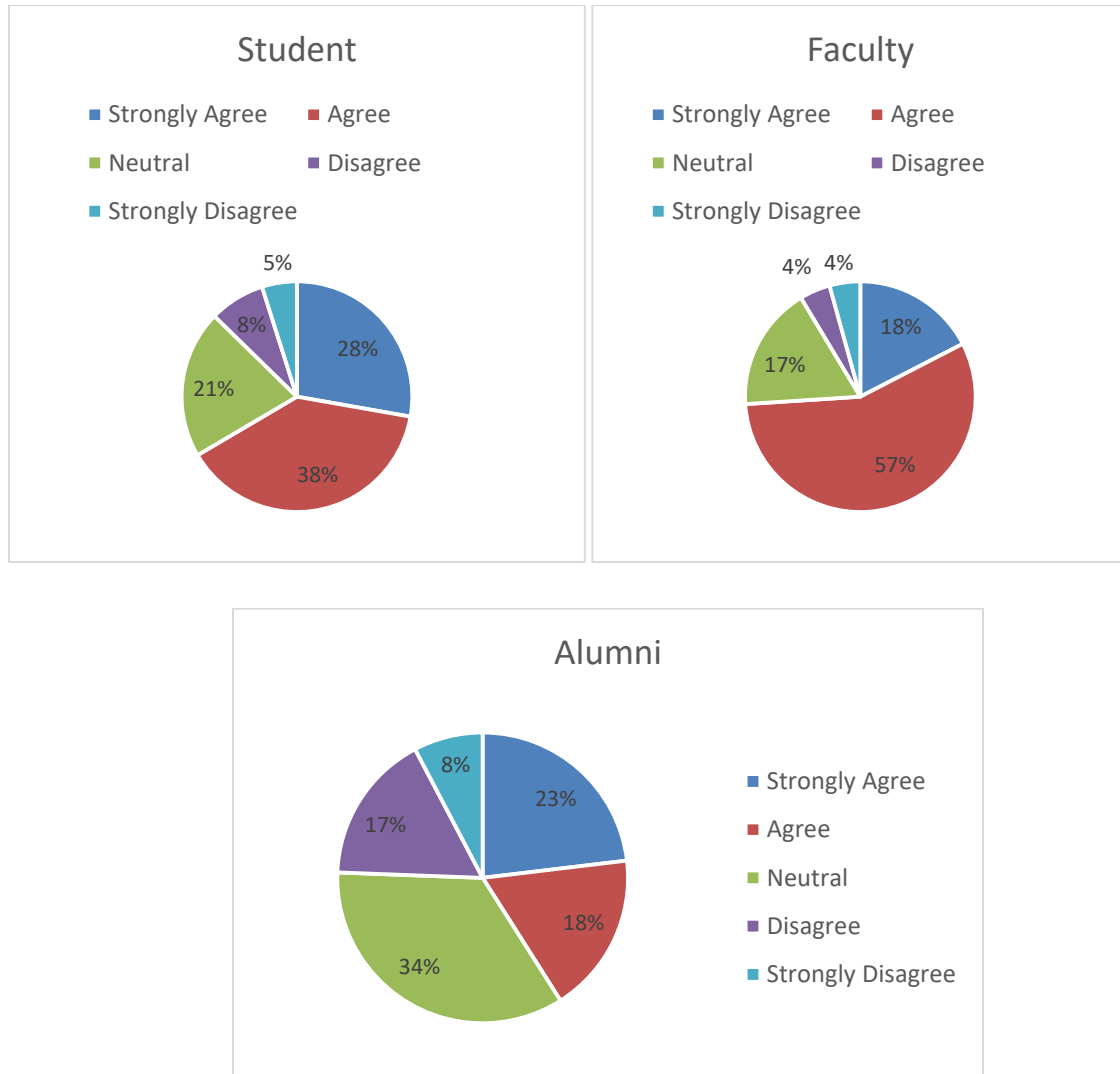


Figure 6-2. Responses of stakeholders for the question “Modern devices are used to improve teaching-learning process (5.5)”

Response of all the groups for the statement “Modern devices are used to improve teaching-learning process” was found above average.

6.4 Skill Development Mechanism

Standard 6.5: The teaching learning methods and opportunities must ensure that the identified skills are transferred to students

Standard 6.6: Teaching learning practice provides enough scope to integrate co-curricular and extra-curricular activities for intended skill development.

The teaching practice is focused on technical skill development along with their communication skill, oral and writing skill, management skill and networking skill. Objectively designed curriculum for all courses ensures quality technical skill. Though there is a lack of hands-on training in the program but the students are taught modeling software and other software for relevant design and analysis (in courses CSE-305, CSE-405, CSE-437). The curriculum is updated regularly based on the opinions of alumni, professionals, employers and other technical bodies.

Students have to communicate with class teachers and advisors verbally both within and outside of the classroom. They have to present their work and/or their assignments (such as, in Courses CSE-102, CSE-105, and CSE-438 etc.) 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 along with the thesis report. They often write scientific reports with their respective supervisors. Most of the assignments require extensive reading from different Sources from where they have to summarize the required findings. Thus, they can improve their writing skill. Different group activities (such as, in Courses CSE-102, CSE-300, CSE-438 etc.) helps to develop students' management skill. Group works such as surveying, group presentation etc. are part of the curriculum. The department also provides scopes to students to arrange co-curricular and extra-curricular activities as well. Co-curricular activities include field trips (such as, Bandarban and Cox's Bazar Tour of 33rd batch, Annual Picnic arranged by 33rd and 34th batch) etc. There are also extra-curricular activities like annual Sports and games tournament, festival (Software Expo and Career Fair 2017). These activities can develop the management skill among students.

6.5 Assessment of student Performance

Standard 6.7: Students are well informed about the criteria, processes, techniques. Tools and metric will be used to assess performance.

Standard 6.8: In line with teaching learning student performance assessment approach must is focused on higher learning.

Standard 6.9: Assessment procedure should be comprised of a set of multiple activities to measure attainment of learning outcomes and skills

The performance of a student is assessed by the university based on some set rules. In summary, the total mark of assessment of theory courses is divided into attendance (10%), continuous assessment (class performance, class test, assignment, presentation) (20%) midterm examination (30%) and final examination (70%). Students are informed at the semester beginning about this contribution. Assessment of sessional courses has been practiced with almost similar divisions and additional viva test and lab final test. The assessment of thesis is based on quality of mark, report and presentation. This assessment is done by the supervisor and members of defense board.

The Grading System

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

Table 6-5. Grading System.

Numerical Grade	Letter Grade	Grade
80% or above	A+ (Plus)	4.00
75% to less than 80%	A (A regular)	3.75
70% to less than 80%	A- (A minus)	3.50
65% to less than 70%	B+ (B plus)	3.25
60 % to less than 65%	B (B regular)	3.00
55% to less than 60%	B- (B minus)	2.75
50% to less than 55%	C+ (plus)	2.50
45% to less than 50%	C (regular)	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00
Continuation (for project &thesis/design)	S	----

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. Midterm examination holds 30% of the total weight factor. The remainder of the marks will be allotted to TERM FINAL examination which will be conducted centrally by the university. There will be internal and external examiners for each course in the term Final Examination of 3/2 hour duration (3/2 Credit hours).

The distribution of marks for given course will be as follows:

(i)	Class Participation	10%
(ii)	Homework, Assignments and quizzes	20%
(iii)	Mid Term Examinations	30%
(iv)	Final Examination (3/2 hours)	50%
Total		100%

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

Attendance	Marks
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 60%	0

Standard 6.10: Assessment procedure must be designed to test abilities and skills of student for integration and application of knowledge and analytical approaches

Different analysis and design problems along with theoretical questions are there in the final examination question. The open-ended assignments are given in some courses (CSE-300) to assess individual student which also develop students' problem solving and Software Development capability. Students Work/study on specific topic for preparation that develops their own learning capability. For the thesis study, each student works in detail individually but with the assigned group with respective supervisor on a unique and unsolved problem. So, the assessment is directly 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 the program.

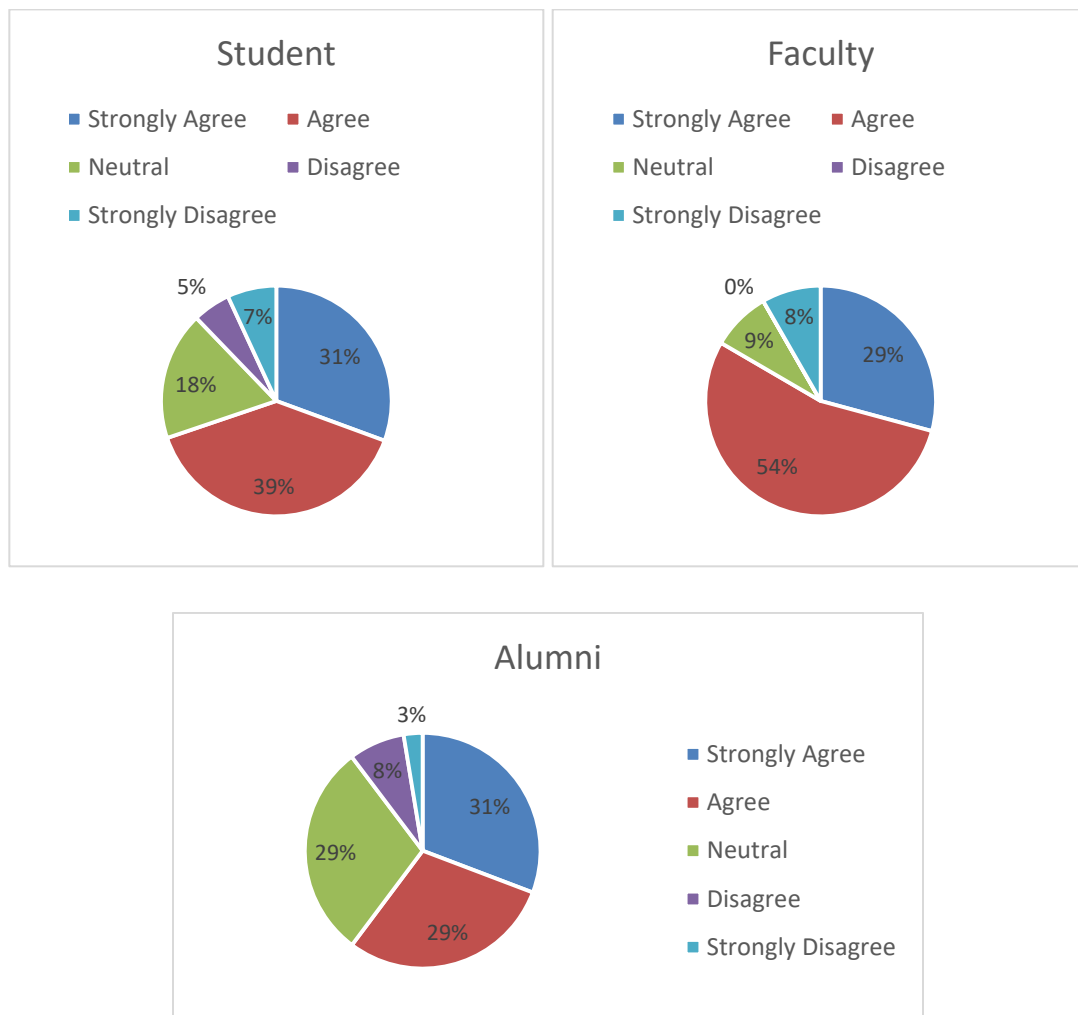


Figure 6-3. Responses of stakeholders for the question “Assessment systems are duly communicated to students at the outset of the term/semester (5.7)”

Analysis of Learning Assessment:

Survey showed that almost all groups agree that assessment systems are clearly communicated to students on the commencement of the term/semester. Student and alumni responded as above average condition that assessment system meets course objective. For the statements “Diverse methods and tools are used appropriately to assess the learning outcomes and competencies” and “The students are provided feedback on each assessment before the next one”, students and alumni responded as average condition. The responses for the statements “Students’ learning assessment procedures are maintained fairly” and “The question of examinations reflects the content of the course” were close to good condition. All groups agreed that both formative and summative assessment strategies were followed.

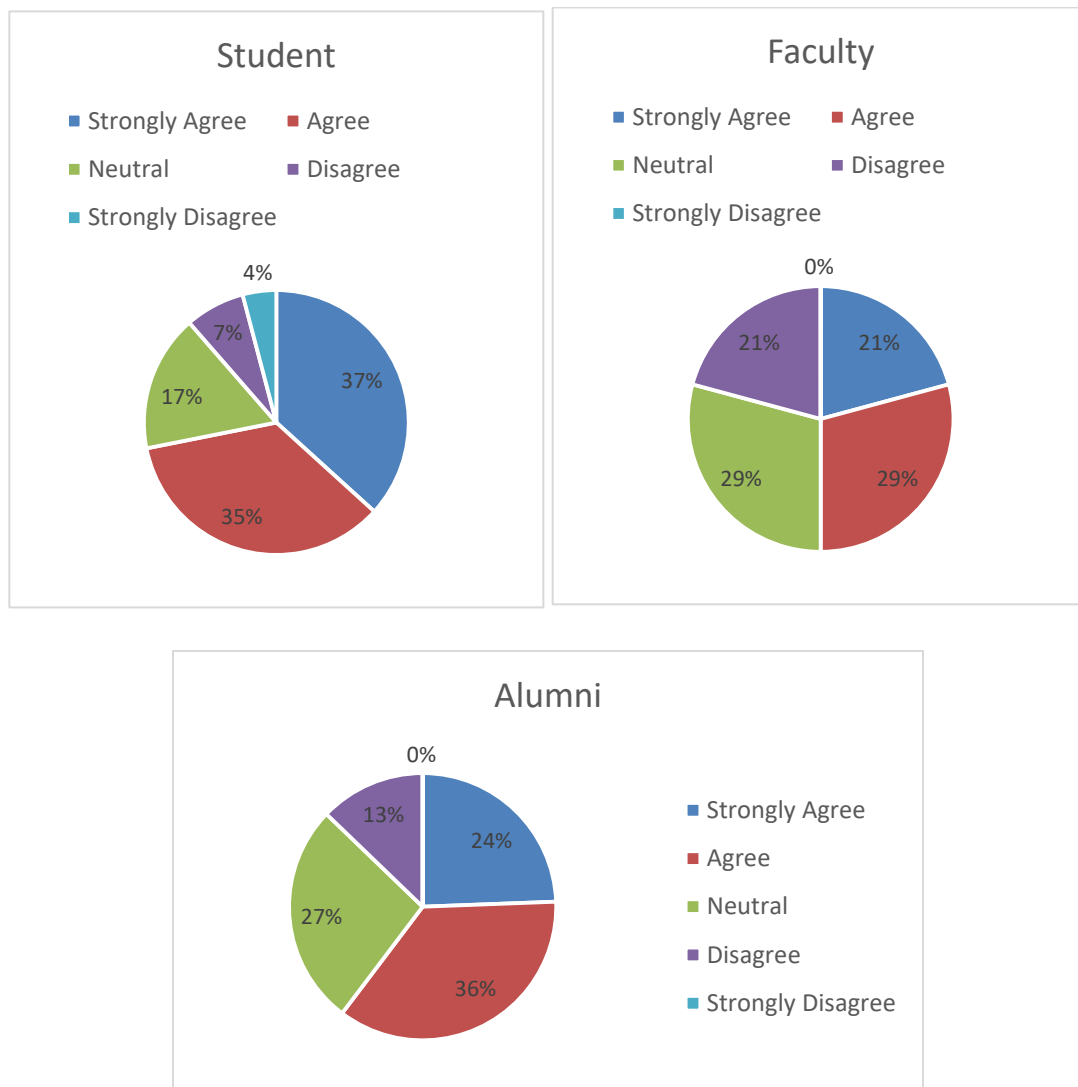


Figure 6-4. Responses of stakeholders for the question “Assessment procedures meet the objectives of the course (5.8)”

The result for students are leaning toward “agree”, whereas the result for faculty members stood at a point of 3.5, where a point of 4 denotes "Agreed" and a point of 5 denotes "Strongly Agreed". The detailed breakdown tells that 29% agree and 29% are neutral. This indicates a higher positive response. The survey result among Alumni for the first question on Standard 5-8 annotated a point of 3.71 out of 5, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown tells that it is a higher positive response.

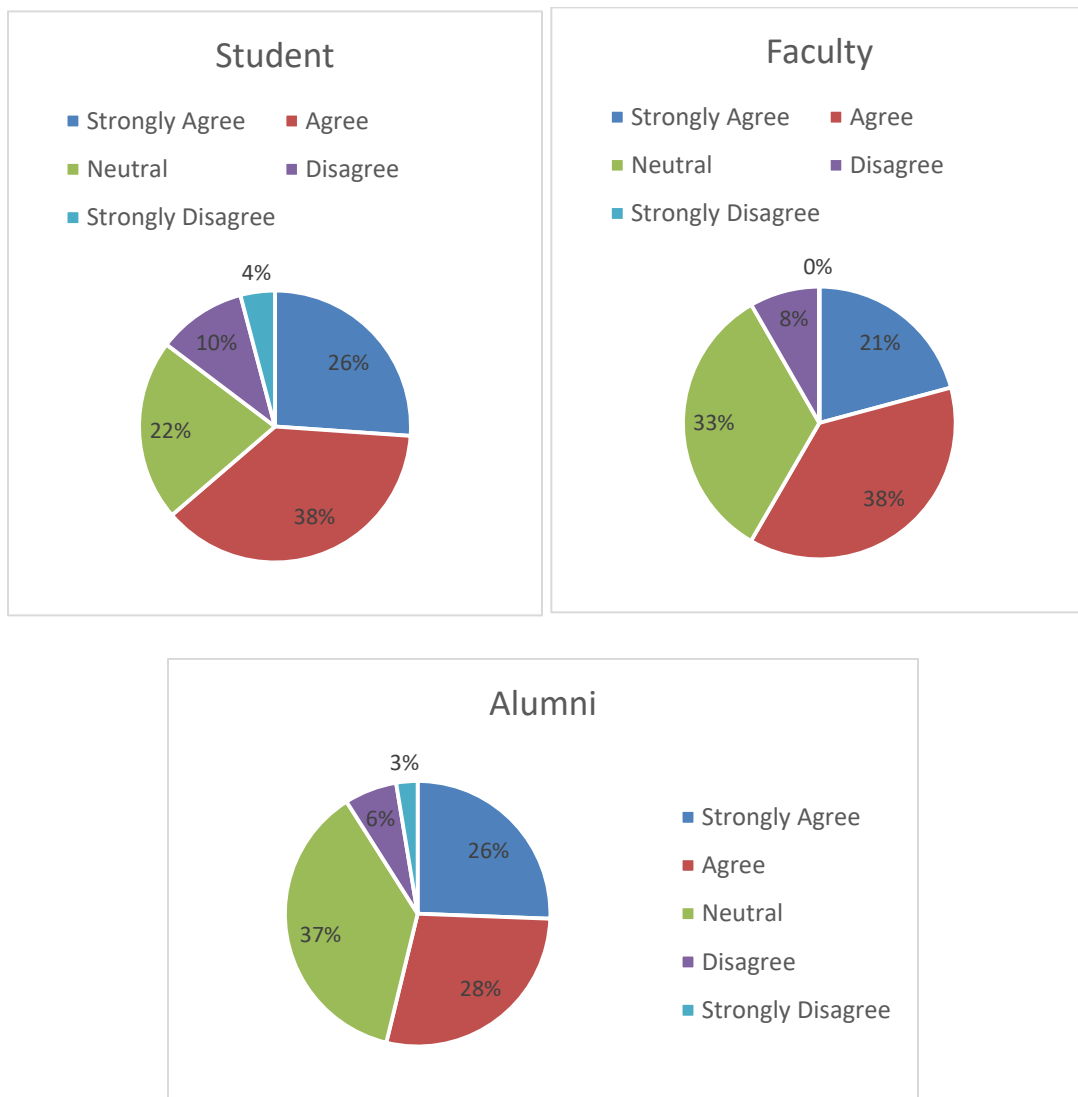


Figure 6-5. Responses of stakeholders for the question “Both formative (quizzes, assignments, term papers, continuous assessments, presentations etc.) and summative assessment (final examination) strategies are followed (5.8)”

The result for students are leaning toward “agree”, whereas the result for faculty members stood at a point of 3.7, where a point of 4 denotes "Agreed" and a point of 5 denotes "Strongly Agreed". The detailed breakdown tells that 33% agree and 38% are neutral. This indicates the response could have been more positive. The survey result among Alumni for the first question on Standard 5-8 annotated a point of 3.67 out of 5, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown tells that it is a higher positive response.

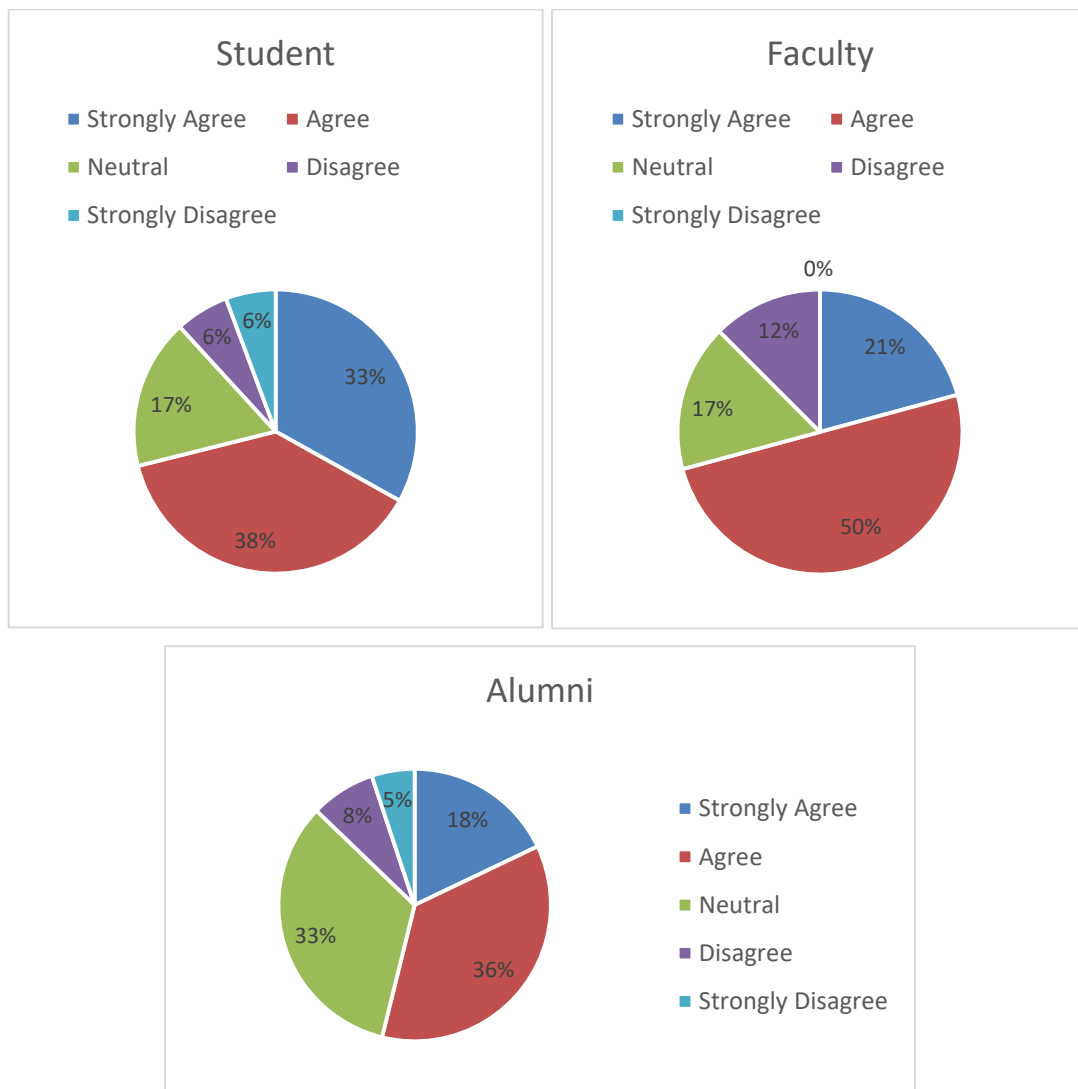


Figure 6-6. Responses of stakeholders for the question “Diverse methods are used for assessment (5.9)”

The result for students are leaning toward “neutral”, whereas the result for faculty members stood at a point of 3.79, where a point of 4 denotes "Agreed" and a point of 5 denotes "Strongly Agreed". The detailed breakdown tells that 50% agree and 17% are neutral. This indicates a higher positive response. The survey result among Alumni for the first question on Standard 5-8 annotated a point of 3.53 out of 5, which means that the alumni are in accord with the faculty members on this issue.

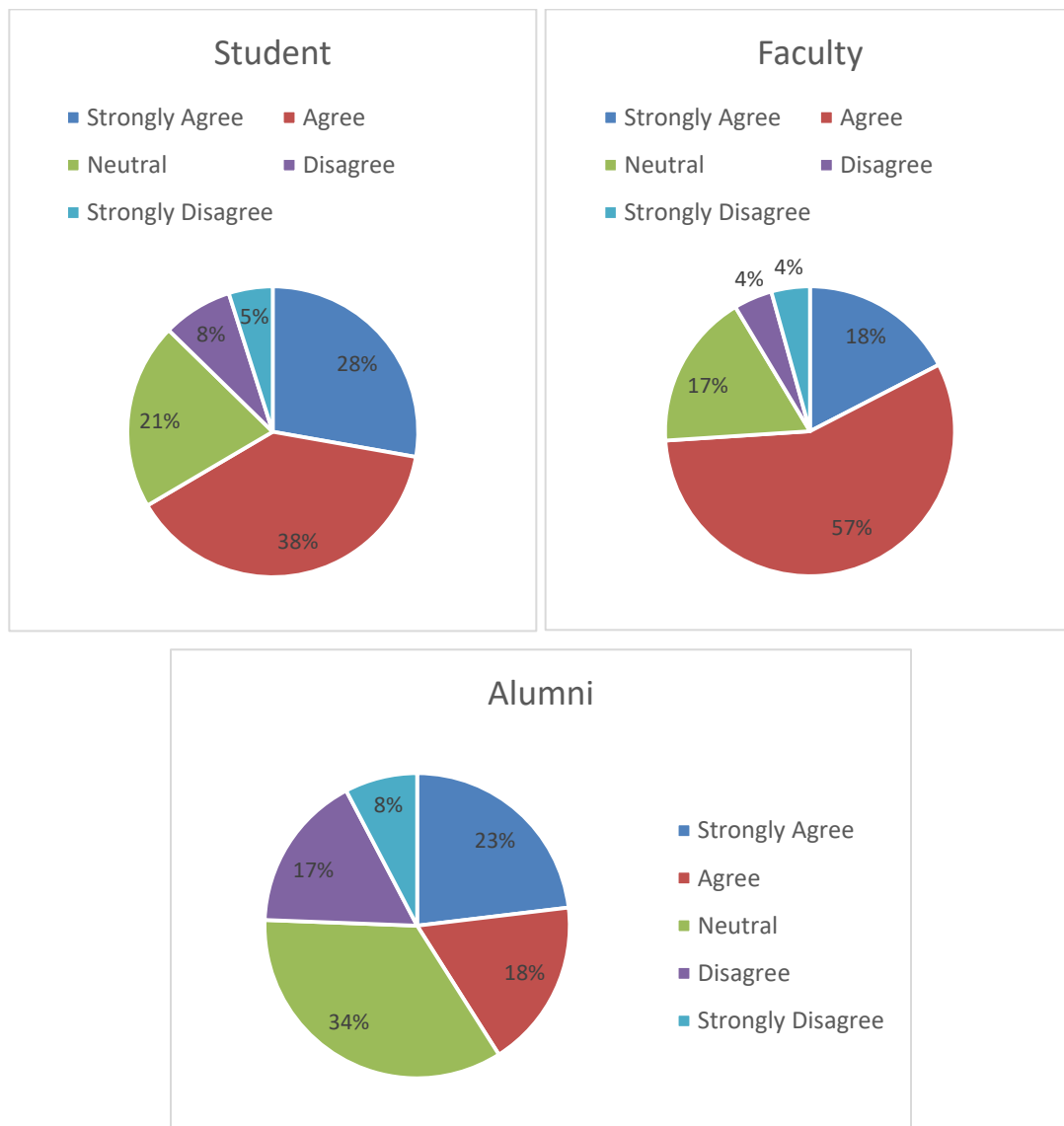


Figure 6-7. Responses of stakeholders for the question “The students are provided feedback immediately after assessment (5.10)”

The final graph on this sub-domain tells a similar issue of students, faculty members, and alumni being in accord on the position of providing feedback in the scope of learning assessment. They are mostly in the region of “agree” that students are provided timely responses by faculty members.

CHAPTER VII

STUDENT SUPPORT SERVICE

Student Support Services at University of Asia Pacific (UAP) offer a wide range of services on academic guidance and counseling, co-curricular and extra-curricular activities, career and placement, alumni services and community services. The department of Computer Science and Engineering (CSE) always emphasizes on these mentioned aspects for the betterment of the students. Dept. of CSE maintains a lot of responsibilities to meet students' support demand starting from the first day at the university till starting a good career after acquiring bachelor's and master's degree. Directorate of Students' Welfare (DSW), UAP is dedicated to guide and support students in this regard centrally. Other responsibilities are maintained the dept. of CSE.

7.1 Academic Guidance and Counseling

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

7.1.1 Advising

Department of Computer Science & Engineering has a strong student advisory system. One advisor will normally be appointed for a group of students by the concerned department. The advisors usually perform the following responsibilities:

1. Maintain regularly scheduled office hours for academic advising as needed throughout the semester.
2. Monitor advisee's academic progress as well as behavior, manner in the campus and initiate contact with advisees those are failing to progress satisfactorily.
3. Assists the students in selection of courses on a short-term and long-term basis.
4. Make the advisees aware of specific dates and deadlines in each semester for – registration, course enrollment, cancellation etc.
5. Inform students the changes in academic policy, rules and curriculum in the university.
6. Help students apply to the higher authority in certain cases by signing in the applications.
7. For students with excellent academic background and for needy students, advisor recommends to the higher authority for financial assistance.
8. Make student understand the examination policies, dos and don'ts.
9. Help them calculate their grades, evaluate and compare own results.
10. Emotional and personal support are given by advisors all the time.
11. Help student regarding any transfer of credits or academic withdrawal.

Students' Responsibilities Regarding Advising:

1. Participate in all scheduled pre-enrollment and orientation programs for incoming students at university.

2. Prepare in advance for academic advising meetings. Map out courses they want and need to take for their degree and present this to their concerned advisor.
3. Make and honor academic advising appointments.
4. Make advisor aware of any special needs or problems encounter at UAP. Concerned advisor is there to guide students through any problems that may hinder their academic success and continued enrollment in the following semester. Advisors are equipped with a plethora of resources to help the students.
5. Know academic policies, procedures, and regulations such as withdrawal, repeat & improvement examination, retakes, academic probation/dismissal, financial aid, etc.
6. Know degree requirements and remain informed about changes in their curriculum. Map out a plan of action for academic career and review it with concerned advisor.
7. Make the effort to get to know the advisor personally, the better they know one another and the more comfortable they will be.

7.1.2 Departmental Administrative Office (DAO)

Each department has a DAO that looks after all the small and big problems of the students all the time. They are the prime part of the department connecting students to the teachers according to specific needs. They are responsible for a lot of tasks starting from admission and registration to clearance while passing out.

Table 7-1. Response of stakeholders to questions related to Standard 6-1

Aspect of Evaluation	Students	Faculty	Alumni	Weighted Average
There is an arrangement in the entity to provide an academic guidance and Counseling.	3.62	3.92	3.50	3.68
Financial grants are available to the students in case of hardship	3.95	3.96	3.54	3.82

The conducted survey covered the evaluation of the Alumni, the students and the faculty members on two questions: "There is an arrangement in the entity to provide an academic guidance and counseling" and "Financial grants are available to the students in case of hardship".

For the first question, response among the students annotated a point of 3.62, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown given below tells that 71% agreed to the point where 23% were neutral. Most of the students get proper guidance from the advisors as much as needed.

The response of faculty members stood at a point of 3.92, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown given below tells that 79% of them agree to the

point and none strongly disagree because most of the time the guidance helps the students achieve their goals.

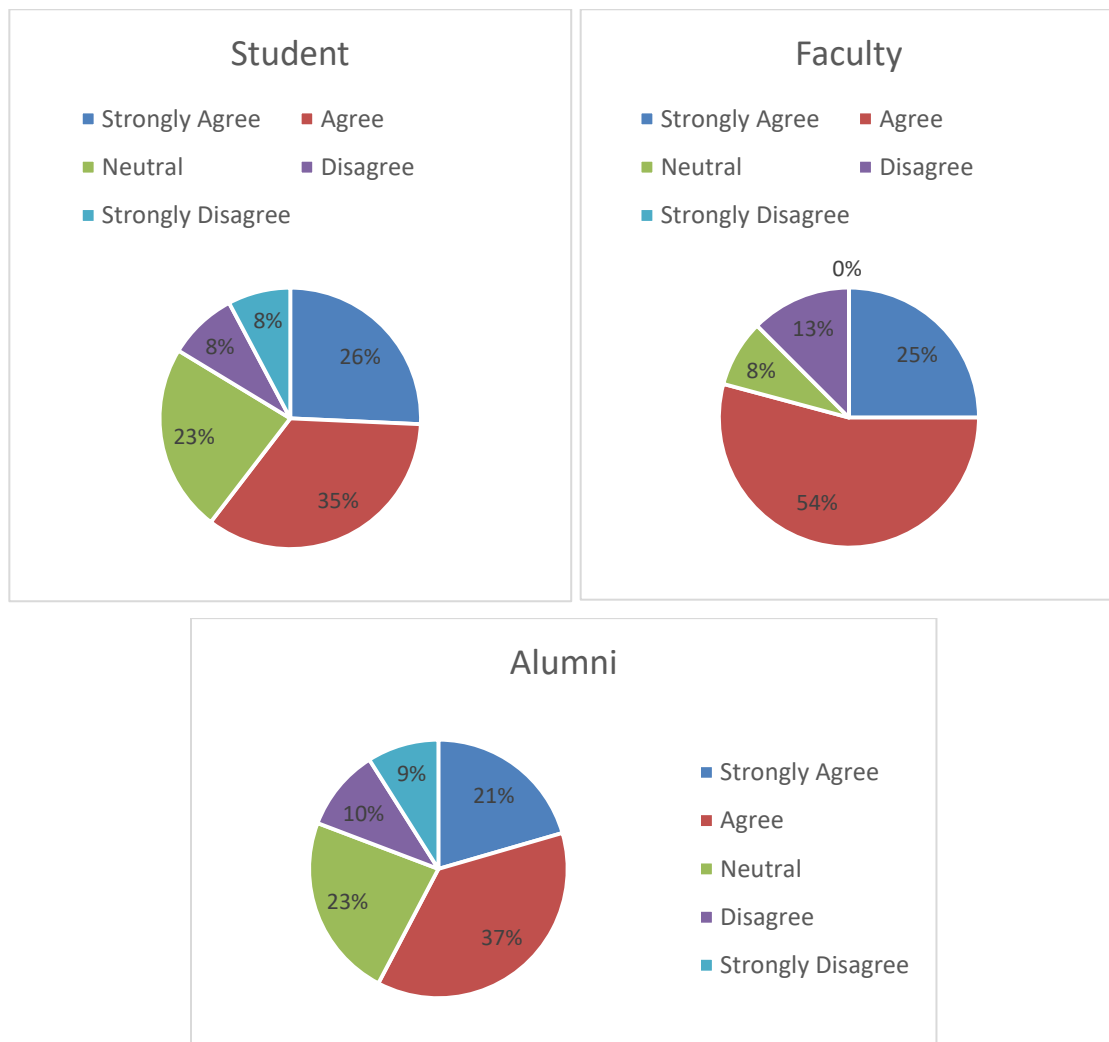


Figure 7-1. Responses of stakeholders for the question “There is an arrangement in the entity to provide an academic guidance and counseling.”

The response among Alumni annotated a point of 3.50 out of 5, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown given below tells that 58% agree to this point and 23% are neutral.

In case of academic guidance, the faculty-members indicated high response rate, as they are actively involved in counseling. The students and alumni response rate were also good, could have been better if the students and alumni would take those guidance as long term efficient ones.

For the second question in the survey, the response among students annotated a point of 3.95 out of 5, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The average is close to agree because each semester a good number of students are getting financial grants. The detailed breakdown given below tells that 68% alumni agree to this.

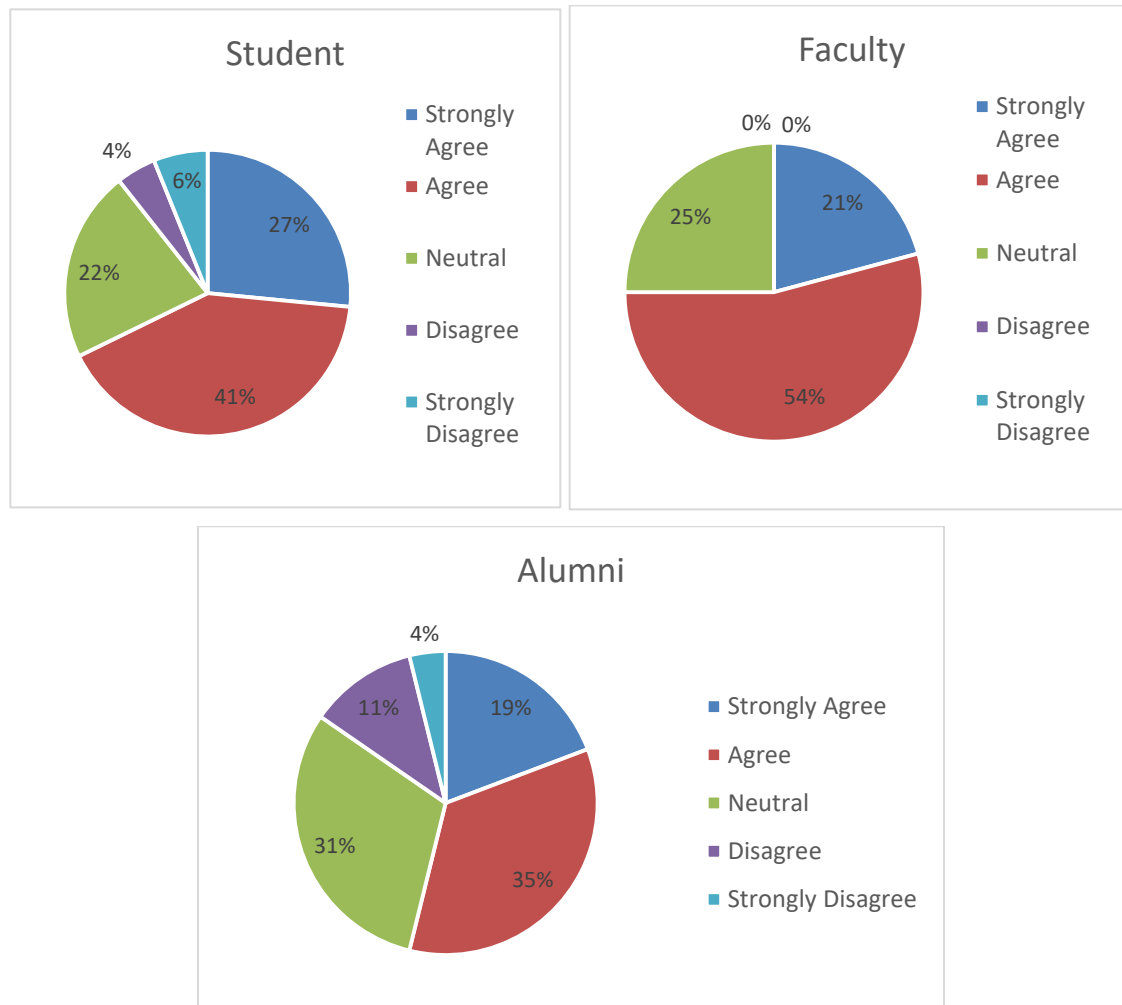


Figure 7-2. Responses of stakeholders for the question “Financial grants are available to the students in case of hardship”

Response among the faculties annotated a point of 3.96, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". This is also close to agree as they are witnessing a lot of students getting grants. The detailed breakdown given below tells that 75% agree to this point where 25% are neutral. The result for alumni stood at a point of 3.54, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The response rate was lowest among alumni. This happened because recently the number of recipients of the grants increased in a good amount.

The grand mean 3.84 for academic guidance, counseling and financial grants among all respondents stands close to "Agreed" level.

7.2 Co-curricular and Extra-Curricular Activities

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.

7.2.1 Central Clubs of UAP

There are total **17** central clubs in UAP for promoting Co-Curricular and Extra-Curricular Activities. They are-

- Cultural club
- Drama Club
- Literary Club
- English Language Club
- Football Club
- Cricket Club
- Basket Ball Club
- Indoor Games Club
- Public Speaking & Debating Club
- Career Development Club
- Social Awareness (Welfare) Club
- Photography Club
- Art & Painting Club
- Adventure Club
- Entrepreneur Club
- Social Business Club and
- Film Club

The above-mentioned clubs are responsible for arranging a variety of events like-

- Cultural programs, such as drama, celebration of national and international events such as
- Pohela Boishakh, 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
- Club Fairs, Study Tours, Picnics etc.

7.2.2 Departmental Clubs

Apart from the central clubs CSE has 8 departmental clubs. The clubs have been formed to ensure and enhance students' involvements in different activities in an organized manner. Each club is headed by General Secretary and consists of convener and organized by some members along with advisory council. Under these clubs several workshops, seminars, symposium, debate competitions, photography exhibitions, sports competitions and business fair were held during recent times. The clubs along with their responsibilities are –

7.2.2.1 Research and Publication Club

Research and Publication Club is a very active and important club of CSE. It publishes a national Journal each semester named **International Journal of Computer and Information Technology (IJCIT)**, ISSN 2078-5828. The IJCIT only publishes articles of the highest quality. It is scholarly, peer-reviewed journal that provides a forum to the academics, scholars and advanced level students for exchanging significant information and productive ideas associated with all Computer Science disciplines. It helps the students and faculty members to improve their research capability producing quality computer professionals who can make positive contribution in the development of this country. Most of the faculty members and students of UAP are engaged to publish their researches at IJCIT.



Figure 7-3. Chairs of ICCIT 2017



Figure 7-4. Paper Presentation in ICCIT 2017

7.2.2.2 Sports Club



Figure 7-5. Sports Club, CSE UAP

Aim:

To promote and develop individual interests in various sports and recreational activities. In addition to the development of specific skills, Sport Clubs are designed to be a learning experience for their members and, through involvement in leadership, responsibility, decision-making, public relations, organization, and fiscal management.

1. Uphold the name and fame of the CSE department as well as UAP by promoting the excellence of the students in different sports competitions.
2. Develop the skills of the students in teamwork, critical thinking, quick decision-making and prompt logical response to arguments.

Activities:

The Activities of this club are as follows:

1. The Club arranges at least one intradepartmental sports competition in an academic year on regular basis.
2. This club usually selects the participants from the CSE department for UAP Sports Competitions or any Sports event outside the university.
3. The Club arranges training for the participants of both indoor and outdoor games if require

7.2.2.3 Cultural and Debating Club

Aim:

University is the highest seat of learning. A university student is to learn socio-interaction, etiquette, exercise tolerance towards the opinions of the others and as a whole promote the intellectual ability beyond the domain of his/her main study.

Apart from the rigorous CSE subjects, extracurricular activities like Cultural programs and Debate will broaden students' minds and enhance their worth appreciating qualities that will ultimately express the excellence of the CSE Department in particular and the UAP in general.

With a pragmatic view to encouraging extracurricular activities, creating and sustaining a congenial environment for such activities, the CSE Department of the UAP has formed the CSE Cultural & Debating Club.

The prime objectives of the CSE Cultural & Debating Club are to:

1. Uphold the name and fame of the UAP by promoting the excellence of the students in cultural programs and debate.
2. Promote the cultural spirit and social etiquette among the students
3. Develop the skills of the students in stage performance, speaking for or against a motion by articulating their respective views.
4. Develop the skills of the students in teamwork, critical thinking, quick decision-making and prompt logical response to arguments.
5. Enhance their ability to defend and prove their ideas through reasoning, improvising and presence of mind.
6. Exercise the tolerance towards the arguments of the others
7. Pave the way for being interested all the more in their study by surmounting the monotony of the rigorous CSE subjects



Figure 7-6. Prize giving ceremony, Sports Club CSE (left) and Drama Club CSE (right)



Figure 7-7. CSE Cultural Club Activities

Activities:

1. Whenever a national event is to be observed on behalf of the UAPCC, the CSE Cultural and Debating club will represent the Department.
2. Arrangement of the Orientation program on behalf of the department in every semester.

3. This club will reserve the right to select cultural/debating participants from the CSE department for competitions to be held both inside/outside the university.
4. Arranging Inter/ Intra department debating competitions on regular basis in the department.
5. Arranging Workshop or Training program on cultural/debating activities to enhance the relevant talents of the student members.
6. Arranging various cultural festivals on the basis of demand.

7.2.2.4 Programming Contest Club

Aim:

Having a considerable skill in programming is essential for every student studying in CSE. Programming Contests present a great opportunity for the students to exhibit and at the same time enhance their programming skills and creativity. During the last decade programming contest has become one of the most challenging and prestigious events in Computer Science arena throughout the world. The ACM International Collegiate Programming Contest (ICPC) is undoubtedly the most honored and spectacular event among all. Since 1998 universities from Bangladesh have participated in all the ICPC World Finals, which is certainly an outstanding feat. Achievements in international arena have led to a surge of enthusiasm regarding programming contests in our country. Now-a-days national level programming contests are arranged regularly exposing a great deal of healthy competitions among the universities.

The goal of this club is to encourage students of UAP to improve their programming skills, to prepare them for participating in different national and international contests and to arrange programming contests of both national and international level in the UAP campus.

Activities:

To achieve the goal, the club will undertake following activities:

1. Arrange weekly training sessions for junior and senior students.
2. Arrange both individual and team practice contests using an online judge installed on a dedicated server maintained by the club.
3. Arrange intra-department programming contests on regular basis.
4. Prepare selected students for participating in different National and International level programming contests.
5. Arrange inter-university programming contests in the UAP premises.



Figure 7-8. ACM ICPC 2017



Figure 7-9. CSE Programming Club

7.2.2.5 Career Development Club

The Career Development Club (CDC) is the most active club at the dept. of CSE, UAP. Every semester, it organizes different seminar and workshops to help the students about preparing themselves for the future professional life which they are going to choose. The CDC-CSE invites expertise from different industry to share their on-hand knowledge in real professional environment with our undergraduate and graduate students. The CDC-CSE supervise the students to build strong network with alumni's, different industry to collaborate with the other university, academic departments, colleges, representatives and relevant organizations in activities designed to further the aims of the service. The CDC-CSE has some specific aims and objectives which are stated bellow. Recent activities of the CDC-CSE are also mentioned here.



Figure 7-10. MOU Signing Ceremony between CSE, UAP and KJS Ltd, Japan (left), KJS Scholarship Ceremony for ITEE Examination 2017 Passer (right)

Aim:

- To help undergraduate, graduate students and alumni of the university to make well-informed choices about their future working lives and to translate these effectively into appropriate decisions and actions.
- To maintain and develop links with the range of organizations providing appropriate opportunities for graduates, including further internship.
- To provide students with guidelines to plan for better careers.
- To introduce students with different sectors and job fields all around the globe.
- To guide students through their interests and make them ready for any job environment.
- Provide necessary scopes to develop and evaluate oneself based on current market standard.
- To help the University of Asia Pacific to achieve its mission.

Objectives

- To provide up-to-date information about occupations, fields of work, research opportunities, organizations and their work and relevant vacancies.
- To help students and graduates understand and develop the necessary skills to equip them for whatever career path they choose.
- To provide opportunities for students and graduates to understand their competencies, aspirations and options through a variety of means, including personal discussion with professional advisers.
- To promote the Careers Service to all entitled users, allowing them to make a personal choice on when and how best to engage with the Careers Service.
- To recruit, train and develop staff at all levels, to enable these aims and objectives to be met.

Activities:

Generally, the activities of this club are stated as below. The recent activities of the club is also mentioned here.

- Manage Internship
- Arranging workshops and seminars
- Training Program
- Job Fair
- Relationship Development
- Career Planning
- Preparing the students about writing competitive CV.
- On Campus Recruitment

Recent Activities:

Some recent major activities of this club are as follows:

Workshop on Job market challenges: Where Do You Want to Go Tomorrow?

A Workshop was held on May 25th, 2017 where the key speaker was A A Munir Hasan, Coordinator, Youth Programme, Prothom Alo General Secretary, Bangladesh Open Source Network (BdOSN) General Secretary, Bangladesh Mathematical Olympiad Committee (BdMOC) Vice-President, Society for the Popularization of Science, Bangladesh (SPSB). Honorable Treasurer of UAP Air Commodore Ishfaq Ilahi Choudhury was also present and gave his valuable speech to the students.



Figure 7-11. Workshop on Job market challenges.

Workshop on Prepare Yourself for the Desired Job (CV Writing & Interview Facing Techniques)

A Workshop was held on 20th July, 2017 where the key speakers were Md. Nazmul Huda, Assistant Director (HR Training), Bangladesh Bank, Ex. Training Executive, Orion Group and Md. Redwan-ul-Haque, Head of Business, Chakri.com.

Workshop on ITEE Pre-Mock-Test and Workshop Organized by CSE, UAP and KJS-Japan

A Workshop was held on 19th Sept., 2017 where Prof. Dr. Jamilur Reza Choudhury Vice Chancellor, UAP was the chef guest. The specials guests were Prof. Ito Kenichi, Miyazaki University, Prof. Shiraishi Fumie, Miyazaki University, Mr. Ota-san (JICA, Dhaka office) Mr. Ahmed Sarowar (BCC).

7.2.2.6 Software and Hardware Club

Aim:

1. The aim of the Club is to develop and improve student skills through the developments of various Software and Hardware projects regularly.
2. The Club will collect and preserve all the academic projects (current and previous ones) developed by the students of the department that include Term Projects, Lab Projects, Research Projects etc. and will further work on some selected projects make them compliant to the industry standards. The Club will also work on the development of new projects with the help of the member students.
3. The Club will arrange at least one Software Fair per year with the developed projects. Through this, it aims to
4. Give the students of the department the exposure to the outside world and the job market presenting their developed projects before the various Firms and Organizations.
5. Enhance the University image in education sector.
6. Introduce students before the latest and more recent technologies in the market.



Figure 7-12. Software hardware Carnival Prize Giving Ceremony.

Activities:

UAP Software & Hardware Club initiated several programs to achieve its goal. Till now the club organized the following events

1. Inter University Software and Hardware Carnival 2017
2. CSE Carnival May 2011.
3. Three-day workshop on C and C++ before midterm examination of Fall – 2009 in order to help junior students to strengthen their knowledge in programming language.
4. Software & Hardware Fair on CSE – DAY 2009.
5. Oracle Certified Programmer (OCP) training course to make students more competitive in job market.



Figure 7-13. Project Show, HnS Carnival 2017.



Figure 7-14. Honorable Judges, HnS Carnival 2017

7.2.2.7 Film and Photography Club

Aim:

1. To promote and develop individual interests about short film and photography.
2. In addition to the development of specific skills, photography Clubs are designed to be a learning experience for their members through
3. Involvement in leadership, responsibility, decision-making, public

4. Relations, organization, and fiscal management by arranging different workshop, photo walk and film festival.
5. Uphold the name and fame of the CSE department as well as UAP by promoting the excellence of the students in different competitions.
6. Develop the skills of the students in teamwork, critical thinking and quick decision-making and prompt logical response to arguments.



Figure 7-15. Photography Exhibition (The Viewfinder: Season 1), 2017 (left); Members of Photography Club, CSE UAP (right)

Activities:

The Activities of this club are as follows:

1. This Club arranges at least one intradepartmental competition in an academic year on regular basis.
2. This club usually selects the participants from the CSE department for UAP Film club and photography club Competitions or any event outside the university.
3. This Club arranges training photo walk for the students.

7.2.2.8 Robotics Club

Aim:

1. To promote and develop individual interests in robotics.
2. In addition to the development of programming skills, Robotics Club have designed to be a learning experience for their members and, through involvement in electronic circuits, embedded systems, artificial intelligence, sensing and decision-making.
3. Uphold the name and fame of the CSE department as well as UAP by promoting the excellence of the students in different robotic competitions.
4. Develop the skills of the students in teamwork, critical thinking, and decision-making and prompt logical response to arguments.

Activities:

The Activities of this club are as follows:

1. The club arranges at least one intradepartmental robotic competition in an academic year on regular basis.
2. This club usually selects the participants from the CSE department for any Robotic event outside the university.
3. The Club arranges training as well as workshops for the interested students to spread robotics.

Table 7-2. Response of stakeholders to questions related to Standard 6-3

Aspect of Evaluation	Students	Faculty	Alumni	Weighted Average
The entity provides co-curricular and extracurricular exposures to the students.	3.84	4.0	3.54	3.79

The conducted survey covered the evaluation of the Alumni, the students and the faculty members on the question: "The entity provides co-curricular and extra-curricular exposures to the students".

The survey response among Students annotated a point of 3.84 out of 5, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown given below tells that 70% of them agree to this because they are involved in such activities. 17% are neutral because of their lack of interest in those.

The result for faculty members stood at a point of 4.0, where a point of 4 denotes "Agreed" and a point of 5 denotes "Strongly Agreed". The faculty members implied that the department holds co-curricular and extracurricular events on regular basis.

The survey result among Alumni annotated a point of 3.54 out of 5 and that among the students annotated a point of 3.84, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown given below tells that 52% of them agree to this.

The response of the students and alumni was between neutral to agreed threshold with students agreeing to the point more. The grand mean of 3.79 again indicated a level close to "agreed" from "neutral", meaning that there are a good number of facilities for the students to get involved in a lot of activities for their betterment.

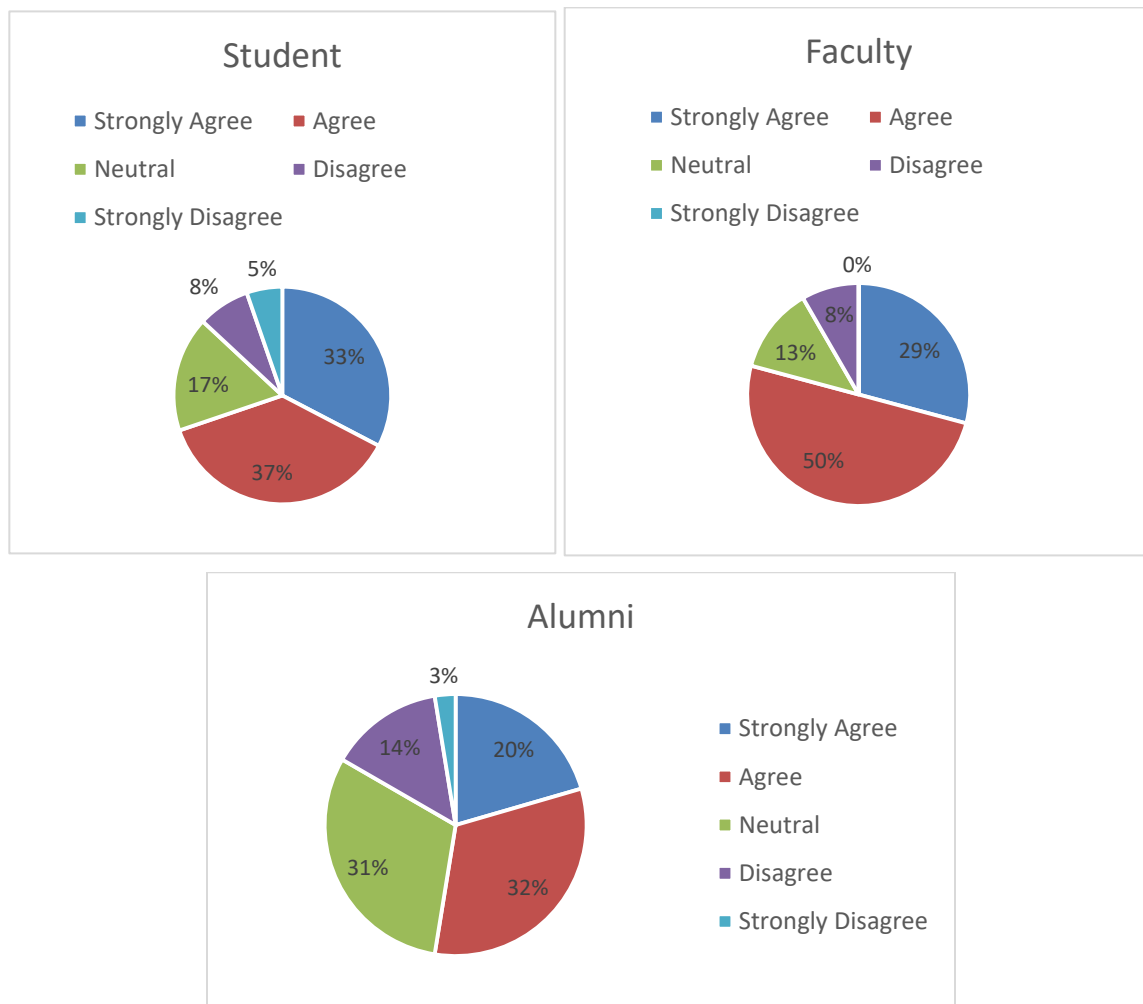


Figure 7-16. Responses of stakeholders for the question “The entity provides cocurricular and extracurricular exposures to the students”

7.3 Career and Placement

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

The CSE Career Development Club of UAP takes the responsibility of providing students with guidelines to plan for better careers. Career Development Club introduces students with different sectors and job fields all around the globe, grooms them for job hunting and makes them confident and competent. It guides students according to their interests and make them ready for any job environment. The club also provides necessary scopes to develop and evaluate oneself based on

current market standard. The current students and graduates are closely monitored and they are given proper counseling on their respective job interests.

Activities:

The Activities of this club are as follows:

1. Manage Internship
2. Arranging workshops & seminars
3. Training Program
4. Job Fair
5. Relationship Development
6. Career Planning
7. CV Collection
8. Campus Recruitment

7.3.1 MoU between KJS Ltd. Japan and CSE UAP:

This Memorandum of Understanding (MOU) is made and signed on this day of 17th July, 2017 for conducting the survey and research on employment in IT companies in Japan,

BY & BETWEEN

KJS Company Ltd., Japan (KJS), well-known IT Company from Japan was established in 2008. The main activities of KJS include (not limited to) developing and providing support for the total solution from making system to creating and distributing contents on education and information system and to carry out Feasibility Survey for Utilizing Japanese technologies through the aforementioned project in different countries. The project is under Ministry of Economics of Japan. The KJS main office is at Nishimura-building 6F, 3-10-36, Tachibanadori-nishi, Miyazaki-shi, Miyazaki, 880-0001, JAPAN.

AND

University of Asia Pacific (UAP) is one of the prestigious private universities in Dhaka, Bangladesh offering higher education in various fields especially Engineering and Technological Education. It is worth pointing out that, UAP started its journey back in 1996 under the private university Act 1992, with the Dept. of Computer Science & Engineering (CSE) as its foremost department. The Dept. of CSE, UAP always attempts to utilize the best technical resources that it has to empower the students, educators, researchers, consultants, training managers, policy makers, curriculum developers, and entrepreneurs with the practices of ICT to realize the digital Bangladesh. In the past few years, the Dept. of CSE, UAP has successfully organized some major technical events like CSE Fest'2015, NCPC 2016, ICPC 2016, CSE Carnival 2017, Inter University Programming Contest, Workshops and many seminars in the various fields of Engineering and Technology.

In consideration of the rights and obligations herein set forth, the parties do thereby agree as follows:

WHEREAS:

KJS Company, Ltd. and the Dept. of CSE, UAP had a discussion on implementation of the demonstration project for the ITEE (IT Engineers Examination) preparation and the survey as well as research on employment in IT Companies in Japan as part of “Verification Survey with the Private Sector for Disseminating Japanese Technologies for the use of e-learning system, compatible with weak communication environment, for the courses of the Information Technology Engineer Examination” conducted by KJS Company, Ltd.

As a result of the discussion, all the involved parties have approved of the implementation of the demonstration project for the ITEE preparation in University of Asia Pacific based on the following mutual agreements.

7.3.2 KJS Scholarship Award Ceremony for ITEE Examination 2017:

The “KJS Scholarship Award Ceremony” of ITEE Examination 2017 was held on 20th (Wednesday) December, 2017 at 3:30 p.m., Room # 714. Honorable Vice Chancellor, Prof. Dr. Jamilur Reza Choudhury was present as the Chief Guest. The following are the lists of successfully passer students who are nominated for receiving the KJS Ltd. Japan Scholarship Award. The scholarship includes specific prize money and certificates.

Successfully IP Passer:

1. Nabila Rahman
2. M.A.M Mamunur Rashid
3. Rakib Ul Haque

Successfully FE Passer (Half Passer):

1. S. M. Tanjilur Rahman

The KJS Ltd. and the ITEE Examination team have also considered acknowledging those students who has watched and practiced the e-learning movies/quizzes more than 100 times.



Figure 7-17. Award Ceremony of KJS, Japan

7.4 Alumni Services

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.

The Alumni are the ambassadors of an educational institution. They thrive to succeed in their respective sectors of expertise and disseminate the worth, praise and glory of the institution they belonged to.

There is a fully functional departmental Alumni body named as **UAP CSE Alumni Association (UAPCSEAA)**.

Purposes of University of Asia Pacific CSE Alumni Association is to promote the best interest of the department of CSE; to encourage understanding and support of the Computer Science and Engineering program; to keep members informed of all activities of the Department and of the University community as a whole; to provide an incentive for members to direct highly qualified and motivated potential candidates to the CSE department; to aid the Department in its future development both in an advisory and financial capacity; to sponsor social and professional activities of the Alumni Association and also to involve in various activities to serve the society along with the current students of the Department.

The Executive Committee of the Alumni Association consists of President, three (03) Vice-Presidents, General Secretary, Treasurer, Organizing Secretary and 25 Executive Committee members (From each academic year one representative preferably may join).

7.4.1 Committees and Task Forces:

The President/General Secretary along with active members appoint all Committees and their Chairmen. Committees and Task Forces are responsible for conducting the business of their committee and reporting such business to the President and General Secretary accordingly.

1. **Activities Committee:** This Committee will make recommendations for various activities to be taken up. These recommendations will include issues related to meetings, alumni events and student-focused activities.
2. **Awards Committee:** This committee shall be responsible to short list candidates for awards in different fields of excellence.
3. **Scholarship and Grants Committee:** This committee shall be responsible for issues related to the scholarship for the poor but meritorious students and to develop a process and to maintain a grants program for current students.
4. **Finance Committee:** This committee shall be responsible for financial dealings in all respect.

The mission of the proposed University of Asia Pacific Alumni Association (UAPAA) is to create an environment in which UAP alumni, i.e. former students stay connected to the university and support it with their work, wisdom and wealth. The Alumni Association implements its mission in partnership with the University's Directorate of Students' Welfare (DSW).

The Alumni Association will be an active participant with the DSW as it engages alumni through programs on and off campus that expand and strengthen the connections between them and our alma

mater. This engagement will come through educational programs (working with students and faculty), cultural and promotional programs and other activities. The alumni will be connected with and informed of the University's programs and activities and create an effective alumni network.

The Alumni Association will engage with current students to share the heritage and traditions of University and the significant role that they as alumni can play after graduation. The Alumni Association will welcome new students as they enter the University, support them in their time on campus and assist them as they leave campus to enter the outside world.

- New Student Orientation
- Graduating Student Send-Offs
- Engaging and Connecting with Current Students and Young Alumni
- Parents / Alumni Awards Weekend
- Celebrating Success in the Alumnus Career

UAPCSEAA has also added some more discussion points as follows:

- New Alumni Member Registration program
- Registration fair
- Individual member registration
- Annual Picnic arrangement
- Identifying learning and development activities
- To organize career counseling program.
- To call upon the congratulation ceremony for receiving award and
- Fund Raising

Table 7-3. Response of stakeholders to questions related to Standard 6-5 & 6.6

Aspect of Evaluation	Students	Faculty	Alumni	Weighted Average
There is an organized and supportive alumni association.	3.70	4.1	3.36	3.72
The entity collects alumni feedback to update the learning outcomes of the program	3.74	3.92	3.50	3.72

The conducted survey appraised the responses of the Alumni, the students and the faculty members on the two questions: "There is an organized and supportive alumni association" and "The entity collects alumni feedback to update the learning outcomes of the program".

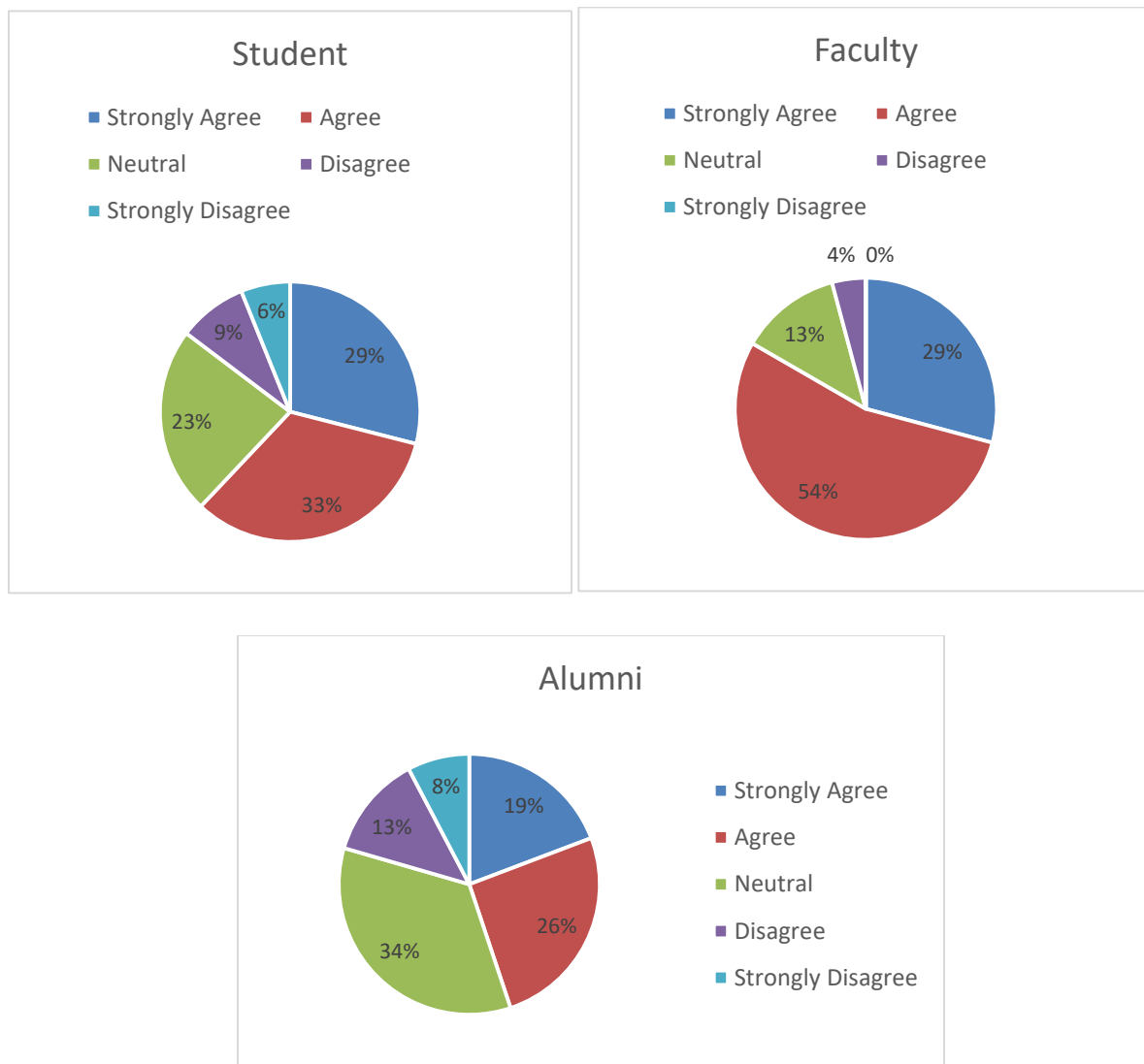


Figure 7-18. Responses of stakeholders for the question “There is an organized and supportive alumni association”

The survey result among the students annotated a point of 3.70, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The result for faculty members stood at a point of 4.1, where a point of 4 denotes "Agreed" and a point of 5 denotes "Strongly Agreed". The survey result among Alumni for the first question on Standard 6-5 annotated a point of 3.36 out of 5, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The detailed breakdown tells that it is a higher positive response.

This proves that UAP CSE alumni association is on its rhythm with average 3.72.

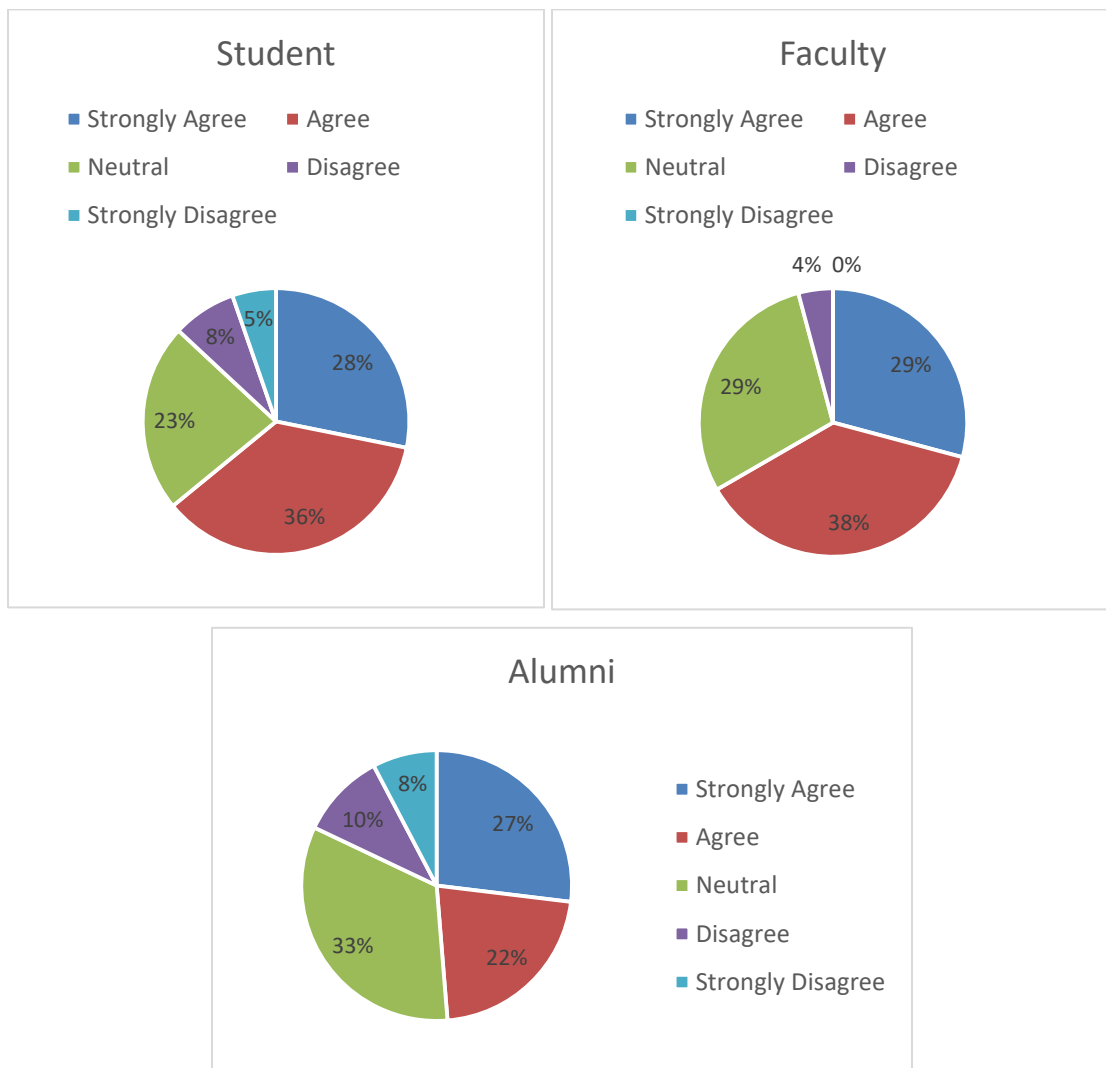


Figure 7-19. Responses of stakeholders for the question “The entity collects alumni feedback to update the learning outcomes of the program”

The survey result among the students annotated a point of 3.74, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed". The survey result among faculty stood at 3.92, where a point of 3 denotes "Neutral" and a point of 4 denotes "Agreed".

7.5 Community Services

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.

The Social Awareness Club UAP has always been involved in numerous social works throughout the year. The members of this club believe that we all are from the same root & thus we all have our responsibilities and duties toward the society.



Figure 7-20. Blood Donation Camp



Figure 7-21. Winter Cloth Distribution Program

The Social Awareness Club UAP is one of the most active and praiseworthy clubs. They earned this for their year-long events and activations. Some of them include-

1. Blood Donation Program
2. Winter Cloth Distribution Program
3. Distribution of Eid clothing to street children
4. Helping flood affected people
5. Seminars

Table 7-4. Response of stakeholders to questions related to Standard 6-8

Aspect of Evaluation	Students	Faculty	Alumni	Weighted Average
There are opportunities to be involved with community services.	3.78	3.96	3.58	3.78

The conducted survey appraised the responses of the Alumni, the students and the faculty members on the questions based on Standard 6-8: “There are opportunities to be involved with community services”.

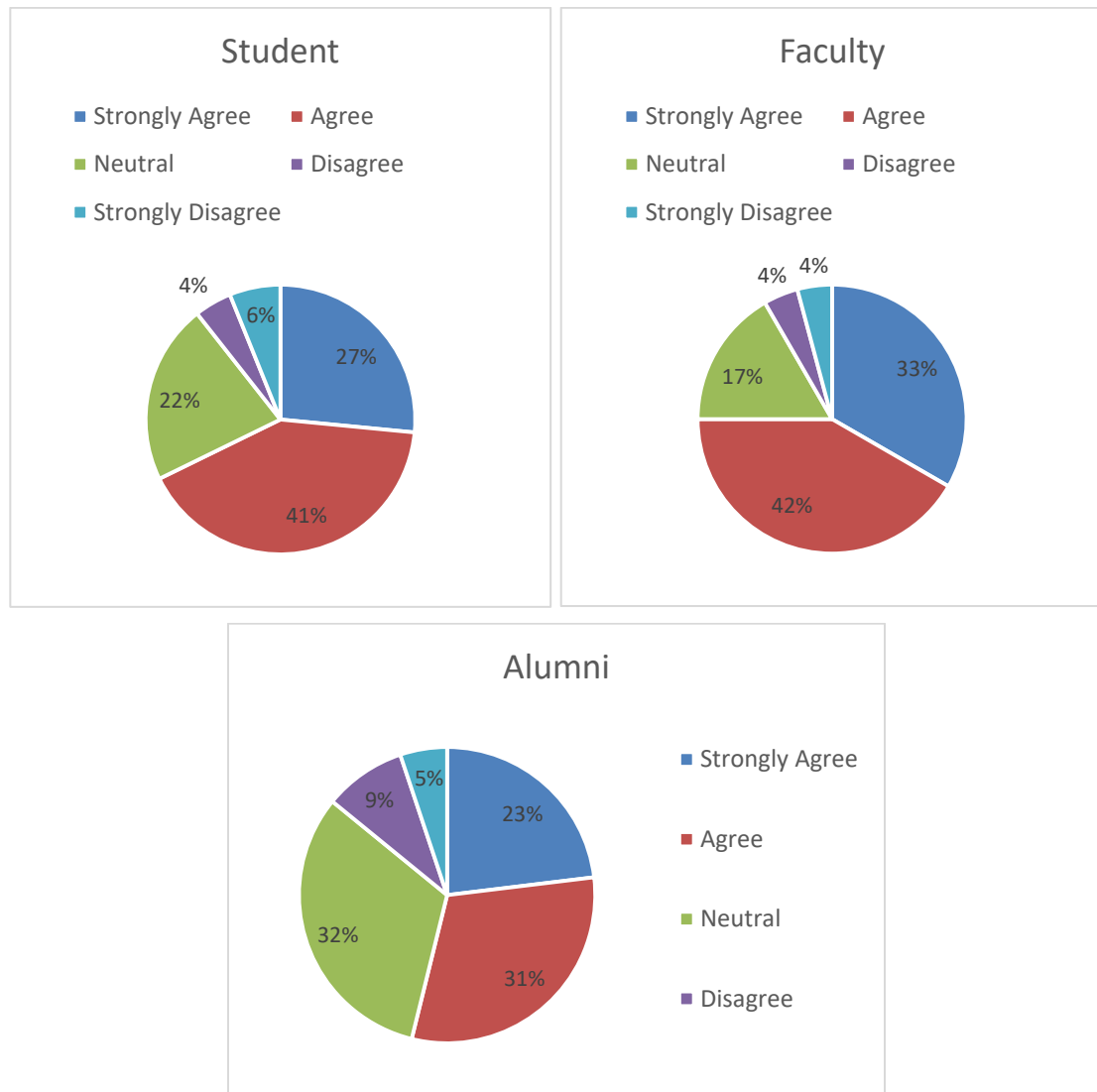


Figure 7-22. Responses of stakeholders for the question “There are opportunities to be involved with community services”

The survey result among the students annotated a point of 3.78, where a point of 3 denotes “Neutral” and a point of 4 denotes “Agreed”. The detailed breakdown tells that 58% agree and 22% are neutral about it.

The survey result among Faculty annotated a point of 3.96 out of 5 and that among the students annotated a point of 3.78, where a point of 3 denotes “Neutral” and a point of 4 denotes “Agreed”.

The response rates from the faculties show that the community services are being done with passion and sincerity.

The survey result among Alumni annotated a point of 3.58 out of 5 and that among the students annotated a point of 3.78, where a point of 3 denotes “Neutral” and a point of 4 denotes “Agreed”.

The grand mean of 3.72 also tells the same. Still we do agree that there are more community services to be done in future.

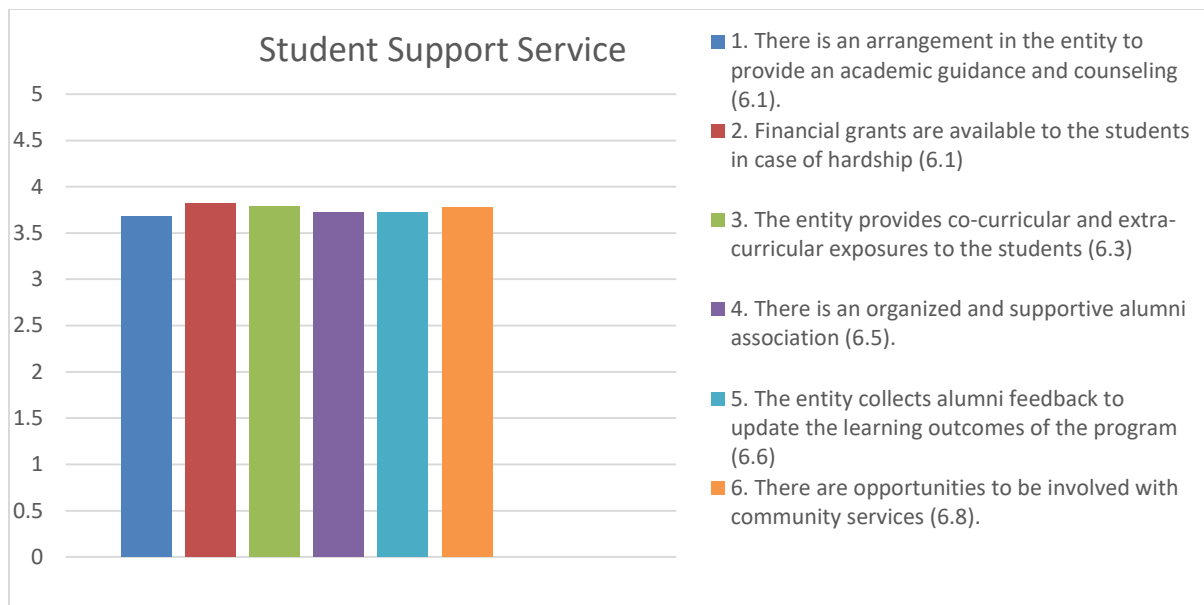


Figure 7-23. Responses of stakeholders for the questions regarding Student Support Service

From the above summary, we can conclude that the overall response of all the questions are above 3.68 whereas all the questions other than 1 has response above 3.72. Question 2 got the highest response which was about financial grants. So, response on financial grants, co-curricular and extra-curricular activities and community services were better where alumni related questions were leveled at 3.72. It implies that we need to improve our counseling and alumni activities for further development.



Figure 7-24. Faculties of CSE UAP

CHAPTER VIII

STAFF AND FACILITIES

The main objective of University of Asia Pacific (UAP) is to provide high quality education at tertiary level relevant to the demands of a high quality dynamic academia in Bangladesh. The courses and curricula are designed to enable and equip a student to enter into the national and international job market or pursue higher academic and professional goals with a solid academic foundation. Keeping this fact in mind, university strongly believes that one of the primary responsibilities of 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.

Department of Computer Science and Engineering has a good number of academic and non-academic staffs. Faculties have earned their degrees from internationally reputed universities at home and abroad. Selectively recruited non-academic staff demonstrates efficiency and commitment to the Department. To develop the team, the university follows recruitment rules applicable to all department as well as specific rules for each department.

8.1 Recruitment

The sole objective of the university is not to make the students pass the exam only. The university equips its students with the means to become productive and proactive members of the community and continue the practice of continuous learning to become 'future leaders' and useful members of the society. The university gives significant importance in recruiting good quality academic staffs. 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 non-academic staffs.

8.1.1 Entry Qualifications

General Principles Applicable to All Departments specifying that (a) as nature of appointment, all appointments in teaching positions are treated as independent appointments, (b) A candidate must not possess a Third Class/Division in any public examination, (c) Publications in recognized and referred journals/proceedings are counted.

Department of Computer Science and Engineering:

i. Lecturer:

The candidate possesses CGPA 3.0 or a First-Class B.Sc. Engineering degree or equivalent in relevant branch of Engineering obtained from a recognized university/institution.

ii. Assistant Professor:

The candidate possesses (a) Ph.D. in relevant field or (b) Master's degree with CGPA 3.0 or a First-Class B.Sc. Engineering degree or equivalent in relevant branch of Engineering obtained from a recognized university/institution and minimum 3 years of teaching experience with at least 1 publication.

iii. Associate professor:

The candidate possesses Ph.D. in relevant field with minimum 8 years teaching experience of which 5 years as Assistant Professor and should have at least 5 publications. However, experience may be relaxed in case of applicant with excellent publication records.

iv. Professor:

The candidate possesses Ph.D. in relevant field with minimum 11 years teaching experience including 8 years as Assistant Professor or above, of which 3 years must be as Associate Professor and should have at least 10 publications. However, experience may be relaxed in case of applicant with excellent publication records.

8.1.2 Salary

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

8.1.3 Bonus

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

8.1.4 Provident Fund (PF)

All permanent employees of the University of Asia Pacific (UAP) get the benefit of Provident Fund subject to the provision of PF rules.

Table 8-1. Aspects of Evaluations regarding Facilities and Staff.

Aspect of Evaluation	Average (From faculty)
1. Recruitment policy and practices are good enough for recruitment of competent academic and non-academic staff (7.1)	4
2. Salary and incentives are attractive enough to retain the academic and non-academic staff (7.2).	4.12
3. Good team spirit exists among different academic staff (7.4).	4.16
4. A congenial atmosphere prevails to enhance professional knowledge through research and higher studies (7.5)	3.91
5. Academics have enough opportunity to take part in different seminar/workshop/training programs for skill development (7.7)	3.91
6. The entity has a policy to provide mentoring/continuous guidance for new academic staff.(7.8)	4
7. The entity practices seminars and workshops to share knowledge and experience among the faculty members (7.11)	3.58
9. The entity has a performance award policy to inspire academic staff (7.12)	3.5
10. Performance indicators are the criteria for promotion/up-gradation (7.12)	3.83

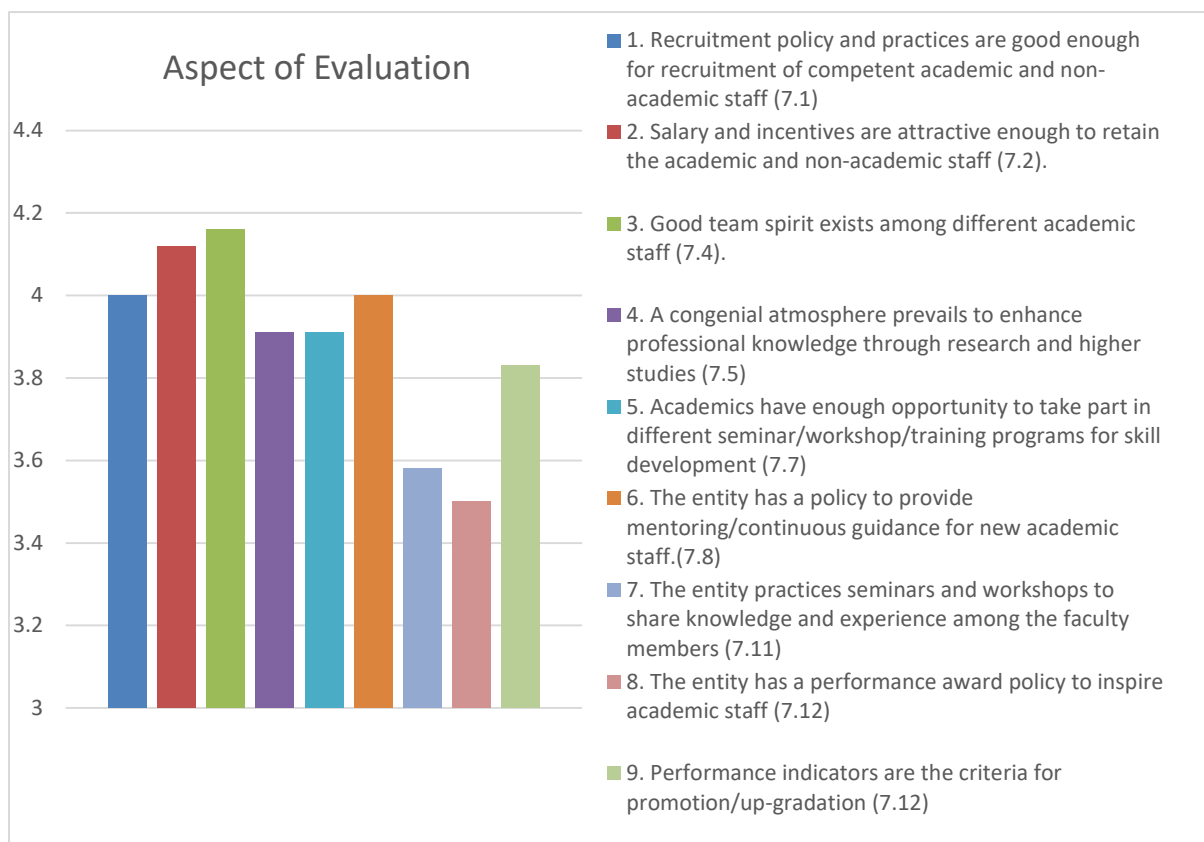


Figure 8-1. Aspects of Evaluations regarding Facilities and Staff.

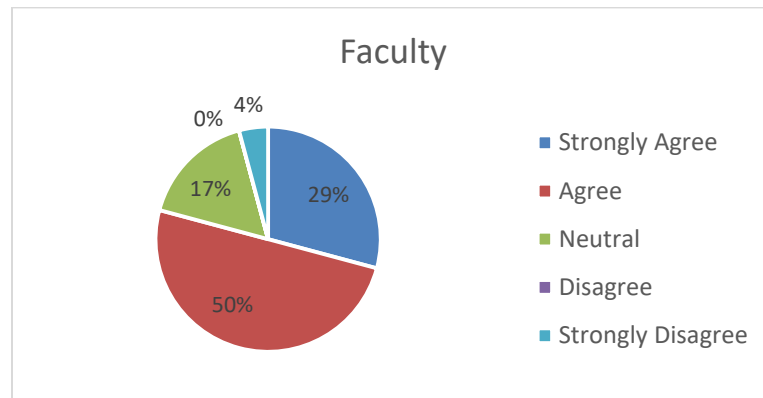


Figure 8-2. Responses of stakeholders for the question “Recruitment policy and practices are good enough for recruitment of competent academic and non-academic staff (7.1)”

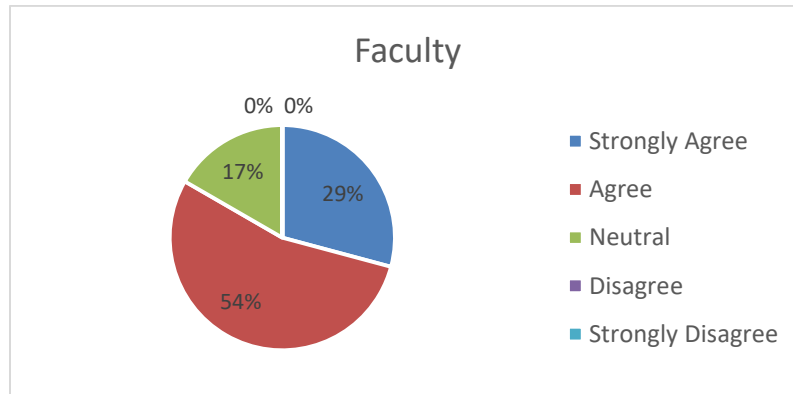


Figure 8-3. Responses of stakeholders for the question “Salary and incentives are attractive enough to retain the academic and non-academic staff (7.2)”

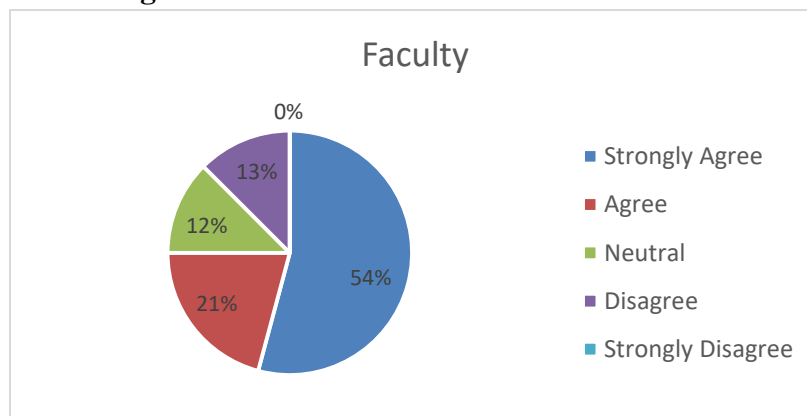


Figure 8-4. Responses of stakeholders for the question “Good team spirit exists among different academic staff (7.4).”

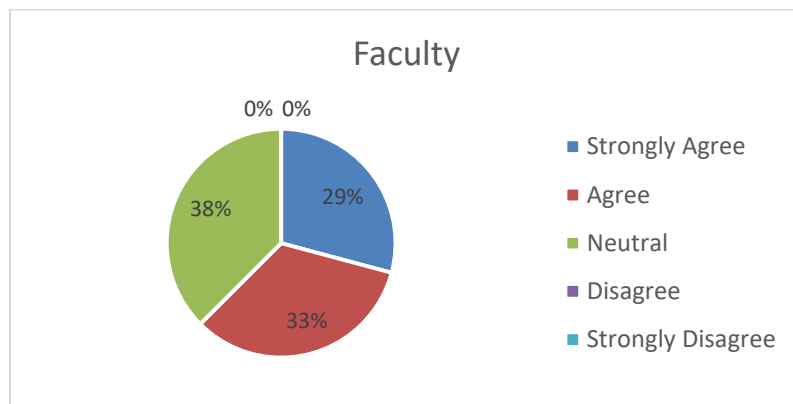


Figure 8-5. Responses of stakeholders for the question “A Congenial atmosphere prevails to enhance professional knowledge through research and higher studies (7.5)”

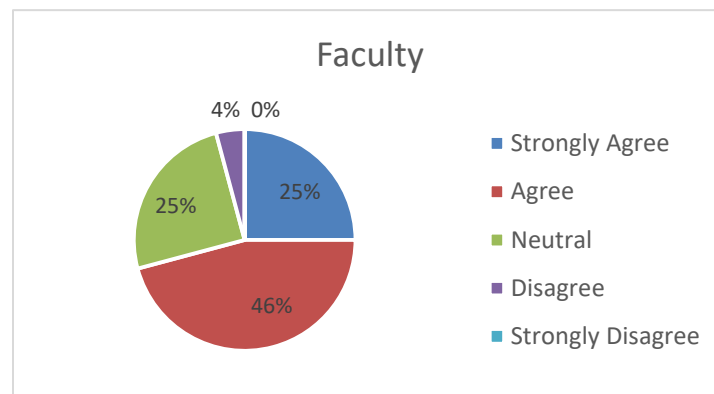


Figure 8-6. Responses of stakeholders for the question “Academics have enough opportunity to take part in different seminar/workshop/training programs for skill development (7.7)”

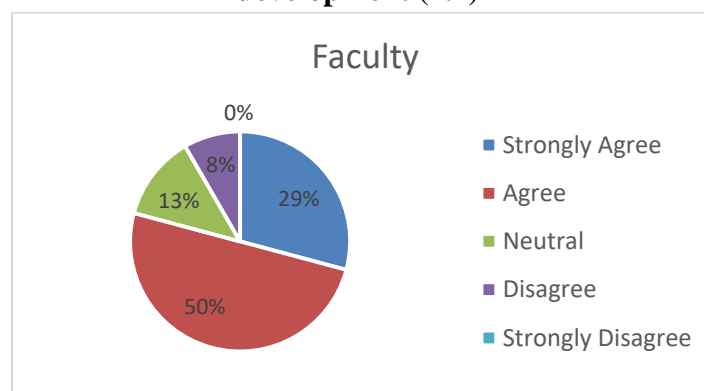


Figure 8-7. Responses of stakeholders for the question “The entity has a policy to provide mentoring/continuous guidance for new academic staff. (7.8)”

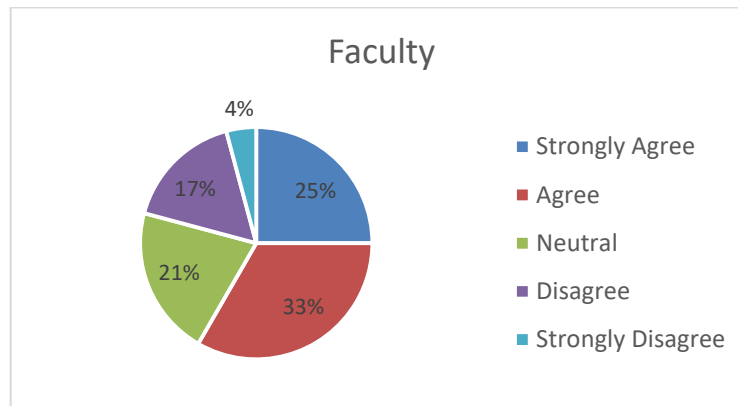


Figure 8-8. Responses of stakeholders for the question “The entity practices seminars and workshops to share knowledge and experience among the faculty members (7.11)”

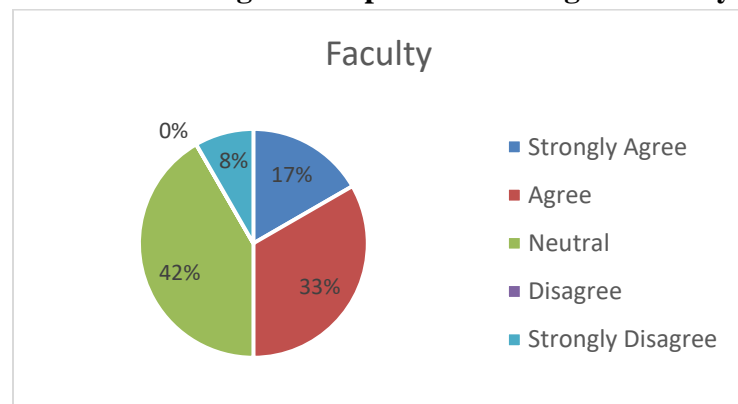


Figure 8-9. Responses of stakeholders for the question “The entity has a performance award policy to inspire academic staff (7.12)”

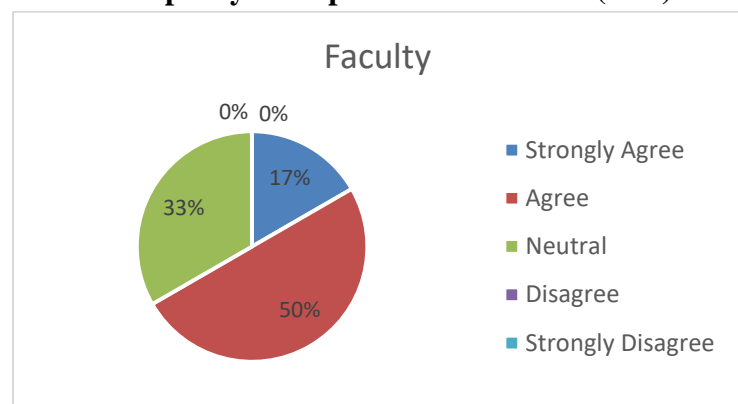


Figure 8-10. Responses of stakeholders for the question “Performance indicators are the criteria for promotion/up-gradation (7.12)”

8.2 Academic Staff Development

Department of Computer Science and Engineering holds training programs, organizing/participating seminars/workshops a, provisioning research support for continuous improvement of the academic staffs. Also, the department sends faculties to other universities for training purposes to modernize teaching methods and improve professional skills.

8.2.1 Improving Learning and Teaching Skills (ILTS):

The ILTS program is a praiseworthy initiative taken by UAP in order to train the teachers to learn and teach, so that they can be better learners and teachers in the future. Knowledge is an asset that can never diminish, but it needs to be taken care of in order to spread effectively to the students/ the future generation.

With a view to improve the overall quality of the teachers, UAP authority launched the Improving Learning and Teaching Skills (ILTS) program on May 2017. The course was planned by Prof. Dr. M. R. Kabir, the honorable Pro Vice Chancellor of UAP. It was a 30 hours course with duration of 1.5 months. Total 20 faculties from all the department of UAP were nominated to attend this program. The program was led by Prof. Dr. M. R. Kabir and he was associated by 3 others faculty members.

The whole course was divided into several segments including lectures, presentation by participating teachers, lectures on Outcome Based Education (OBE), a special workshop, appearance of two experienced faculty members as guest lecturers and finally a closing and certificate awarding ceremony.

The lectures were given on role of teachers of today, qualities of an effective and creative teacher, how to prepare for an upcoming lecture, how to grab students' attention in the class i.e. how to make a class interactive etc.

8.2.2 Research Support

University of Asia Pacific provides research support for publications of faculty members for international journals and conferences. The following table shows various aspects of research and extension services that have been evaluated by the faculty members. It demonstrates that UAP has a good policy regarding this matter.

Table 8-2. Aspects of Evaluation related to Research.

Aspect of Evaluation	Average (From faculty)
1. The entity has a well-defined research and development policy (8.1)	3.80
2. Mechanism exists for engaging the students in research and development (8.1)	3.95
3. Teachers always take initiative to hunt research fund for smooth running of the research (8.1)	3.83
4. The entity has a community service policy (8.3)	3.87

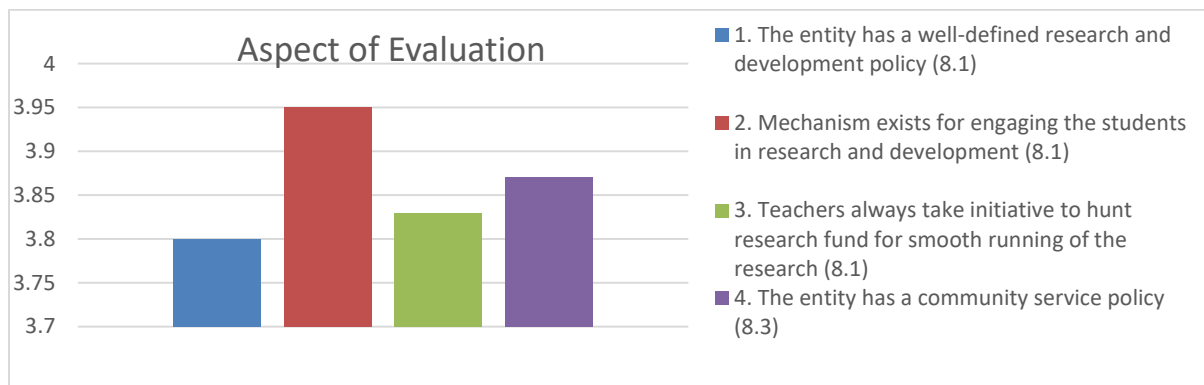


Figure 8-11. Aspects of Evaluation related to Research.

8.2.3 Organizing Workshops/Seminars

Faculty members are involved in organizing seminars or workshops inside the university related to Computer Science and Engineering fields.

8.3 Peer Observation

Peer observation means a process in which colleague or other nominated individual is invited to observe one's class or way of doing a particular job and give feedback. It's 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. It also helps experienced staffs to share 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.

Though UAP does not have formal peer observation, but informal peer reviews through comments and feedbacks on faculty and student research are received in abundance in different meetings, seminars, workshops etc. and is very common practice in the university.

8.4 Career Development

Career development provides staffs with opportunities to build productive and satisfying careers while contributing to the achievement of the university's mission. Research publications requirements, conducting workshops and seminars, attending national and international conferences both home and abroad are ways of self-improvement and they encourage lifelong learning. It results in increased job satisfaction, enhance capabilities and higher performance. UAP has a nice policy in this regard. University always motivates its academic staffs for arranging workshops, seminars and provides financial support for attending National and International Conferences.

8.5 Key Performance Indicators (KPIs)

Well-defined KPIs may act as a source of motivation and means to ensure accountability of staff. UAP believes that institution should not be confined to producing graduates in terms of quantity only, rather, it should emphasize on producing graduates who will embrace national and international recognition and provide significant contribution to socio-economic development. Similarly, academic staffs should not limit their activities within self-development by research and publications only. Rather, teaching efficiency should be measured based on student evaluation and peer observation, contribution to skill development of the students, quality teaching learning.

University may use Teaching Performance Indicators (TPIs) and Research Performance Indicators (RPIs) of the teachers as KPIs. UAP has the provisions of KPIs as follows.

8.5.1 Teaching Performance Indicators (TPIs)

The teacher evaluation for given below has been designed by University of Asia Pacific to seek a feedback to strengthen the quality of teaching-learning environment and to look for opportunities to improve teacher's performance in classroom engagement with students to bring excellence in teaching and learning. It also includes non-teaching performance.

**Form: Faculty Evaluation report (By the Head of the department) for
regularization and annual increment**

UNIVERSITY OF ASIA PACIFIC

Department of

To be filled by the Dean /Head/Coordinator

Assessment Period to

1. Name of the Faculty Member :
2. Designation :
3. Date of joining :
4. Teaching performances : Excellent/Very Good/Average/Poor
5. Examinations graded on time : Yes/No
6. Standard of question : Standard/Average/Poor
7. Non-teaching performances : Excellent/Very Good/Average/Poor
8. Maintained office hour (Minimum 40 hours/Week) : Yes/No
9. Course(s) offered by the Faculty Member:
 - (a) Total credit hours taken per semester (Spring 2017..... Fall 2016.....)
 - (b) Total contact hours taken per semester (Spring 2017..... Fall 2016.....)

Spring-2017 Semester:

Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____

Fall-2016 Semester:

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

10. Coordinating Student activities, Seminar/Workshop, Co-curricular activities:

11. Researches and Publication:

12. I strongly / I recommend /don't recommend for his/her Regularization/ Annual Increment.

Date:

Signature of the Dean / Head /Coordinator

Form: Self-Assessment report (By the faculty) for regularization and annual increment

UNIVERSITY OF ASIA PACIFIC

Department of

Self-Assessment Report

Assessment Period:

1. Name of the Faculty Member :
2. Designation :
3. Date of joining :
4. Teaching performances : Use of Board/Marker (%)
OHP (%),
Multimedia (%)
Class Notes etc. (%)
5. Examinations graded on time : Yes/No
6. Question submitted on time : Yes/No
7. Student Evaluation (if any) : Excellent/Very Good/Average/Poor
8. Maintained office hour (Minimum 40 hours/Week) : Number of hours.....
9. Course(s) offered by the Faculty Member:
(a) Total credit hours taken per semester (Spring 2017..... Fall 2016.....)
Total contact hours taken per semester (Spring 2017..... Fall 2016.....)

Spring 2017 Semester:

Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____
Course No. _____	Course Title _____	Cr.H. ____	Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Fall-2016 Semester:

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

Course No. _____ Course Title _____ Cr.H. ____ Co.H. ____

10. Development of Courses with their names:

11. Development of Laboratories with their names:

12. Regular submission of Course Instruction Book : Yes/No

13. Development and /or offering of Seminar/Workshop with their names:

14. Involvement in UAP Committee(s)/Sub-Committee(s) with names :

15. Involvement of Student Co-Curricular and Extra –Curricular Activities:

16. Research and Publications (within the period):

17. Guidance of Master's Thesis and /or Project Report (if any): Number of Students.....

18. Future Work Programme for the Department:

19. Any other duty assigned by the Head of the Department/Authority:

20. How would you rate yourself among your colleagues? Top 10% 30% 50%

21. Additional Comments (if any):

Signature of the Faculty Member

Date.....

8.5.2 Research Performance Indicators (RPIs)

RPI is another criterion of the range of parameters representing a measure of the extent to which a staff member is performing in a certain quality dimension. UAP also has a provision to evaluate academic staff's research and publications activities within a specified period. It is covered in the self-assessment report form for faculty evaluation provided in Section 8.5.1.

8.5.3 Instructor Survey Questionnaires from the Students

This is another good criterion to evaluate the performance of the faculty members of the department. The questions are designed to reflect the students' opinion about a teacher teaching a particular course. The form is given below.

Form: Faculty and course evaluation form (By the student\0

Instructor
made
effective
use of
teaching
aids

1. Instructor was adequately prepared for the class

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

2. Instructor was able to communicate in the class effectively

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

3. Instructor was available and helpful beyond the class time

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

4. Instructor made effective use of teaching aids

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

5. Instructor was able to hold attention of the students throughout the class

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)

- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

6. The exams, quizzes and assignments covered the contents specified in the syllabus

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

7. Instructor motivated me to think more critically and simulated intellectual curiosity

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

8. Instructor encouraged to participation ,discussion and question from students

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

9. Instructor was fair in evaluating and grading the students

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)
- ☐ 1) E (Strongly disagree)

10. Instructor maintained regular class schedule

- ☐ 5) A (Strongly Agree)
- ☐ 4) B (Agree)
- ☐ 3) C (Neutral)
- ☐ 2) D (Disagree)

☐ 1) E (Strongly disagree)

11. Feedback given on the assignment was effective

☐ 5) A (Strongly Agree)

☐ 4) B (Agree)

☐ 3) C (Neutral)

☐ 2) D (Disagree)

☐ 1) E (Strongly disagree)

12. The contained specified in the syllabus for the course were actually covered

☐ 5) A (Strongly Agree)

☐ 4) B (Agree)

☐ 3) C (Neutral)

☐ 2) D (Disagree)

☐ 1) E (Strongly disagree)

13. General Comments on Instructor:



1. The
course
provided an
opportunity
to develop
relevant
learning
and
competence

☐ 5) A (Strongly Agree)

☐ 4) B (Agree)

☐ 3) C (Neutral)

☐ 2) D (Disagree)

☐ 1) E (Strongly disagree)

2. The Textbook/Reading materials used in the course were appropriate

☐ 5) A (Strongly Agree)

☐ 4) B (Agree)

☐ 3) C (Neutral)

Figure 1. Schematic representation of the experimental design. The first part of the experiment consisted of a 10-min familiarization period. The second part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The third part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The fourth part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The fifth part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The sixth part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The seventh part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The eighth part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The ninth part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period. The tenth part consisted of 10 trials, each with a 10-min familiarization period, a 10-min test period, and a 10-min rest period.

CHAPTER IX

RESEARCH AND EXTENSION

9.1 Research Policy and Program

University is not just a destination of knowledge dissemination; it is the center of knowledge creation. The ultimate purpose of higher education is to equip with the knowledge and attitude that are necessary to contribute towards the sustainable development and improvement of society as a whole. Research lays the foundation of creativity and innovation. Through research, we can come up with new ideas and solutions. These research findings widen our knowledge base and make the education more practice-oriented and effective. Research forms a bridge between theoretical knowledge and its real-world implications. Every country's progress depends on the sustainability of its socioeconomic growth and development. Creativity and innovation through research are critical in this respect.

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.

Department of Computer Science and Engineering (Department of CSE), University of Asia Pacific (UAP) aims to contribute to society through the pursuit of education, learning, and research. CSE has mandates, adequate resources, and opportunities for research. The department always encourages and facilitates research among its faculties and students. Such research work includes:

9.1.1 Faculty Research

Research works carried out by the faculty members of Department of CSE focuses on addressing and/or resolving the contemporary economic and management problems faced by the corporate world or the society. In addition to performing teaching responsibilities, faculty members of Department of CSE also involve themselves in doing cutting-edge research. To enhance the research expertise of the faculty members, the department has a unit named "The Research & Publication Unit".

The Research & Publication Unit arranges Seminar at least once in every month on various important topics on Science & Technology. Also, Research & Publication unit publishes International Journal of Computer and Information Technology (IJCIT). The first issue was published in August, 2010.

Research and Publication Club publishes a national Journal each semester named International Journal of Computer and Information Technology (IJCIT), ISSN 2078-5828. The IJCIT only publishes articles of the highest quality. It is scholarly, peer-reviewed journal that provides a forum to

the academics, scholars and advanced level students for exchanging significant information and productive ideas associated with all Computer Science disciplines. It helps the students and faculty members to improve their research capability producing quality computer professionals who can make positive contribution in the development of this country. Most of the faculty members and students of UAP are engaged to publish their researches at IJCIT.

IEERD (Institute of Energy, Environment, Research and Development)

The Institute of Energy, Environment, Research and Development (IEERD) was established at the University of Asia Pacific as a constituent research and academic institute on October, 2008. The purpose of the Institute shall be to keep pace with regional and global research of development and education in energy including clean energy, increasing energy efficiency of equipment and appliances, work on quality of materials, environment, water resources and water management and other emerging fields at the University aiming to declare the Institute as a Center of Efficiency with increasing skill of the faculty and the students. The Director of the Institute is appointed by the Vice-Chancellor from among the Professors of UAP. The Director shall be responsible for the administration and all other activities of the Institute. The Director shall be responsible for the administration and all other activities of the Institute.

The Institute has a separate administrative structure under the university administration through an Advisory Council and a Scrutinizing committee. The Advisory Council was formed with the VC (Chair), Pro-VC, Deans, Heads of all Departments and Director of IEERD. The Advisory council may consider research project proposal, academic and other programs as recommended by the Scrutinizing committee of the Institute and approve, reject or refer these back to the committee concerned for any modifications as the Advisory Council may suggest. The Scrutinizing committee was formed with the Head of the Dept. of EEE(chair), Head of the Dept. of Pharmacy, Head of the Dept. of CSE and Director of IEERD. The scrutinizing committee initially check the applications submitted by the faculty members seeking fund for research projects /Journal publication charge/conference registration fee and forward to the Advisory Council of IEERD with necessary recommendations for approving the fund.

CISP (Center for IT Security and Privacy)

CISP is the first ever center of its kind in Bangladesh. The mission of CISP is to enhance and extend the university's existing technological strength in IT, with demonstrated potential for Bangladesh. In pursuing this mission, the center will conduct interdisciplinary research on IT security, data privacy,

and trusted systems; on software for fault tolerant and dependable systems; and on product reliability. The center will hold research seminars/meetings related to security and privacy, and work under collaborations with different domestic and international universities or research laboratories. Moreover, the center is willing to research with a view to developing effective cyber security and privacy policy for our country. Furthermore, CISP plans to offer security training services to government/non-government organizations and individuals.

List of Major Research Interests of the Faculty Members

Teacher Name	Affiliation	Research Interest
Aloke Kumar Saha	Associate Professor and Head	Algorithm, Universal Networking Language (UNL), Natural Language Processing
Dr. Bilkis Jamal Ferdosi	Associate Professor	Information Visualization, Image Processing and Pattern Recognition
Dr. Md. Rashedul Islam	Associate Professor	Signal & Image processing, Feature selection schemes, Supervised and Unsupervised Machine learning, Data Clustering, Data-driven bearing fault diagnosis and prognostics, parallel algorithm/processing and GPS positioning
Dr. Md. Abdul Hamid	Associate Professor	Wireless Sensor Networks*****
Shaila Rahman	Assistant Professor	Parallel and Distributed Networking, Mobile and Wireless Network, Network Security, Cloud Computing, Sensor Network
Shammi Akhtar	Assistant Professor	Computer Network, Graph theory, E-Commerce & Web performance Technologies, Data Mining, Cloud Computing.
Dr. Muhammad Firoz Mridha	Assistant Professor	Artificial Intelligence, Machine Learning, Natural Language Processing, Speech recognition.
Dr. Shahera Hossain	Assistant Professor	Image processing/ Medical image processing/ Computer vision
Md. Akhtaruzzaman Adnan	Assistant Professor	Wireless and mobile computing and communications, E-Health Science
A S Zaforullah Momtaz	Assistant Professor	Robotics, Artificial Intelligence, Machine Learning
Molla Rashied Hussein	Assistant Professor	Data Mining, Business Intelligence and Analytics (BI&A), Big Data, Sentiment Analysis, Deep Learning, Natural

		Language Processing (NLP), Internet of Things (IoT).
Nadeem Ahmed	Assistant Professor	Big Data, Cloud Computing, Data Mining
Dr. Nasima Begum	Assistant Professor	Cryptography and Information Security, Signal and Image Processing and Artificial Intelligence
Dr. Md. Rajibul Islam	Assistant Professor	Signal and Image processing, Parallel Computing, Augmented Reality (AR), Optical Fiber Sensors for IoT
Sanjay Saha	Assistant Professor	Machine Learning, Data Mining, Big Data Analytic
Jahir Ibna Rafiq	Lecturer	Network Security, Communication, Sensor, Software Development and Quality Assurance.
Abdul Kawsar Tushar	Lecturer	Neural Networks and Deep Learning, Human Computer Interaction, Data Mining, Image Processing
Anika Anwar	Lecturer	Human Computer Interaction and Query Processing
Hanif Bhuiyan	Lecturer	Knowledge representation and reasoning, Semantic web, Augmented Reality, Recommendation and Natural Language Processing
Md. Imran Bin Azad	Lecturer	Machine Learning, Data Analysis, Bioinformatics
Gazi Md. Hasnat Zahan	Lecturer	Artificial Intelligence (Robotics, Computer Vision, Machine Learning, Natural Language Processing, Virtual Reality, Image Processing), Human Computer interaction.
Afia Afrin	Lecturer	Sensor Networks
Abdullah Al Omar	Lecturer	Network and Cyber Security, Blockchain, Cryptography
Shaheer Mahdi Jilane	Lecturer	
Akm Ashiquzzaman	Teaching Assistant	Neural Networks and Deep learning, Signal Processing, Machine learning

For a recent list of Publications from the faculty members, please see Appendix L.

9.1.2 Student Research

Bachelor of Science (B.Sc.)

The Bachelor of Science (B.Sc.) program consists of 162 credit hours spread in 69 courses and project/thesis. These courses are compounded by major, minor courses and also a project and thesis during the students' final two semesters. Fourth year first semester and fourth year second semester, these are the two semesters in which the students have 3.0 credits allotted in each for their thesis/project work. Therefore, a total of 6.0 credits are allotted for their thesis/project in their undergraduate curriculum. As a weight of six credit hours is allotted for the thesis/project, the grade obtained in internship significantly affects the CGPA. During this period, the student works under the direct supervision of a full-time faculty of the department. Students will work in groups or individually to produce high quality software in deferent languages. Students will write structured programs and use proper documentation. Every student submitting their project report has to appear before a board consisting of at least three faculty members (including the supervisor). In the board, the student has to present his/her internship project and face an oral examination by the board members.

A list of selected thesis of students for the last three semesters (Spring 2016, Fall 2016 and Spring 2017) has been included in Appendix B.

Master of Science in Computer Science and Engineering (MCSE)

MCSE program is strictly applicable for Department of CSE bachelors or EEE bachelors with proven efficiency in computer related subjects. This section describes common activities such as program and semester duration, enrollment, class schedule, registration and evaluation policy applicable for the program. Eligibility, program requirement, degree requirement and course list has been elaborated for the program in subsequent sections.

A student enrolled as a full time may take a minimum of 6 credit hours and a maximum of 12 credit hours in Fall or Spring semesters. For part time enrollment, the minimum 3 credit hours and maximum 6 credit hours in the mentioned semesters will be allowed. In Summer semester both full time and part time students may take minimum 3 credit hours and maximum 6 credit hours. Thesis registration can only be done after completion of two semesters with completion of minimum 12 credit theoretical courses.

Although the thesis need not necessarily represent a contribution to fundamental knowledge, it must demonstrate the student's ability to identify and solve an acceptable problem in the area of computer applications and to reflect the work in a document of acceptable literary quality. The appropriateness

of the topic is determined by the Board of Graduate Studies. At the conclusion of the thesis work and report preparation, the student must prepare for the presentation of the thesis.

9.1.3 Fund and Facilities

Conducting a qualitative research requires time, sweat & blood, and money. Although there is a huge scarcity of fund for research purposes all over the world, the problem is more acute in Bangladesh. Some research requires survey on hundreds or even thousands of respondents. Collecting data from a large sample often turns out to be a costly matter. Faculties also require training for conducting innovative research. For training purposes, they have to participate in different workshops or training programs organized by institutions from both home and abroad. Moreover, funding is necessary to publish research papers in journals with good impact factor or to present the research work at conferences organized by national as well as international institutions.

Table 9-1. Response of stakeholders to the related standard 8-1

Aspects of Evaluation	Students	Faculties	Alumni	Grand Mean
1. The entity has a well-defined research and development policy	3.722449	3.791667	3.333333	3.72
2. Mechanism exists for engaging the students in research and development	3.771429	3.958333	3.25641	3.77
3. Teachers always take initiative to hunt research fund for smooth running of the research	N/A	3.833333	N/A	3.833333

From the survey results presented in Table 1, it is observed that faculty members and students agreed with the statement that UAP has a well-defined research and development policy. However, the alumni remained neutral in response to this question. The weighted average judgment of relevant stakeholders also reflects a fair agreement regarding the existence of a well- defined research and development policy. Regarding the existence of a mechanism for engaging the students in research and development, students and faculty members agreed fairly, while the alumni gave a neutral opinion. The mean response of the stakeholders indicates a moderate conformity. The variation in opinions, between the alumni and students, indicates the progress of Department of CSE in advancing its research & development policy as well as improvement in mechanism for involving students in research works. When it comes to the question of the initiative taken by the teachers for hunting research fund, the faculty members agreed moderately.

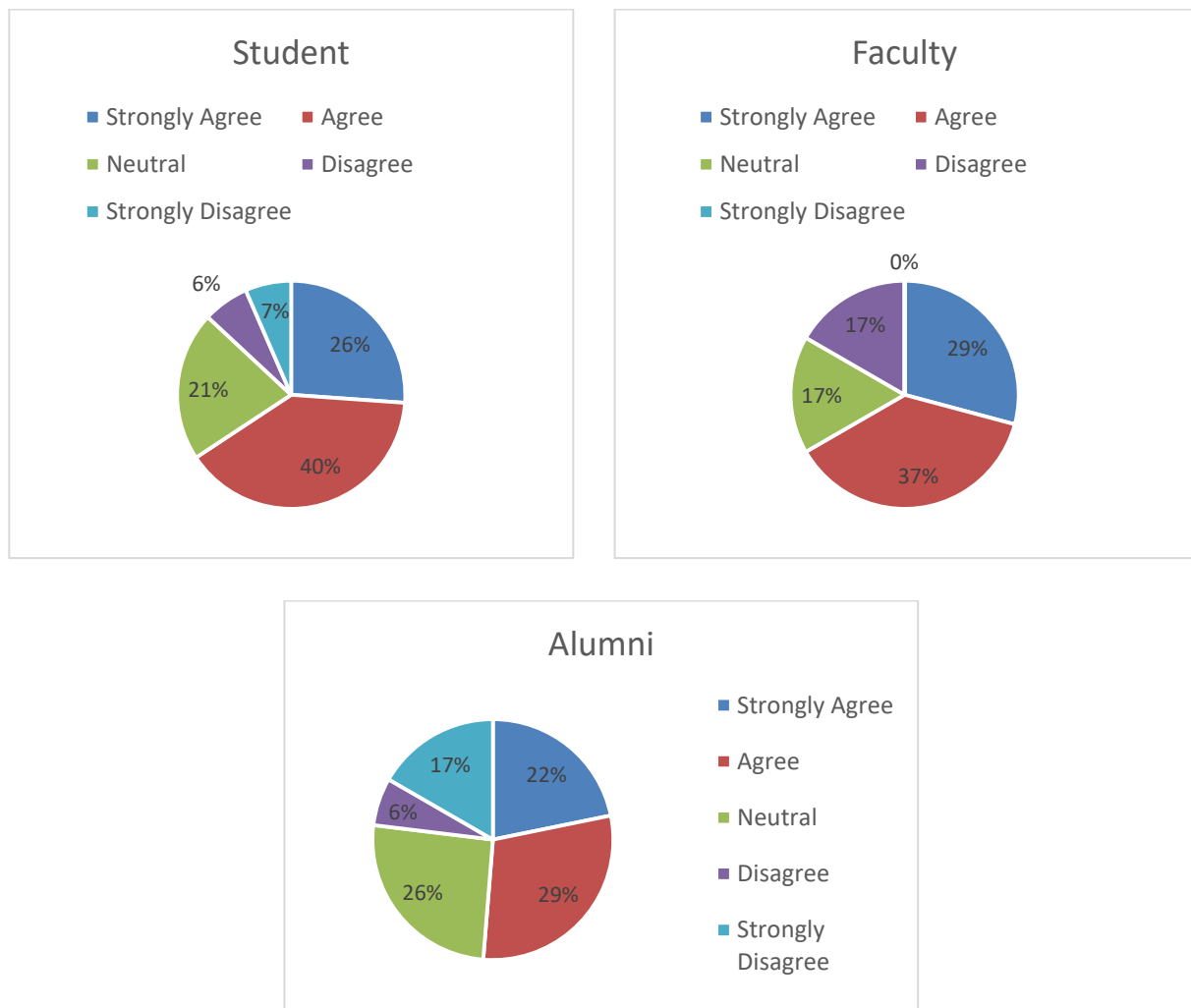


Figure 9-1. Responses of stakeholders for the question “The entity has a well-defined research and development policy (8.1)”

Figure 9.1 shows the stakeholder’s response for the well-defined research and development policy. The average faculty response for this is 3.7916 having 66% on the agreed side. The students gave an average score of 3.722 where more than 66% students agreed on the availability of well-defined research and development policy. Alumni weighted response is 3.33 having around 51% positive feedback about the point of interest.

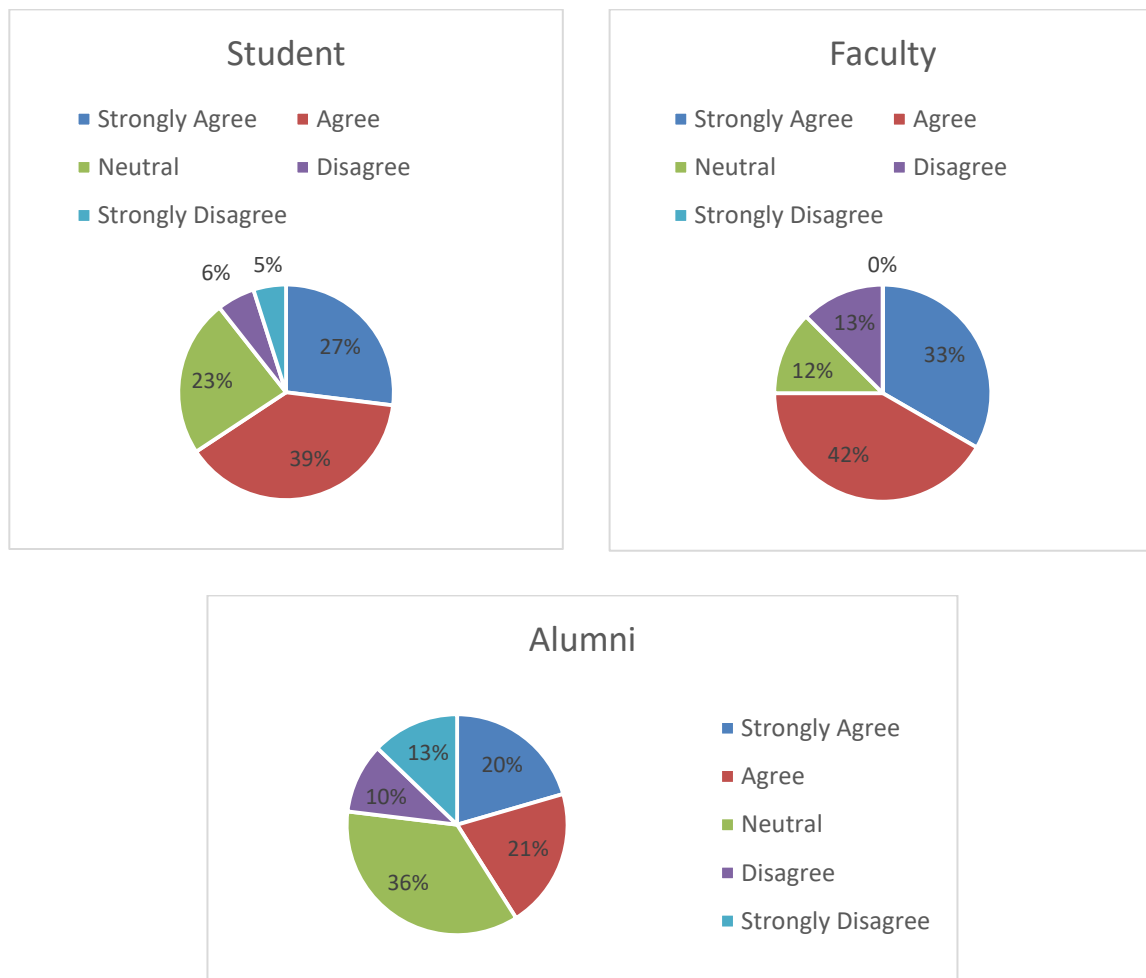


Figure 9-2. Responses of stakeholders for the question “Mechanism exists for engaging the students in research and development (8.1)”

Figure 9.2 shows the stakeholder’s response for the existence of mechanism for engaging students in research and development. The average faculty response for this is 3.96 having 75% on the agreed side. The students gave an average score of 3.771 where near about 66% students agreed on the availability of well-defined research and development policy. Alumni weighted response is 3.26 having around 57% positive feedback about the point of interest.

Standard 8-2: University should have institutional approach to explore the possibility of corporate funding through university industry research collaboration.

9.2 Research Fund

9.2.1 Central Research Fund

To promote research, the Institute for Energy, Environment, Research and Development (IEERD) provides funding. IEERD is a central research and academic institute responsible for disbursement of funding to academicians of various departments of UAP. IEERD has provision for funding of the following research expenditures:

1. Publication charge for publishing research article in reputed journals.
2. Registration fee, transportation and accommodation cost for presenting research outcomes in national and international conference / symposium / workshop / seminar / meeting.
3. Expenses for conducting Research works at UAP.

In every fiscal year, each faculty is allotted a maximum budget of taka forty thousand, which can be used for paying the aforementioned expenses.

It is the responsibility of IEERD to cater to the fund requirements of UAP for carrying out research works. In the last fiscal year (2016-17), IEERD had a total budget of taka fifty lac. For funding research projects, which involves significant cost, a faculty or a group of faculties with a valid research proposal can apply to IEERD. For funding these projects, there is no stated floor or ceiling on how much to allocate for each faculty or each department.

Paper publication Charge/ Conference Registration Fee Funding Process

Applications received from the Faculty members of the University in prescribed format with a copy of the research Article, acceptance letter and payment receipt.

The scrutinizing committee of IEERD check the following information given by the Faculty.

1. Standard/Impact Factor of the Journal.
2. Whether the Journal has (digital object identifier) DOI
3. ISSN (online), ISSN (print).
4. Standard of the Journal Standard of the Conference.

The scrutinizing committee forwards the applications with necessary recommendations to the Advisory Council of IEERD for approving the fund.

Evaluation Criteria/Process for Research Project Proposal

Project proposal received from the Faculty members in prescribed format will be initially evaluated on the basis of the following criteria:

1. Project topic: Based on Real-world problems
2. Goals and objectives of the project: Applicant must clearly describe the goals and objectives
3. Content: Applicant must include the problem analysis, methodology, practical applications Outcome: Applicant must mention the expected results.
4. The applicant must demonstrate experience for implementing the proposed activities
5. The applicant must be capable in managing projects with funding from the University.
6. Previous experience in implementing projects with funding from NGO/ Government/ any other sources.
7. Budget: Applicant must ensure that budget be relevant, appropriate with the specific objectives of the project. The budget must be prepared in BDT. The scrutinizing committee forwards the applications with necessary recommendations to the Advisory Council of IEERD for approving the fund for the projects.

9.2.2 Research Facilities

Research cell of our department, The Research & Publication Unit, also facilitates research by organizing meetings and sharing the knowledge gained by the faculties from their research or training experiences. The unit blends the knowledge and opinion from faculties of different orientations (i.e. machine learning, networking, image processing). A number of research papers came into existence because of the knowledge-sharing cell. The research unit has been most instrumental for the newly appointed faculties for starting their endeavor into the world of research.

9.2.3 Research Lab and Software Facilities

Department of CSE is equipped with a computer lab and circuit labs for catering research needs of undergraduate or postgraduate students. The computers are equipped with the recent configuration to run any research related software on them. The curricula of different programs incorporate courses, which are designed to develop the analytical skills to work with the software packages.

9.2.4 Fund Hunting/Collection

Financial assistance is an intrinsic part of a research. IEERD, constituent research and academic institute of UAP, is responsible for providing funds to carry out the research activities. To avail funds from IEERD, a faculty has to apply towards the Director of the institute. Upon receiving the application, a scrutinizing committee reviews the proposal carefully. If the application fulfills the expectation, the scrutinizing committee recommends for approval and forwards the application to the advisory committee. Advisory committee makes a final review of the research proposal. If the head and the members of the committee are satisfied, they grant the financial assistance.

To secure financial assistance for training, seminar or workshop from the departmental facility, the researcher has to apply to the head of the department. Upon receiving the application, the head reviews the research proposal and recommends for approval to the Office of the Registrar. Whenever applicable, the Office of the Registrar makes an evaluation of the proposal and grants the application for funding.

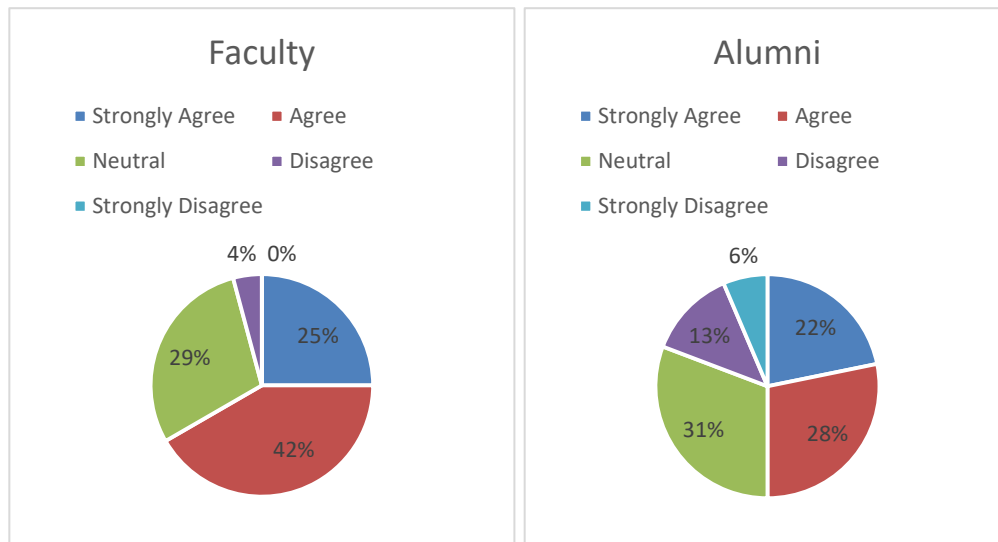
9.2.5 Dissemination of Research Findings

Conducting a research will serve no purpose if its outcomes do not reach to the proper audience. Dissemination of research findings is a critical factor for every researcher. Department of CSE has always been taking initiatives to transfer the findings of the research to the relevant audiences. CSE in its effort to reach out to the audiences has taken an initiative to publish an international standard journal.

Table 9-2. Response of stakeholders to the related standard 8-2

Aspect of Evaluation	Faculty	Students	Alumni	Grand Mean
The entity has a community service policy	3.875	3.791837	3.461538	3.45

As seen from Table 9.2, the students and faculty members moderately agreed about the existence of community service policy. However, the alumni were somewhat undecided in response to this question. The typical judgment of the stakeholders reveals a fair agreement. These views from the participants reflect the progressive involvement of Department of CSE in community service policy.



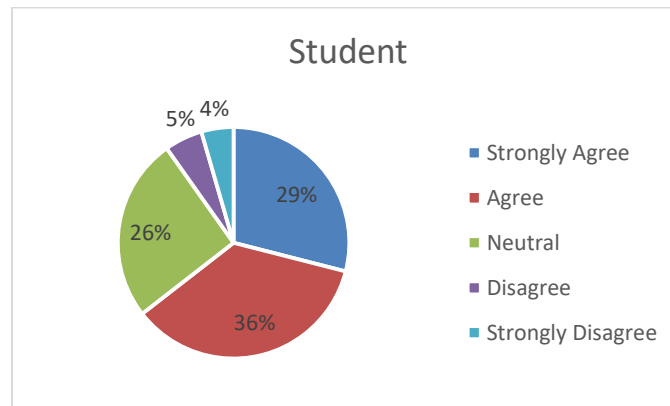


Figure 9-3. Responses of stakeholders for the question “The entity has a community service policy (8.3)”

Figure 9.3 shows the stakeholder’s response for the community service policy. The average faculty response for this query is 3.875 having 67% on the agreed side. The students gave an average score of 3.79 where near about 65% students agreed on the availability of well-defined research and development policy. Alumni weighted response is 3.46 having around 50% positive feedback about the point of interest.

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.

While conducting the research, the faculty members of Department of CSE regularly interact with each other regarding their work. While doing this, the faculty members share and learn from one another, which helps them to get suggestions from a diverse group of researchers.

Department of CSE also organizes various seminars and workshops to disseminate the research findings. Several veteran researchers from other institutions also join those programs. We also invite people from the business world to participate in those programs. Business leaders and/or representatives provide a pragmatic insight of the real-world situation. The research outcomes also help the people from the industry to solve their problems or develop their organizations. Knowledge is one of the few things that increase by sharing. Dissemination of the knowledge, created through research, is also required to ensure the greater good of a country. Department of CSE thrives for excellence and ingenuity in terms of research activities which can be significantly noticed from the department’s research facilities and funding facilities.

CHAPTER X

PROCESS MANAGEMENT AND CONTINUOUS IMPROVEMENT

10.1 Existing System for Quality Assurance

Continuous quality assurance is an intrinsic component of academic teaching. The diversity of social demands, enhancement of higher education across the globe and demographic changes pose challenges to the academics to come up with continuously innovative systems to impart knowledge. For ensuring quality education, defining, developing, and improving processes of education systems are imperative. This chapter describes the process management and continuous improvement strategies applied and further incorporation needed at the Department of Computer Science and Engineering (CSE), University of Asia Pacific (UAP).

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

The academic calendar is followed by the entity and the University in order to progress systematically. Due to this systematic approach, faculty members, students, and administration can execute their respective functions effectively and efficiently.

10.1.1 Admission Policy

CSE follows well-defined admission criteria for BSc program which include performance in admission test, HSC & SSC and equivalent academic records. The rigorous admission procedure is comprised of 1) Written test, 2) VIVA-VOCE conducted by a board consisting of faculty members from different disciplines. The newly admitted students and parents/guardians are welcomed and UAP introduced by the central authority through a grandeur orientation session. Following central orientation, students participate in another orientation session in their respective department organized and presented by the faculty members. Students are provided with a clear understanding of their responsibilities as students and policies & rules regarding all necessary issues presented by faculties.

10.1.2 Question Moderation Policy

An internal Question Moderation Committee comprising seven members from different disciplines headed by a Convener follows stringent guidelines for moderation of question papers. The guidelines are based on Bloom's taxonomy is applied in assessing each question paper. The Convener of the

Moderation Committee holds the responsibility to expedite the moderation process and ensure that guidelines and standards are met. All the faculty members are notified through emails to send a soft or hard copy of the question paper by a stipulated date. Question papers are distributed by the Convener among the moderators according to their specialty and requested to return by a designated deadline after moderation. The moderated question papers are then returned to respective course teachers to make necessary corrections if any. After receiving the corrected question papers moderators once again check and return to the course teachers or to the Convener of Examinations. The examiners and moderators are also required to submit separate templates to the Convener, Moderation Committee, along with the finalized question papers.

The following factors are ensured by the moderators which lead to the consistency of fair assessment of students.

1. Linkages between Learning Outcomes (LO) and questions
2. Coverage of materials included in the course curriculum
3. Appropriateness of question according to the standard of the course level
4. Application of theories in real life situation
5. Adherence to prescribed question format by the examiner.
6. Identification of grammatical errors or spelling mistakes
7. Appropriateness of marks distribution
8. Total marks add up to the percentage required for Mid-term or Final examination.

This uniformity leads to consistency of final assessment of students from level to level and promotes bloom's taxonomy among teachers for fair judgments of the course.

10.1.3 Examination Policy

UAP strives to maintain strict discipline in the examinations. The offenses and punishments are clearly stated on the front and back of each answer script so that students are aware of the consequences of any offense or misconduct. CSE has taken some additional measures, to further facilitate smooth conduct of examinations (Appendix IV). The Examination Committee arranges seat plan for all the exams in such a way that students from the same batch or any particular course do not sit adjacent to each other. Further, the committee circulates roster amongst the faculty members of invigilation well ahead of the examination date. The Examinations Committee devised a set of guidelines for invigilation which is practiced regularly and also monitored by the Convener of Examinations. (Appendix I)

10.1.4 Evaluation Policy

Towards the end of every semester, students evaluate each and every course instructor on-line by filling up a structured questionnaire; providing information on teaching methods and evaluation process of a particular course and respective faculty member. The advisors of each and every batch along with the course instructors remind the students to participate in the evaluation process. Admit cards for the final examination are not issued unless and until the evaluation forms are completed online.

Guidelines for checking answer scripts have been developed by the Examination Committee, which is followed by the examiner. Scrutiny is done by following the standard of the templates developed (keeping the UGC standard in mind) by the department. The results submission administered by automation procedure adheres to the strict deadline set by the central authority.

10.1.5 Internship Policy

With the view to expose students to the corporate scenario, the department has developed well defined and clear internship guidelines. Every student is assigned an advisor according to his/her specialization. The supervisor guides the intern all the way up to the defense of the report. All the internship records/papers are well documented at CSE, UAP. There is a prescribed format for Internship report writing which is available on the website. The report submission and defense dates are notified in clear terms by the advisors. Different boards are formed consisting of 3 members including the supervisor. Upon agreement by all the members of the defense, the final grade is submitted to the CSE office for submission to the Controller of Examinations.

The conducted survey targeted the responses of the faculty members on the questions 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 stood at a point of 4.16, where a point of 4 denotes "Agreed" and a point of 1 denotes "Strongly Disagreed". The survey results confer the compliance of continuous quality improvement of the department.

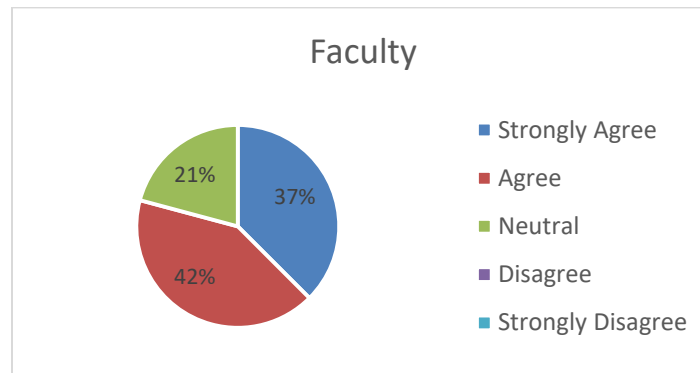


Figure 10-1. Responses of stakeholders for the question “The entity always acts in compliance with the decision of the university regarding continuous quality improvement”

Table 10-1. Response of faculty members to questions related to Standard 9-1

Aspect of Evaluation	Academics
The entity always acts in compliance with the decision of the university regarding continuous quality improvement	4.16

Standard 9-2: The University or the entity conducts self-assessment following a cycle, develops a 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 entity continually and systematically reviews the effectiveness of the procedures to meet the objectives.

Self-assessment works as a foundation for any university or entity to develop a strategic plan, identify loopholes, take corrective measures and implement plans. In the process of quality improvement Self-Assessment has the most crucial role to play as a guideline and to pave the way to overall enhancement in the continuous improvement endeavor. Self-Assessment has been a preeminent general issue for the university and for the department in particular. As a step towards continuous assessment, the University has formed a body named Strategic Planning Committee (SPC) consisting of members from the pool of Board of Trustees. The committee holds meeting every month to assess, explore, and expedite strategies to keep up with the challenges of the industry. All the departments of the university are bound to submit any developed strategies, ideas and thoughts to this

committee for approval. Upon approval of SPC, respective department acquires the authority to implement the developed strategy (s) for improvement of the department.

CSE has come up with a short-term strategic plan from time to time. Followings are accomplishments of some of the strategies that have led to continuous assessment and improvement of the department to some extent. Access to Emerald and Pro Quest database are a click away for the use of CSE. Faculties have participated in Training & Workshop programs in Singapore and India. A continuation of the knowledge application from such programs, faculties are in the process of coming up with a research paper in the near future. All the lectures are being delivered in English as per the decision was taken in the short-term action plan. The revised curriculum after approval of the higher authority was sent to UGC. The curriculum was sent back to CSE for minor changes and at present is being evaluated by UGC for final approval. CSE website has been upgraded as planned. However, further up gradation is in the process and will be an ongoing operation.

Filing of different papers, templates, documents is underway. From the beginning of the formation of SAC, till-date the CSE has been arranging workshops, seminars, and discussion sessions on Outcome Based Education (O.B.E), Self-Assessment (SA) and quality assurance improvement issues. To ensure the quality of teaching and learning environment, the IQAC and CSE organize workshops for academicians, non-academic staff, and messengers.

After approval of SAR by the Peer Review Panel, the path to improvement and concrete direction towards the enhancement of the program will be underway. CSE will share the findings and feedback of the Peer Review Panel with faculty members and explain the justifications for different steps that will be imminent for the continuous improvement of the program. A systematic review approach at a regular interval will be implemented to evaluate the success of the program.

To motivate and establish the need for continuous quality improvement Team Building Workshops and Seminars will be administered for academic and non-academic staff. The Curriculum Committee will play a vital role in changing and upgrading the curricula to meet the challenges and demand of the business world today and education industry.

10.2 Improvement Plan

Upon review by the Peer Review Panel, CSE will prepare improvement plan and incorporate future strategies based on SAR and suggestions offered by the panel. The findings based on secondary information, experiences, observation and survey results will pave the way to meet continuous

improvement process. The stakeholder's feedback will also help to pinpoint the areas where much attention is needed.

The description of improvement areas, initiatives needed to ensure and enhance quality education will be part of the Improvement Plan. The entity must acknowledge and understand that improvement plan is developed for one-time use only, the rather quality assurance cycle is a continuous process and all parties involved must engage, contribute and appreciate the outcome of this valuable venture.

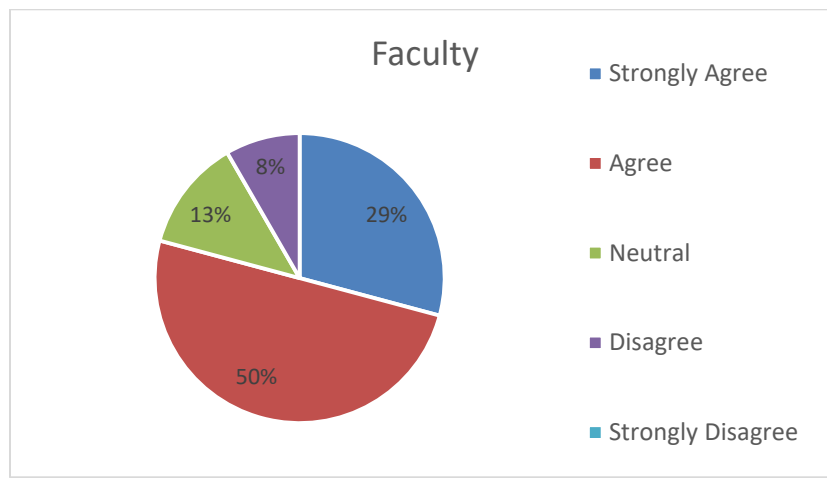


Figure 10-2. Responses of stakeholders for the question “Academic programs are reviewed by the entity for the enhancement students’ learning”

The conducted survey covered the evaluation of the Alumni, the students and the faculty- members on one question on *Standard 9-2: "The entity embraces the spirit of continuous quality improvement"* and two questions based on *Standard 9-3: "Academic programs are reviewed by the entity for the enhancement students’ learning"* and *"The entity ensures a usual practice for students’/ Alumni’s feedback as a culture"*.

The response among faculty, the question on Standard 6-2, annotated a point of 4.39 out of 5 and that for the first question for Standard 6-3 annotated a point of 4.22, where a point of 4 denotes "Agreed" and a point of 5 denotes "Strongly Agreed". The result for the second question on Standard 9-3 stood at a point of 4.00, where a point of 4 denotes "Agreed". The teachers think that spirit of continuous quality improvement and review of the academic program is maintained rigorously as is the usual practice for students’/ Alumni’s feedback as a culture.

Table 10-2. Response of stakeholders to questions related to Standard 9-2 and 9-3

Aspects of Evaluation	Academics
The entity embraces the spirit of continual quality improvement.	4.39
Academic programs are reviewed by the entity for the enhancement students' learning.	4.00
The entity ensures a usual practice for students'/ Alumni's feedback as a culture.	3.72

CHAPTER XI

SWOT ANALYSIS

A SWOT analysis is a structured assessment of an institution's strengths, weaknesses, opportunities, and threats. SWOT is an acronym that stands for Strengths, Weaknesses, Opportunities, and Threats. Strengths and weaknesses are internal to the company and can be changed over time with proper strategies. Opportunities and threats are external dimensions and organizations have little control over these factors; however, businesses must adapt and adjust to different situations by administering applicable strategies.

Any organization can perform SWOT analysis at any time to assess a changing environment and develop strategies accordingly. Thus, CSE decided to go through brainstorming sessions to identify the factors affecting Department of Computer Science and Engineering in each of the four categories mentioned above. After completion of brainstorming sessions, the entity finalized the SWOT analysis by listing the factors in each category in order of importance as identified by the team members.

11.1 Strengths

11.1.1 Governance

- UAP has well-structured organizational rules depicting a clearly described structure and organizational relationships.
- Policies, Vision, Mission, Program Educational Objectives, Program Objectives, and Code of conduct are designed by proficient authoritative instructions.
- The University runs a website having all the information and procedures, maintained by the authority.
- Opportunity of research grants helps the faculty members to be motivated about the research.
- Students have opportunity to get awards, scholarships, prizes and medals through a very competitive process which builds them up for a competitive work life.
- Feedback are periodically attained and managed to get useful insights in making important decisions like upgrading course curriculum.
- Departmental Staff (Admin), Faculty collaboration is well managed by them.

11.1.2 Curriculum Design and Review

- University has a well-defined curriculum to conduct the courses.
- Curriculum has been designed and maintained by a committee; the procedure of curriculum design is dynamic and is being changed over time to keep pace with international institutions around the world.
- Change of curriculum doesn't affect the running students, applied to the curriculum of new students which attains the integrity of syllabus.

11.1.3 Student and admission

- Admission policy ensures the intake of quality students.
- Department of CSE has a well-defined admission policy, students having at least GPA of 8.00 (aggregated: S.S.C and H.S.C.) will be able sit for the admission test.
- Students are evaluated by a very competent committee of department of CSE, they ensure integrity and accountability of the process.

11.1.4 Teaching, Learning and Assessment

- Outcome Based Education or OBE is being followed by CSE.
- Department ensures very friendly environment among the faculty and students to ensure the proper guidance for the students.
- Integrity of evaluation maintained in the assessment policy and being followed by the faculty members.

11.1.5 Staff & Facilities

- CSE has 25 full time and 6 part-time faculty members.
- UAP has a transparent, fair, appropriate and properly documented policy for recruitment and other facilities.
- UAP has an attractive pay scale with the scope of time to time revision which includes salary, festival bonuses, provident fund and gratuity for academic and non-academic staffs.

11.1.6 Physical Facilities

- UAP has its own campus at Green Road, Farmgate.
- Class rooms and Laboratories are adequate in number, well-spaced, equipped with teaching and learning aids.
- CSE holds very well equipped and functioning laboratories for the students to keep pace with the modern technology, which is being used for lab classes and also for research purpose.
- There are separate rooms for professors, associate professors, assistant professors and cubicles for lecturers, conference room and lounge with modern facilities.
- UAP has a well-equipped central medical center to meet medical emergency.
- There is a spacious and well ventilated cafeteria to provide foods at an affordable rate.

11.1.7 Student Support Services

- To provide necessary student support UAP has a separate directorate named “Directorate of Student Welfare (DSW)” . DSW is in charge of organizing co-curricular activities, personal & professional development programs and providing financial support for underprivileged students.
- Department has Career Development Club which organizes several career oriented workshops, seminars, and training to support students in case of industry exploration.
- Students have a very strong team of faculty members who are really encouraged to organize National and International programs (e.g., NCPC, ICPC [2016 & 2017], ICCIT) in campus premises so that students get an organization view of different units or industry.

- Each student is assigned to an advisor throughout his/her total varsity life to get a supervised way to complete B.Sc.
- Department does have an active alumni association.

11.1.8 Research and Extension

- *The Institute for Energy, Environment, Research and Development (IEERD)* is the central research institute of UAP to facilitate research & extension. The faculty members receive 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.
- Workshops on research methodology, paper writing & writing tool introduction (e.g., Latex, MS office), field based workshop (e.g., Machine Learning, Neural Network) are organized by departmental Research Unit.
- Center for IT Security and Privacy (CISP) is another unit to hold Workshops on the field of Security. Highly profiled faculties who work on security give the lead of this Center.
- All the thesis groups are asked for a paper to be submitted in the department as well as in the International journals and conferences.

11.1.9 Process Management and Continuous Improvement

- To ensure internal quality, CSE has standard policies for admission, question moderation, examination, grading, internship and evaluation

11.2 Weaknesses

11.2.1 Governance

- UAP lacks adequate staff at different administration levels.
- Code of conduct is not well practiced among the staffs.
- Staffs lacks in efficiency in carrying out their responsibilities as well as behavioral understanding.
- Faculty members have to be concerned about administrative work too which results in pressurized environment for academic responsibilities for faculties.
- Feedbacks from industry and stakeholders are being difficult to obtain.

11.2.2 Curriculum Design and Review

- Industry collaboration (e.g., Internship) lacks in the curriculum design.

11.2.3 Student

- Absence of Quality assurance system in the department.

- Achievement of students are not being evaluated or managed by the department itself.

11.2.4 Teaching Learning and Assessment

- The number of full time faculty members is not enough so the department depends on some adjunct faculty members of public universities and renowned corporate houses. The adjunct faculty members are not able to allocate enough time for student counseling and guidance regarding the subject matter.
- Teacher student ratio is 1:27, which is not a desired ratio for improvement.

11.2.5 Staff and Facilities

- The pay scale of the faculty members are not equivalent to the industry, increment of salary is based on seniority/service year which somehow demotivates the new and active faculty members to continue service.
- Lack of staff development center.

11.2.6 Physical Facilities

- Library is not enriched with higher study related books.
- Absence of high speed internet and Wi-Fi.
- Students don't have transportation and accommodation facilities.
- Institutional Ambulance is not present.
- Gymnasium is not present.
- No outdoor sport field.

11.2.7 Student Support Services

- Involvement in community services is not well managed.
- Absence of placement unit.
- Departmental club is not adequately active to prepare them for a good communication skill.

11.2.8 Research and Extension

- No digital library (e.g., IEEE explore) is present for the motivated researchers and student.
- Practical implementation of finding of researches is not being funded by UAP.
- Patent system is absent.
- Faculty members are preoccupied with administrative responsibilities which hampers research opportunities.
- There is no Professor in the department.

11.2.9 Process Management and Continuous Improvement

- Students' evaluation of faculty members is not being observed well to act upon.

11.3 Opportunities

11.3.1 Governance

- UAP has scope for improvement of administrative performance by recruiting more efficient and experienced personnel at different levels of administration.
- UAP website could be more dynamic as it has enough space to show dynamicity.
- Code of conduct could be followed properly if DSW (Directorate of Students' Welfare) form an active committee.
- Assessment process could be more practical if it will be moderated by senior faculties.

11.3.2 Curriculum design and Review

- Industry professionals could be a part of curriculum design committee. Active participation of industry professionals will pave the way of industry-academic collaboration.
- Scientific or technical group could be added so that the research areas/famous topic at least should be included in the curriculum.
- Research opportunities are not being addressed in the curriculum.

11.3.3 Student

- Scholarship or Grant could be increased in amount for each qualified student.
- Academic record of students could be more user-friendly.
- Professional counseling service should be introduced to the department.
- Notice for the students could be maintained frequently by the department.
- Viva procedure of the newly admitted students could be more effective.'

11.3.4 Teaching Learning and Assessment

- OBE or outcome based education should be maintained properly and more training on this topic should be organized.
- Collaboration with the faculty members who are on study leave should be maintained. This will be fruitful for the highly motivated students.
- Lab technicians could be more competent or more experienced lab technicians should be hired.
- Webinars or web class should be introduced.
- Each semester, there should be a study tour for the refreshment of students as well as of the faculty members.
- Improvement of Co-curricular activities.
- Increase of teachers' yearly allowance for academic expenses.

11.3.5 Staff and Facilities

- Pay scale should be moderated so that the experienced and renowned academicians could be involved as UAP faculty.
- Award policy should be introduced to inspire both the academic and non-academic staffs.
- Department should have a faculty common room.
- Academic performance could be maintained by a formal and documented peer observation.
- Internet speed should be dedicated (High-speed) for faculty members.
- There is no research lab, dedicated to the faculty/students.

11.3.6 Physical facilities

- UAP has purchased 3 acres of land in the planned city named “Rajuk Purbachal” where the campus can provide other facilities including open field and residential facilities.
- A gymnasium with modern equipment has been proposed for the students.

11.3.7 Student Support Services

- Alumni-Student collaboration should be ensured by arranging reunions.
- Hall should be built by UAP.
- DSW office should be more active to be known by the students, they need to circulate and recruit some volunteers among the students to regulate the smooth activities.
- Internship opportunity should be introduced.
- More MoU should be signed to incorporate with the industry.

11.3.8 Research and Extension

- Faculty and students should be given access to any popular research digital library (e.g., IEEE Xplore)
- Research facilities should be increased.
- Departmental journal should be managed properly.
- Building good relationship with the fund providing universities and organizations.
- Diverse method should be introduced in case of thesis and project.
- Published works should be given exposure from the department.
- Patent system should be introduced.

11.3.9 Process Management & Continuous Improvement

- By continuous quality improvement, CSE will be able to meet the upcoming challenges and demands of the IT world.

11.4 Threats

11.4.1 Governance

- Satisfaction of students and faculties could be a threat if other institution provides better governance.

11.4.2 Curriculum Design and Review

- If the industry demand will not be fulfilled by the students' competence level it will make a huge threat for the department to have students.

11.4.3 Student

- Promotional strategies of other private universities are threat to get students.
- There is an overall decline in the education standard of prospective candidates hailing from national curriculum based education.
- Uniqueness of other private universities will attract more students to them.

11.4.4 Teaching Learning and Assessment

- Experienced senior faculty members are required to improve the quality of department otherwise it is difficult to maintain with respect to the demand.

11.4.5 Staff and facilities

- Lucrative facilities should be offered because other private universities are having a very high scale payment.

11.4.6 Physical Facilities

- Some of the private universities have already started their operation in a permanent campus with full-fledged facilities.

11.4.7 Student Support Services

- Other private universities are maintaining a very highly profiled alumni association which enough strong to stay by the side of any hazardous situation.

11.4.8 Research and Extensive

- Other IT schools are emphasizing on industry exploration, CSE, UAP is lagging behind with respect to them.
- Absence of funding from other organizations means other universities are getting more benefits than UAP.

11.4.9 Process Management and Continuous Improvement

- Some of the private universities are already in the process of quality improvement system which may gain them first mover advantage.

CHAPTER XII

CONCLUSION AND IMPROVEMENT PLAN

12.1 Improvement Plan

In any educational institution Self-assessment is one of the vital perimeter in order to understand the effectiveness of any particular program. The current self-assessment is conducted for the Computer Science (CSE) and Engineering program of University of Asia Pacific (UAP). This self-assessment report (SAR) first presents an overview of UAP and CSE with a particular focus on the CSE program – its vision and mission, program educational objectives (PEO), and program outcomes (PO), etc. This is followed by a detailed enumeration and in-depth analysis of the nine dimensions that encompass a holistic view of the entire teaching-learning process relating to this program. These dimensions 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. The report is culminated by highlighting the strengths, weaknesses, opportunities and threats (SWOT) under each of these nine dimensions. In order to elicit their opinions regarding these nine aspects and other relevant issues, five stakeholders, namely, students, academics, non-academic staff, alumni and employers, were surveyed. A total of three hundred and Fifty-five respondents participated in this study.

Moreover, regarding this SAR, a series of team building workshops and meetings were organized by the department for conducting stakeholder surveys. In addition, to gather first-hand information on pertinent topics and in preparing this SAR against the standard criteria as prescribed in the self-assessment manual. All the faculty members extended their fullest support in this regard. The salient features of the findings are highlighted below:

1. A major revision of the existing curriculum has been proposed taking into consideration of the alumni and the employers. The updated curriculum is expected to be effective starting from the semester of spring 2018.
2. A number of templates have been developed and used in setting exam questions mapping the LOs and the six levels of cognitive domains of Bloom's taxonomy, moderation of question papers and the scrutiny of the answer scripts. Besides, individual course files are being maintained in the department.
3. In order to facilitate faculty research and development, several steps has been taken by the authority. Faculty members regularly conduct studies, publish articles in journals, and present their papers in conference proceedings.

Strategic outline for the further improvement of the department:

A tentative sketch for the further improvement has been prepared but the deployment of this plan will execute after the final peer review. The amelioration outline has been developed regarding the analysis of standard criteria placed in chapter 1 to 10 and in the following chapter the SWOT exercise is presented. Here it is need to mention that based on the priority the immediate improvement will be undertaken. However, many important improvements will follow only after certain changes are made within the University framework and have not been drawn here.

Improvement Plan (next five years):

1. Develop course objectives for courses of each semester and improve assessment procedures as per Academic Council (AC) decision.
2. Plan to improve library and laboratory facility including support staff.
3. Link curriculum/syllabus where necessary and set up an update plan.
4. Approval of several new courses related to interdisciplinary studies.

Long Term (beyond 10 years):

1. Add class room and common room facility.
2. Recruit multi – disciplinary and highly qualified faculty.
3. Improve library and laboratory facilities including support staff.
4. Some activities have already been initiated to meet short term plans. The means that can be deployed to achieve various intended learning or program outcomes have also been identified in consultation with the faculty.

Dissemination of Vision & Mission of the Department

The department has set forth its vision and mission statements in the curriculum. However, various stakeholders, i.e., students, staff and all the faculty members must embrace and own these well-articulated vision and mission statements.

Periodic Review of Curriculum

Although a major revision of the existing CSE curriculum has been underway, and the updated curriculum is expected to be effective from Spring-2018, the department would need to pay attention to the periodic review of the curriculum. This is mainly due to the constantly shifting industry demands and the emerging societal needs.

Faculty Research & Training

Conducting research and publications by the faculty members is a key ingredient. Not only should they perform their teaching responsibilities, faculty members must also involve themselves in cutting-edge research. In this regard, it is of utmost importance that they continuously hone their research skills so that they can publish in journals with high impact factor. Besides, the department needs to arrange faculty training, both local and overseas, in areas of research methodologies and/or other pedagogical issues on a continuous basis.

Placement Cell

A well designed and functional placement cell can work as the bridge between the university and the industry to usher a long term beneficial relationship. To this end, the entity intends to establish an active placement cell with enthusiastic and efficient personnel to facilitate the students' internship placements leading to their permanent jobs.

Alumni Database

The entity plans to develop and maintain an alumni database containing updated and sufficient information. This database will be instrumental in building an immense network of the former students who could be great resources for professional contacts, industry expectations, changing trends and so on.

Suggestions Box

The entity looks forward to opening a suggestion box for the students to gather their insights, issues, concerns and suggestions to improve them.

APPENDIX A COURSE LIST

First Year First Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 101	Introduction to Computer Science & Programming Methodology	3.00	Nil
CSE 102	Introduction to Computer Sc. & Programming Methodology Lab	1.50	Nil
HSS 101	English I: Written and Spoken English	3.00	Nil
HSS 111(A)	Bangladesh Studies: Society and Culture	2.00	Nil
HSS 111(B)	Bangladesh Studies: Bangladesh History	2.00	Nil
PHY 101	Physics	3.00	Nil
PHY 102	Physics Lab	1.50	Nil
MTH 101	Math I: Basic Calculus, Co-ordinate Geometry	3.00	Nil
Total		19.00	

First Year Second Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 103	Structured Programming	3.00	CSE 101
CSE 104	Structured Programming Lab	1.50	Nil
CSE 105	Discrete Mathematics	3.00	Nil
EEE 121	Electrical & Electronic Engineering I	3.00	Nil
EEE 122	Electrical & Electronic Engineering I Lab	1.50	Nil
MTH 103	Math II: Linear Algebra	3.00	Nil
CHEM 111	Chemistry	3.00	Nil
CHEM 112	Chemistry Lab	1.50	Nil
Total		19.50	

Second Year First Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 203	Object Oriented Programming I: Java	3.00	CSE 103
CSE 204	Object Oriented Programming I Lab: Java Lab	1.50	Nil

CSE 205	Data Structures	3.00	CSE 101, CSE103, CSE 105
CSE 206	Data Structures Lab	1.50	Nil
MTH 201	Math III: Multivariable Calculus	3.00	MTH 103, MTH 101
EEE 221	Electrical & Electronic Engineering II	4.00	Nil
EEE 222	Electrical & Electronic Engineering II Lab	1.50	Nil
MTH 203	Probability & Statistics	3.00	Nil
Total		20.50	

Second Year Second Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 207	Algorithms	3.00	CSE 103, CSE 205
CSE 208	Algorithms Lab	1.50	Nil
CSE 209	Digital Logic & System Design	4.00	Nil
CSE 210	Digital Logic & System Design Lab	1.50	Nil
CSE 211	Database Systems	3.00	Nil
CSE 212	Database Systems Lab	1.50	Nil
MTH 205	Math IV: Differential Equations and Fourier and Laplace Transformations.	3.00	MTH 201
ECN 201	Economics	2.00	Nil
Total		19.50	

Third Year First Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 303	Data Communications	3.00	ECE 201, PHY 101, MTH 205
CSE 304	Data Communications Lab	0.75	Nil
CSE 305	System Analysis and Design	3.00	CSE 211
CSE 306	System Analysis & Design Lab	0.75	CSE 212

CSE 307	Theory of Computation	3.00	CSE 207
CSE 309	Object Oriented Programming II: Visual and Web Programming	3.00	CSE 203, CSE 211
CSE 310	Object Oriented Programming II Lab: Visual and Web Programming Lab	1.50	Nil
CSE 311	Microprocessors& Assembly Language	3.00	Nil
CSE 312	Microprocessors& Assembly Lab	1.50	Nil
HSS301	English II : English for Communications	2.00	HSS 101
Total		21.50	

Third Year Second Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 313	Numerical Methods	3.00	MTH 205, CSE 205
CSE 314	Numerical Methods Lab	0.75	CSE 206
CSE 315	Peripheral & Interfacing	3.00	CSE 209, CSE 311
CSE 316	Peripheral & Interfacing Lab	1.50	CSE 210, CSE 312
CSE 317	Computer Architecture	3.00	CSE 209
CSE 319	Computer Networks	3.00	CSE 303
CSE 320	Computer Networks Lab	1.50	Nil
CSE 321	Software Engineering	3.00	CSE 305
CSE 322	Software Engineering Lab	0.75	CSE 306
CSE 330	Industrial Training	1.50	Nil
Total		21.00	

Fourth Year First Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 401	Mathematics for Computer Science	3.00	CSE 207, MTH 203
CSE 403	Artificial Intelligence and Expert Systems	3.00	Nil
CSE 404	Artificial Intelligence and Expert Systems Lab	1.50	Nil

CSE 405	Operating Systems	3.00	CSE 207, CSE 317
CSE 406	Operating Systems Lab	1.50	Nil
CSE 407	ICT Law, Policy and Ethics	2.00	Nil
CSE 410	Software Development	1.50	CSE 321
CSE ...	Option I	3.00	Nil
CSE 400	Project/ Thesis	3.00	Nil
Total		21.50	

Fourth Year Second Semester			
Course Code	Course Title	Credits	Pre-Requisite
CSE 425	Computer Graphics	3.00	Nil
CSE 426	Computer Graphics Lab	1.50	Nil
CSE 429	Compiler Design	3.00	Nil
CSE 430	Compiler Design Lab	1.50	Nil
CSE ...	Option II	3.00	Nil
CSE ...	Option II Lab	0.75	Nil
CSE 400	Project/ Thesis	3.00	Nil
BUS 401	Business and Entrepreneurship	3.00	Nil
BUS 402	Business and Entrepreneurship Lab	0.75	Nil
Total		19.50	

Total Credits: 162

Option I		
Course Code	Course Title	Credits
CSE 411	Mobile Communications	3.00
CSE 413	Cloud Computing	3.00
CSE 415	Parallel and Distributed Systems	3.00
CSE 417	Management Information Systems	3.00

CSE 419	Sensor Networks	3.00
CSE 421	Graph Theory	3.00
CSE 423	Bioinformatics	3.00
CSE 425	Environment and Green Technology	3.00
CSE 427	Topics of Current Interest	3.00

Option II		
Course Code	Course Title	Credits
CSE 431	Simulation and Modeling	3.00
CSE 433	Fault Tolerant Systems	3.00
CSE 435	Pattern Recognition	3.00
CSE 437	Multimedia Technology	3.00
CSE 439	Wireless Networking	3.00
CSE 441	Introduction to Computer Vision	3.00
CSE 443	UNIX and Systems Programming	3.00
CSE 445	Human Computer Interaction	3.00
CSE 447	Distributed Operating System	3.00
CSE 449	Digital Signal Processing	3.00
CSE 451	Object Oriented Database	3.00
CSE 453	Software Design Pattern	3.00
CSE 455	E-commerce and Web Engineering	3.00
CSE 457	Design and Testing of VLSI	3.00
CSE 459	Natural Language Processing	3.00
CSE 461	Robotics	3.00
CSE 463	Embedded Systems	3.00
CSE 465	Computer and Network Security	3.00
CSE 467	Data Mining & Machine Learning	3.00
CSE 469	Topics of Current Interest	3.00

Option II Lab		
Course Code	Course Title	Credits
CSE 432	Simulation and Modeling Lab	0.75
CSE 434	Fault Tolerant System Lab	0.75
CSE 436	Pattern Recognition Lab	0.75
CSE 438	Multimedia Technology Lab	0.75
CSE 440	Wireless Networking Lab	0.75
CSE 442	Introduction to Computer Vision Lab	0.75
CSE 444	UNIX and Systems Programming Lab	0.75
CSE 446	Human Computer Interaction Lab	0.75
CSE 448	Distributed Operating System Lab	0.75
CSE 450	Digital Signal Processing Lab	0.75
CSE 452	Object Oriented Database Lab	0.75
CSE 454	Software Design Pattern Lab	0.75
CSE 456	E-commerce and Web Engineering Lab	0.75
CSE 458	Design and Testing of VLSI Lab	0.75
CSE 460	Natural Language Processing Lab	0.75
CSE 462	Robotics Lab	0.75
CSE 464	Embedded Systems Lab	0.75
CSE 466	Computer and Network Security Lab	0.75
CSE 468	Data Mining & Machine Learning Lab	0.75
CSE 470	Topics of Current Interest Lab	0.75

MCSE Core Courses:

Course Code	Course Title	Credit Hour
MCSE 6001	Programming Language Implementation	3.0
MCSE 6003	Microprocessor Design	3.0
MCSE 6005	Advanced VLSI Design	3.0
MCS 6011	Advanced Artificial Intelligence & Expert System	3.0
MCSE Elective Courses		
MCSE 6002	Advanced Topics in Computer Architecture	3.0
MCSE 6004	Network Architecture Design	3.0
MCSE 6006	Parallel & Distributed Processing	3.0
Course Code	Course Title	Credit Hour
MCSE 6007	Advanced Topics in Data Communication	3.0
MCSE 6008	Algorithmic Graph Theory	3.0
MCSE 6009	Computational Geometry	3.0
MCSE 6010	Neural Network & Fuzzy Systems	3.0
MCSE 6011	Mobile Communication	3.0
MCSE 6012	Parallel Communication	3.0
MCSE 6014	Topics on Current Interest	3.0
MCS Elective Courses		
MCS 6002	Advanced Data Structure & Algorithm	3.0
MCS 6003	Advanced Database Management System	3.0
MCS 6004	Multimedia System Design	3.0
MCS 6005	E-Commerce & Security System	3.0
MCS 6006	Advanced Topics in Computer Graphics	3.0
MCS 6007	Advanced Topics in Operating System	3.0
MCS 6008	Information System Project Management	3.0
MCS 6009	Internet Engineering	3.0
MCS 6010	Advanced Topics in Computer Networks	3.0
MCS 6012	Advanced Topics in Pattern Recognition	3.0
MCS 6013	Theory of Computing	3.0
Thesis Work		
MCSE 6000	Thesis	12.0

APPENDIX B

LIST OF THESES AND PROJECTS

List of Students' Thesis for Spring 2016

Group No.	Thesis/Project Area	Supervisor	Reg. No.	Name
01	Information Visualization	Bilkis Jamal Ferdosi	13101027 13101036	Md. Shihab Uddin Pallob Datta
02	Networking (Wireless Sensor Network)	Shammi Akhtar	13101003 13101023 13101038	Hridhi Nandini Sarkar A.K.M Mahbub Hasan Hasiba Sultana
03	Natural Language Processing (NLP)	Md. Firoz Mridha	13101031 13101033 13101046	Hosne Jannat Mohasina Aktar Meem Nadim Hossen
04	Image Processing and Machine Learning	Dr. Nabeel Mohammed (CSE, ULAB)	13101009 13101020 13101037	Ruhul Amin Muhammad Mahfuzur Rahman Alem Caesar Biswas
05	Sensor Networking	A S Zaforullah Momtaz	13101001 13101019 13101035	Razia Naushin Rahul Acharjee Shishir Ahmed
06	Robotics	A S Zaforullah Momtaz	13101011 13101041 13101044	Tanaya Saha Sharma Sabrina Hasin Sukriti Singha Shiba
07	Sensor Networking	A S Zaforullah Momtaz	13101018 13101026 13101007	Ahamad Nokib Mozumder Tasnia Afroz Ariful Islam Sourov
08	Networking (Internet of Things)	Molla Rashied Hussein	13101016 13101045 13101049	Riajul Alam Rabby Shourav Hossain Shobuj Md. Rashedul Islam
09	Cloud Computing	Nadeem Ahmed	13101010 13101047 13101050	Fatema Tuj- Johura Tanvin Islam Mou Farhana Farouge
10	Cloud Computing	Nadeem Ahmed	13101008 13101021 13101034	Newaz Sharif Falgune Majumder Geet Tushar Ahmed
11	Networking	Md. Habibur Rahman	13101013 13101014 13101024	Md. Azizul Haque Muntasir Ahmed Yead Md. Sabbir Ahmed Samim
12	Data Mining	Nadeem Ahmed	13101022 13101028	Shakil Ahamed Ireen Akter
13	Information Visualization	Bilkis Jamal Ferdosi	13101078 13101097 13101098	Md. Sohel Rana Akeed Anjum Safwan Towshik
14	Networking	Shammi Akhtar	12201054 13101055 13101057	Sabrina Afrin Mohona Khatun Sharmila Jahan

15	Networking	Md. Akhtaruzzaman Adnan	13101051 13101069 13101073	Aisha Ahmed Sintheya Lupa Tania Sultana
16	Networking (Sensor Network)	Md. Akhtaruzzaman Adnan	13101053 13101058 13101059	Md. Rokibul Islam Kazi Rahmatullah Kaium Razu
17	Networking	Md. Akhtaruzzaman Adnan	13101054 13101076 13101101	Anamul Haq Remon Halima Akter Lima Tohfa-Tul-Mawa
18	Networking	Md. Akhtaruzzaman Adnan	13101061 13101067 13101099	Saif Raihan Nadia Shikder Hasibul Hasan
19	Sensor Networking	A S Zaforullah Momtaz	13101066 13101070 13101083	Tanvir Ahmed Mokabbir Rahman Tarek Bari Chowdhury
20	Big Data	Molla Rashied Hussein	13101052 13101064 13101080	Prokash Karmokar Nabodip Sutradhor Tasrifa Nur
21	Data Mining	Molla Rashied Hussein	13101065 13101086 13101087 13101089	Taqi Tahmid Tanzil Md. Rakib Hossain Abir Hasan Ali Hasan
22	Deep Learning	Md. Shiplu Hawlater (CSE, DU)	13101062 13101068 12201029	Syed Zafrul Bahar Yasin Arafat Nahid Hasan Prodhan
23	Networking	Md. Habibur Rahman	13101072 13101074	Kamrul Hasan Nahid Zaved Kawser
24	Networking	Md. Habibur Rahman	13101091 13101095 13101096	Syed Ekramul Ahmed Md. Moktadir Rahman Showmick Kazi Rasel Rana Dolon
25	Data Mining and Machine Learning	Molla Rashied Hussein	13101002 13101006 13101085	Akm Ashiquzzaman Md. Mazharul Islam Md. Arifur Rahman
26	Networking (Internet of Things)	Molla Rashied Hussein	13101004 13101012 13101060	Yesna Habib Md. Sabbir Hossain F.M. Hadiur Rahman
27	Networking	A S Zaforullah Momtaz	09101007 09101027 09201016	Abdur Rahman Sujon Sirat Al Mustakim Mohammad Anisur Rahman

List of Students' Thesis for Spring 2017

No.	Supervisor Name	Group ID	Student name
1	Md. Asiful Hossain	13201007	Shoufillah Babor
		13201001	Mahmuda Sarkar Mithila
		13201024	Mahdi Hasan Sohag
2	Dr. Md. Rashedul Islam	13201033	Rasel Ahmed Bhuiyan
		13201008	Shafiul Islam
3	Dr. Shahera Hossain	13201016	Salman Md Sultan
		13201003	Md. Al-Amin Sheikh
		13201009	Rahat Chowdhury
4	Nahida Sultana Chowdhury	13201022	Muntasher Shourov
		13201018	Ummey Kulsum
		13201029	Zarin Tasnim
5	Md. Firoz Mridha	13201021	Jannatul Ferdous
		13201020	Syeda Noorshitan
		13201013	Sazzad Hossain Pranto
6	A S Zafourullah Momtaz	13201035	Tareque-Bin-Bashar
		13201027	Jannatul Ferdous Jannat
		13201032	Jahirul Islam
		12201017	Md Asif Ahmed
7	Md. Akhtaruzzaman Adnan	13201401	Shihab Hasin
		13201005	Sharukh Joy
		13201031	Mirza Zammi Alam
		13201012	Sadik Al Mahmud
8	Molla Rashied Hussein	13201034	Ananyo Das
		13201023	Mudassir Hossen
		13201019	Md. Nahid
9	Shiplu Hawlader	13101062	Syed Zafrul
		12201029	Nahid Hassan
		13101068	Yasin Arafat
10	Dr. Nasima Begum	14101090	Sk Abrar Faiaz
		14101088	Laxman Ghosh Abir
		11101012	Md. Jahidul Islam

APPENDIX C

RESEARCH AND DEVELOPMENT PROJECTS

Faculty members and students of University of Asia Pacific are dedicated for their research and development projects and a number of quality papers have been published in different international conferences at home and abroad. Some of the undergraduate projects are mentioned below:

Topics	Done By	Supervisor
Study of Computer Network Security	Sk. Mohammad Ali, Muhammad Anwar Hossain	Professor Dr. Md. Shamsul Alam
Study and Analysis of Transmission Control Protocol (TCP)	Md. Robiul Islam, Md. Akhter Hasan, Shammi Akhtar, Husna Sheherzad	Professor Dr. Md. Shamsul Alam
Error Detection, Error Correction & Error Control in Communication.	Md. Sohel Rana, Kazi Krizaur Rashid, Mamun Al Murshed Chowdhury, Md. Jakat Uddin Khan	Professor Dr. Md. Shamsul Alam
Minimization' of PLA's for Multiple-Output Functions Using Modified Outline-: Mccluskey Method	Md. Shahed Alamgir, Shakila Rahman, Qurratui Aine, Md. Ashraful Islam	Dr. Hafiz Md. Hasan Babu
Design an Expert System of Medical Diagnosis	Kazi Tamarma Kabir, A.T.M. Nazmus Saquib, Md. Abir Hossain, Md. Nur-E-Alam Siddiquey	Mohsin Uddin Anwar
Bangla Character Recognition	Suppama Das Gupta, Mihir Kanti Paul, M. Azimur Rahman	Md. Monzur Morshed
Development of Multimedia System and Indexing of Multimedia Database "Amar Ekushey"	Mohammad Rashidul Hasan, Syed Yaminul Haque, Alamgir Kabir Rony, K. M. Kammnnahar	Engineer Mujibur Rahman
Network Database System Design and Development – A Case Study for BARI	Sheikh Golam Muhammod, Jayanta Kumar Karmakar, Sajib Kumar Banik, Md. Atiquer Rahman, Zakir Hossain, K. M. Kabir Hossain	Dr. M. Lutfar Rahman & Mr. Aloke Kumar Saha.
Web Based Directory Service	Abul Basher Mohammad-Mominull Bari, Samrat Moshir Rahman, Amirul Ahsan Rajib, Mahfuja Akter, Fahima Akhter	Md. Ibrahim Faisal
Development of Information Management System	Md. Ashiqur Rahman, Md. Anisur Rahman Chowdhury, Mohammad Sedratui Amin	Mohd. Moniruzzaman
Analysis with Optical Mark Recognition and Design of a Practical Approach	Md. Istiaque Hossain, Khan Mohummad Kaisar, Shahriar Ahmmed Chowdhury	Mohsin Uddin Anwar
Expert System Using clustering Technique and Belief Network	A.T.M.Enamul Haque, A.M.Atiquil Alam, S. M. Atiquil	Md Asifur Rahman

	Alam	
Study and Analysis of Different Data Compression Techniques	Mohammed Shamsuzzoha, Sayeda Nasreen Jahan, Anjama Roy	Manoj Banik
Study on Data Mining	Mohammed Mahbubul Haque, Md. Shamim Sultan, A.K.M. Hasan Mahbub, Md. Towhidul Haque	Md Ashraf Uddin Bhuiyan
Inventory Control System	Md Anisur Rahman, Nasrin Akter, Erfan Ahmed	Aloke Kumar Saha
Automation of Banking Using Client Server database System with Hardware Security	A.S.M. Ahasanul Alam, Arefa Akhter Nila, Deena Andaleeb Shahabuddin, A.M. Faisal Rahman	Abu Shamim Md. Arif
Design and Implementation of 4-Bit Single Board Computer.	Mahjabeen Sumaiya Sultana, Mustafijur Rahman, Md. Lutfar Rahman	Md. Moniruzzaman
Bangla Voice Synthesis	Md. Heherul Karim, Rownak Ara Chowadhury, Md. Ataur Rahman, Md. Golam Arefm	Ahmed Yousuf Saber
A Computer Based Temperature Monitoring System Using Thermocouple	Md. Nazim Uddin, Md. Ershadur Rahman, Sheikh Saeem Fredous	Ahmed Yousuf Saber
Image Compression Using Clustering Method	Syed Jubair Ali Mahbub, Mohammad Tariqul Islam, Md. Shanful Islam	Ahmed Yousuf Saber
A Computer Based Temperature Monitoring System Using Diode	Md. Asrafuddin Mazumder, Mohammad Akkas Ali, S.M. Meshbahul Alam	Ahmed Yousuf Saber
Microcomputer Based High Frequency Signal Display	Md. Imran Khan, Kazi Tareen Wali, Md. Mostafizur Rahman, Mst. Shafinaz Khatun	Ahmed Yousuf Saber
Implementation of Clustering and Comparative Study of Supercomputer	Syed Reazul Akbar, Abu Md Fredous	Shaila Rahaman
Automation of Result Processing for University of Asia Pacific	Mohammad Shahidul Haque, Mohammad Kawsar Imam, Mirza Fazla Rabbi, Kamrul Isalm	Md. Iqbal Bahar Chowdhury
CDMA in Mobile Communication	Dhiman Sarma, Subrina Thakur Chaity, Azizul Hoque Bhuyan	Shazzad Hossain
Adaptive Wireless Network	Md. Ariful Haque, Md. Shiful Islam Munadia Choudhury, Masudur Rahim Sayeed	Md. Iqbal Bahar Chowdhury
Study of Algorithm for Automated VLSI Routing using Bend Minimization	Nahid Al Mahmud, Marshal Md Arifur Amran, Md. Tanvir Hassan Maula, Sayeda Afsa Bukhari	Sumon Saha
Dynamic Programming	Mahmud Un Nur Bin Imam, David Thomas Gomes, Md. Rajesh Islam	Manoj Banik

	Firoz Ahmed Bhuyan	
Designing Segments for display of Bangla Digits	Julia Zaffar, Nusrat Adib Chowdhury, Syeda Tasnuva Akhter, Md. Shaifur Rahman	Ahmed Yousuf Saber
Study of Cost-estimation of Software Project	Ferdous Hasan, Muhammad Atiqur Rahman, Mohammad Golam Sohrab, Nadir Muntasir	Md Ibrahim Faisal
Design and Implementation of Algorithm(AI based)	Muhammad Ashraf Alam, Mohammad Mahbub Hasan, Abdur Rahman, Mohammad Shafiqul Islam	Aloke Kumar Saha
Comparison and Development of Association Rule Algorithms of Data Mining	Rafed Mahbub, Mohammad Abdullah, Mohammad Marufuzzaman Jani, Biplob Kumar Das	Md Ashraf Uddin
Hetero-associative Pattern Recognition	Nusrat Akhter, Md. Abdul Wahed Tomal, Md. Tanvir Hasan Sadia Hafez	Md Moeseeur Rahman
Expert System using clustering technique	Shamim Ara, Nusrat Islam, Rubayat Hasan Malik, Ahmed Shafill Ceder	.Asifur Rahman
Study of Different Crypto systems & implementation of a proposed approach	A.S.M Rashidul Amin, Azim Uddin Sonia Khan sweety , Md. Razaul Karim	Shaila Rahman
Design and implementation of a distributed and parallel computing system using Java RMI	Tahera Jannat, Md. Mahbub Alom, Md. Mahabubor Rashid, S. M. Mahfuzul Hasin	Shaila Rahman
Study of Different Crypto systems & implementation of a proposed approach	A.S.M Rashidul Amin, Azim Uddin Sonia Khan sweety , Md. Razaul Karim	Shaila Rahman
Location Identification in GSM Network using GIS	Sumon Kumar das, A T M Zabidur Rahman, Pabrito Kumar Mollik.	Shaila Rahman
Study on Various Scan Conversion Methods and Design and Implementation of Efficient Scan Conversion Algorithm	Md. Shakil Hossain, Apu Roy, Ruhul Islam, Rezwana Rahman	Aloke Kumar Saha
Design and Implementation of Parallel Algorithms in Java-based Environment - RMI	Syeda Nabila Firdaus, Sajia Afrin, Shanchita Rahman, Syeda Nadia	Shaila Rahman

	Firdaus	
Design and Implementation of E-Voting System by Using J2ME.	Md. Habibur Rahman, Abdulla Hassan Zubair, Nuruzzaman Nahid, Khandokar Sabbir Ahmad, Tufazzal Hassain Suzon	Shaila Rahman
Inventory Control System and Repairing Management System of BASIC Bank	Maharun Nigar, Ishrat Jahan, Shamsul Alam	Aloke Kumar Saha
Developing of Interactive Web Applications Using Servlets	Md. Atikul Islam, Mushfiquur Rahman, Md. Islah Uddin, Shah Md Shamsuddin	Shaila Rahman
Design and Implementation of an Intelligent Robot system	Fiona Avanti Alim, Purnendu Bikash Roy, Samea Akter, Md. Mahtab Hossain Shikdar, Md. Mahmudul Haque	M. Fayyaz Khan
Study on Various Scan Conversion Methods and Design and Implementation of Efficient Scan Conversion Algorithm	Md. Jillur Rahman, Md. Shahrukh Adnan Darul, Md. Mahbubur Rahman, Md. Tasdikuzzoha	Aloke Kumar Saha
Design and Implementation of Bluetooth Enabled Applications using J2ME	Sharmin Alam, Zobaer bin Liaquat, Md. Jeshan Ahammad, Md. Sakil Ahammad	Shaila Rahman
Design and Implementation of an E-Commerce Site for a Virtual Shopping Mall	Md. Rassaduzzaman, Smritee Mohalder	Shaila Rahman
Distributed System	Ahmed Mydul Haque Chowdhury, Md. Kashem Zaman, Md. Mahmudul Haque, Muntasir Al Karim	Abdur Rahim Mutafa
Study the performance of different BT Scheduling Algorithms	Nilufa Yeasmin, Sumi Akhter, A.B.M. Tajmillur Kabir, Md. Kamrul Hasan	Shaila Rahman
Design and Implementation of Bi-directional Heuristic Search Algorithm	Md. Ashraful Alam, Mohammad Mahbub Hasan, Abdur Rahman, Mohammad Shafiqul Islam	Aloke Kumer Saha
Location Management System In GSM	Dipankar Roy, Md. Mahbubur Rahman, Avijit Saha Chowdhury, Milon Kanti Biswas	Shaila Rahman
Design and Implementation of an Intelligent Robot system	Md. Iqbal Hossain, Tanvir Ahmed, Nahida Sultana Chowdhury, Munaha Hosen	M. Fayyaz Khan
Artificial Intelligence	Abdullah Al Zakir, Humaira Sharmin, Sanjeda Ahmed, Md. Saiful Islam	Dr. M Kaykobad
Ticket Booking System Using	Md. Akteruzzaman, Md. Atikur	Dr. Kazi Muheymenus

Mobile Phone	Rahman, Probir Biswas	Sakib.
A Novel Approach of Parallel Downloading in Wireless Network	Kazi Shamsul Arefin	Emdad Ahmed
A New Proposal for Choosing a Deflection Link in a Combination of Store and - Forward and Deflection Network Under Datagram Service	Selvia Belal, Fariha Tamanna, Shakila Shams	Ashis Kumar Biswas
Banking Database System and Development	Salaudhin Ahmmed, Giash Uddin Mahmud	Aloke Kumar Saha
Networked Database System Design and Development– A Case Study for BARI	Sheikh Golam Muhammod, Jayanat Kumar Karmakar, Sajib Kumar Bankik, Md. Atiquer Rahman, Zakir Hossain, K.M. Kabir Hossain	M. Lutfar Rahman and Aloke Kumar Saha
Design & Implementation of Container Carrier Robot	A S Zaforullah Momtaz, SM Fuad Hasan	Md.Fayyaz Khan
Study and Development on Linux Operating System	Badiur Rahman, Ashraful Abedin, Mohammad Ali, Nargis Ara Putul	S.M.Salim Reza
Gender Factor Elimination for Speech Recognition with Gender Independent HMM Based Classifier	Abdur Rahman Khan Jihad	Dr.Mohammad Nurul Huda
Inventory Control and Repairing Management System of BASIC Bank & a Final Report of IT Division of BASIC Bank	Maharun Nigar Ishrat Jahan, Shamsul Alam	Aloke Kumar Saha
Towards a Mobile Phone Based Solution for Microcredit in Rural Bangladesh	Masum Ahmed, A.K.M Fahad Aziz, Raj Narayan Saha, Susmita Das, Laila Shamin	Syed Ishtiaque Ahmed
Normal Events Detection from Video Streams	Md. Haris Uddin Sharif	Aloke Kumar Saha
Agile Methodology an Adaptive Software Development Approach	Soumitro Kumar Ghosh	Shamsul Arefeen
Software Risk Management: Importance and Parctices	Abdullah Al Murad Chowdhury	Shamsul Arefeen
Recurrent Neural Network Based Phoneme Recognition	Md. Arifuzzaman	Dr.Mohammad Nurul Huda
Analysis of SCTP Path Estimation in Wireless Network	Tusher Kana Podder	Mohammad Mamun Elahi
A Flexible Resource Management Scheme for Heterogeneous Wirless Networks.	Muhammad Kamrul Hasan	Mohammad Mamun Elahi
Gender Effects Suppression in Bangla ASR by Designing	Md. Abdul Latif	Dr.Mohammad Nurul Huda

Multiple HMM-Based Classifiers		
Utility Based Network Selection in Multipath Wireless Network	Md.Mongul Rayhan	Mohammad Mamun Elahi
Software Performance Testing	Uttam Kumar Ghosh	Shamsul Arefeen
Performance Comparision of TCP and SCTP for Real Time Multimedia	Md.Shohidullah Kaiser	Mohammad Mamun Elahi
Vertical Handover Management Based on Network Interface Ranking	Mosarraf Hossen	Mohammad Mamun Elahi
Software Configuration Management a Process Area of CMMI	Muhammad Ashique-Ur-Rouf	Shamsul Arefeen
Capability Maturity Model Integration (CMMI) and Software Quality Assurance(SQA)	Md. Nazrul Islam	Shamsul Arefeen
Testing Strategy in Capability Maturity Model Integration(CMMI)	Anasis Majumdar	Shamsul Arefeen
Conversion of Bangla Sentences to Universal Networking Language	Md. Rasiduzzaman Rasel	Manoj Banik
Phone Segmentation in Articulator Feature Based Automatic Speech Recoginition(ASR) Using Neural Networks	Md. Modasser Hossain	Manoj Banik
Performance Study of Different Cryptographic Algorithms and Implementation of a New Approach.	Ibne Sina Khan, Md. Mehedi Hasan, Md. Muhaimenul Islam, Sayem Mohammed	Shaila Rahman
Study on Various Scan Conversion Methods and Design and Implementation of an Efficient Scan Conversion Algorithm	Md. Jillur Rahman, Md. Shahrukh, Adnan Darul, Md. Mahbubur Rahman, Md. Tasdikuzzoha	Aloke Kumar Saha
Implementation of The AKS Primality Testing Algorithm	Shanjida Ahmed, Homaira Sharmin, Saiful Alam, Abdullah Al Zakir Hossain	Dr. M. Kaykobad
Modified Approach of RFCOMM Implementation to Protect Bluetooth Technology from Bluebug Attach	Hasbiha Hossain	Upama Kabir
Performance Analysis of Integrated Service over Differentiated Service for Next Generation Internet	Shammi Akhtar	Dr. Emdad Ahmed
Study on Various Scan Conversion Methods and Design	Md. Shakil Hossain, Apu Roy, Ruhul Islam, Rezwana Rahman	Aloke Kumar Saha

and Implementation of Effecting Scan Conversion Algorithms		
An Efficient Dynamic Routing Protocol for WSN	Marium Faruque Sharif, Md.Rokonuzzaman, Shalim Ahmed, Monjur-E-Mamwla	Kazi Chandrima Rahman
Design and Implementation of Bi-Directional Heuristic Search Algorithm- a New Approach	Mohammad Abdullah Junayeed, Shantanu Chakraborty, Md.Anwarul Islam, Sk.Md. Munir Hassan	Aloke Kumar Saha
Analysis of SMS Message in GSM Network Implementation of Bulk SMS using PC to Mobile Via Mobile or Modem.	Sumon Sarker, Md.Shafiqur Rahman, Nusrat Sharmeen Khan, Shilpi Sarker, Hasnain Shamim Zaman, Md. Forhad Hossain Miajee	Saila Rahman
Automation of Result Processing	Mohammad Shahidul Haque, Mohammad Kawsar Imam, Mirza Fazla Rahbi, Kamrul Islam	Md. Iqbal Bahar Chowdhury
Expert System Using Clustering Technique and Belief Network	A.T.M. Enamul Haque, S.M.Atiqul Alam, A.N.M. Tawhidur Rahman Chowdhury, A.K.M. Adyl Morshed	Md. Asifur Rahman
Study of Computer Network Security	Sk.Mohammad Ali, Muhammad Anwar Hossain, Mafizul Islam, Shamsul Alam	Dr.Md.Shamsul Alam
Image Compression Using Clustering Method	Syed Jubair Ali Mahbub, Mohammad Tariqul Islam, Md.Shariful Islam	Ahmed Yousuf Saber
Face Detection in Image	Md.Moniruzzaman, Muhammad Abdul Kader Shiplu, Mohammad Saukat Jahan, D.M.Atikur Rahman	Ahmed Yousuf Saber
Traffic Control Over Internet with Differential Services	Umme Salma, Syed Hasnain Ahamed Siddique, Md.Raqibul Alam, Rawshon Masuma Runa	Mahbub Ahmed
Design and Implementation of EPROM, EEPROM and Flash ROM Programmer	Byron Sarker, Mohammad Taslim Anawar, Mohammad Kamrul Hasan, Mohammad Shams Al Hassan	Md. Shamim Akbar
Study on Data Mining	Muhammad Mahbubul Haque, Md.Shamim Sultan, A.K.M. Hasan Mahbub, Md.Towhidul Hoque	Md. Ashraf Uddin Bhuiyan
Flexible Signal Processing Algorithm for Wireless Communication	Md.Tanvir Hossain, Abu Raiban Md.Rahat Hossain, Mohammad Abu Taleb, Shahidul Sarkar	Md. Iqbal Bahar Chowdhury
Bangla Voice Synthesis	Md.Meher Ul Karim, Rownak Ara Chwdhury, Md.Ataur Rahman,	Ahmed Yousuf Saber

	Md.Golam Arefin	
Implementation of Clustering and Comparative Study of Super Computer	Syed Reazul Akbar, Abu Md Ferdous	Shaila Rahman
Design An Expert System Of Medical Diagnosis	Kazi Tamanna Kabir, A.T.M Nazmus Saquib, Md.Abir Hossain, Md.Nur-e-Alam Siddiquey	Mohshin Uddin Anwar
Bangla Character Recognition	Suparna Das Gupta, Mihir Kanti Paul, M.Azimur Rahman	Md. Monzur Morshed
Design And Implementation Of 4-Bit Single Board Computer	Mahjabeen, Sumaiya Sultana, Mustafijur Rahman, Md.Lutfar Rahman	Md. Moniruzzaman
Minimization Of PLA's For Multiple-Output Funcation Using Modified Quine-McCluskey Method	Md.Shahed Almgir, Shakila Rahman, Md. Ashraful Islam, Qurratul Aine	Dr. Hafiz Md.Hasan Babu
Error Detection Error Correction & Error Control in Communication	Md.Sohel Rana, Kazi Krizaur Rashid, Mamun Al Murshed Chowdhury, Md.Jakat Uddin Khan	Professor Dr.Md. Alam
Implementation of a Laboratory Information Management System(LIMS) for and Environmental Analytical Application and Research Laboratory	Mala khan	Shamim Ahmed/Md. Mamun Elahi
The Design Development and Evaluation of V-Commerce	Md.Abdul Muttalib Hossain, Md.Kamrul Hasan Al Azad, Sayed Mohammed Naimul Habib, Mohammed Mehedi Hasan	Mrinmoy Barua
Multi Key Indexing for distributed Database Management System	Md.Mamumur Rashid, Jeshan Ahammed Shikder, Abu Khaled Mosarrof	Md. Shazzad Hosain
Developing of Interactive Web Application Using Servlets	Md.Atikul Islam, Mushfiqur Rahman, Md.Islah Uddin, Sah Md.Shamsuddin	Shaila Rahman
Design and Implementation of Spam Filter Using Bayesian and Rule -Based Approach	Tonmoy Paul, Mohammad Sayeedil Amin, Mohammad Mahbub Hossain, Chinmoy Paul	Farzana Mithun
A Comprehensive Study and Implementation of Internal and External Sorting	Nasir Uddin, Kanak Kanti Bhowmick, Sanjib Deb, Kayes Md.Al Fatehin	Manoj Banik
Medical Expert System Using Clustering Technique and Belief Network	Ahmed Shafill Ceder, Nusrat Islam, Shamim Ara	Md.Asifur Rahman
Image Compression Using Dynamic Clustering Algorithm	Mohammad Belayet Hossen Ripon, Joyanta kishor Kar, Shahanajparven Reta, Farhana	Ahmed Yousuf Saber

	Rashid	
The Study of Double Base Number System	Mohammad Masud Khan A.S.M. Morshed Mosammat Jahanara Begum	Tasadduq Imam
Design and Implementation of a Distributed and Parallel Computing System Using Java Remote Method Invocation	Md.Mahbub Alam, S.M. Mahfuzul Hasin, Tahera Jannat, Md. Mahabubur Rashid	Shaila Rahman
Comparison and Development of Association Rule Algorithm of Data Mining	Mohammad Abdullah, Rafed Mahbub, Biplob Kumar Das, Mohammad Marufuzzaman	Md.Ashraf Uddin Bhuiyan
Study on Hetero Associative Pattern Recognition	Nusrat Akhtar, Sadia Hafiz Khan, Tanvir Hasan Khan, Muhammad Abdul Wahed Tomal	Mohammed Mosheer Rahman
Wireless Based Automation	Md.Nurul Islam, Abu Rashel Moni	Mohd.Moniruzzaman
Study of Software Project Cost Estimation	Ferdous Hasan Sohag, Muhammad Atiqur Rahman, Mohammad Golam Sohrab, Nadir Muntasir	Md.Ibrahim Faisal
Adaptive Wireless Network	Masudur Rahim Sayeed, Munadia Choudhury, Md.Shiful Islam, Md.Ariful Haque	Md.Iqbal Bahar Chowdhury
Spanning Trees with Restricted Degrees	Tania Ashraf, Md.Thaminul Islam, Kazi Farhana	Muhammad Sirajul Islam
Study of Segmentation of Digits Intelligently	Md.Shaifur Rahman, Julia Zaffar, Nusrat Adib Chowdhury, Syeda Tasouva Akhter	Ahmed Yousuf Saber
Implementation of Frequency Hopping Software Radio	Sk.Md.Masum, Bina Barai, Jhunu Barai, Mohammad Jahangir Alam	Md.Iqbal Bahar Chowdhury
Design of a Speech Recognition Software	Md.Shamsuzzsaman Adil, Nizamur Rahim Chowdhury, Md.Ziaul Karim Chowdhury	Mohshin Uddin Anwar
To Develop a Web Based System for Virtual Campus to Manage Distance Education	Md.Shamim Sahed Shammee, Md.Mahmudul Hasan, Bibrata Kumar Singha, Mahadi Hasan	Md. Mahbubul Islam
Integrated Information System	Md.Mojibur Rahman, Naoshad Jahan Nayeem, Md.Mohidul Islam, Jewel Chandra Kuri	Mahbub Ahmed
Developing an Intelligent Decision Support System	Abdul Mannan Shohed, Fatema Anwer, Rumana Taher, Fatima Nowshim Nayeema	Mohammad Mamun Elahi
Ojudge: An Approach Towards Making an Open Source and Enhanced Online Judge System for the Programming Contests	Pranta Gosh Dastider, Mahmudul Hassan Siddiquee, Ruma Das, Gazi Samia Ahmed	Ashis Kumer Biswas
Developing Private SMS	Ahamed Mydul Haque	M.A.R Mustafa

Gateway	Chowdhury, Md.Saiful Islam Khan, Muntaseer Al Karim, Kashem Zaman	
Analysis of SMS Message in GSM Network & Implementation of Bulk SMS using PC to Mobile vis Mobile or Modem	Sumon Sarker, Md.Shafiqur Rahman, Nusrat Sharmeen Khan, Shiopi Sarker, Hasnain Shamin Zaman, Md.Forhad Hossain Miajee	Shaila Rahman
Web Services Based Information Transaction System with Heterogeneous Clients	Hussain Mahmud Patwary, Md.Nazrul Islam, Md.Hafizur Rahman, Md.Ahasanul-al-jannat	Khandakar Asif Hasan
Development of Human Robot for Human Robot Symbiosis	Md.Arif Reza Anwary, Md.Rezaul Islam, Farah Hasin, Md.Asif Mahmud Shah	Dr.M.Al-Amin Bhuiyan
Transmitting Data from Local IP to a Remote Real Ip over GPRS Without Using www.services	Sara Zahan, Nahid Mostafa, Jeshan Ahammed Sikder	Asifur Rahman
Integration of GPRS and WMAN	Rebeka Sultana, Md.Zahidul Hassan Bulbul, Md.Shahed Hossain, Md.Harun-or-Rashid	Mahbub Ahmed
Automated Transportation System by Combined GPRS, GPS,GIS & ZIGBEE.	Rajib Chandra Saha, Md.Sonjat Khan, Ibrahim Khalliullah Faisal, Md.Rashedul Hasan, Syed Montasir Anowar	Mohd.Moniruzzaman
Study the Performance of Wireless and Bluetooth	Dhiraj Kishore Paul, Muztoba-al- mahmud, Md.Shohidullah Kaiser, Mohammad Mahmudul Hasan	Suman Saha
Design and Implementation of Bluetooth Enabled Application Using J2ME	Sharmin Alam, Zober-bin-laiquot, Md.Jeshan Ahammad, Sakil Ahmmmed	Shaila Rahman
Simulation of Location Management of GSM Network Using TDOA Technique	Md.Mahabubur Rahman, Md.Masud Hasan, Md.Toriquel Islam, Md.Nahiduzzaman, Md.Shukriar Alam	Md.Iqbal Bashir Chowdhury
Study of Mobile IP in Wireless Network	H.M. Aleem- Al- Arefin, M.A. Shobuktogin, K.M. Fazley Elahi, Noshin Nawal ami	Mahbub Ahmed
A Flexible Resource Management Scheme for Heterogeneous Wireless Networks	Muhammad Kamrul Hasan	Mohammad Mamun Elahi
Image Compression Using Dynamic Clustering and Neural Network	Ahmed Yousuf Saber	Dr. Chowdhury Mofizur Rahman, Dr. Muhammad Masroor Ali,Dr.Md. Abul Kashem mia, Dr. Hafiz Md.Hasan Babu
A Computer Based Temperature Monitoring System	Ahmed Yousuf Saber	Abu Sayed Md. Latiful Haque
Data Communication Using SMS	Mohammad Mushfiqur Rahman,	Md. Asifur Rahman

Through GSM Network	Rezwana Karim, Sabeca Sultana, Shaheen Reza Chowdhury	
Online Ticket Reservation on Wireless Devices Using J2ME	Muhammad. Ashiqe-Ur-Rouf, Rajan Kumar Majumder, Zafar Siddik Sunna, Sajid Afrin	Md. Mahbubul Islam
Study of Latency Delay in the Integrated Network of WLAN, WMAN and WWAN	Baizid Hossain, Moksedur Rahman, Sk. Hira Akbar, Golam Kibria	Mr. Mahbub Ahmed
Development of Software for Power System Optimization with Reference to BANGLADESH	Md. Rakibul Islam, Md. Sultan Mahmud Sharker, Tasnuva Alam Mim, Sairin Rahman	Dr. Ali Asgar Md. Fayyaz Khan
Error Correction Codes for Third Generation Wireless Communications	Md. Saidur Rahman, Sharif md.Abu Sayem, Md. Tarique Iqbal, M.A. Kader	Md. Ashraf Uddin Bhuiyan
Study and Implementation of Cryptographic Algorithm	Md. Jhirul Islam, Md. Sarfaraj Alam Chowdhury, Md. Kamrul Hasan, Md. Fuad Hasan	Kazi Chandrima Rahman
Study on Error Correction Code in Wireless Communication	Sikdar Mohammad Shihab, Zakia Abedin, Asiful Huq, Marzia Nusrat, Malancha Das	Md. Ashraf Uddin Bhuiyan
Implementation of Desktop GIS Software	Md. Akteruzzaman, Md. Mahfizur Rahman, Akhtaruzzaman, Md. Tasfin Adnan	Mohammad Mamun Elahi
Image Processing and Object Recognition by an Intelligent ROBOT	Md. Mahtab Hossain Shikdar, Md. Mahmudul Hoque, Purnendu Bikash Roy, Samea Akter, Fiona Avanti Alim	Md. Fayyaz Khan
Study the Performance of Different Bluetooth Scheduling Algorithms	A.A.B. Tajmilur Kobir, Md. Kamrul Hossain, Nilufa Yasmin, Sumi Akter	Shaila Rahman
Performance Analysis of UMTS & CDMA 2000	Md. Motalib Miah, Enamul Haque, S.M. Kamruzzaman, Md. Arman Hossain	Md. Ashraf Uddin Bhuiyan,
Performance Analysis of OFDM in Wireless Communication	Md. Muzaffar Mahmud, Md. Mozibul Haque, Md. Abdul Matin Biswas, Abu Sadat Md.Soyeb	Md. Ashraf Uddin Bhuiyan
CDMA (Code Division Multiple Access) Technology in Mobile Communication System	Azizul Hoque Bhuyan, Dhiman Sharma, Sabrina Thakur Chaity	Md. Shazzad Hosain
Development of Web-Based Client/ Server Applications Trough Microsoft Technology Using Asp Under IIS. Environment	Md. Suzzadul-Alif, Alinoor Islam	Shaila Rahman
Study of Different Cryptosystems and Implementation of a Proposed	A.S.M Rashidul Amin, Azim Uddin, Sonia Khan Sweetty, Md. Razaul Karim	Shaila Rahman

Approach		
Study of Data Mining Application	Eliga Islam, Md. Abir Mahmud, Farjana Akter	Mohammad Mamun Elahi
Content Based Billing Solution for GPRS	Md. Anwar Hossain, Md. Moshir Rahman, Sharif Nazmul Sadat Joarder, Md. Tanimur Rahman	Mohd. Moniruzzaman
Conversion of Analog Energy Meter into Digital and Development of Utility Billing Software	Farzana Karim, Md. Monirul Islam, Md. Morshed, Most. Ummey Marjiya	Md. Ashraf Uddin Bhuiyan
Video Data Transfer over Third Generation Wireless Communication	Md. Shah Jahirul Kader Chowdhury, M. Yeasin Ahmed Khan, Md. Saiful Islam, Md. Zakir Hossain, Shafiqul Islam	Mr. Mahbub Ahmed
Design And Implementation of A Computer Aided Learning Software and Discussion on Different Types of Computer Aided Learning	S.M. Shafayet Hussain, Kazi Humayun Kabir, Mohammad Akter Hossain,	Md. Monzur Morshed
Study on Distributed Dynamic Channel Allocated in Mobile Cellular Network	A.T.M. Rubayet Hossain, Muhammad Istiaque Jahan, Mohammad Rafiqul Alam, Mashfika Mahbub	Md. Tasadduq Imam
Design and Implementation of An Intelligent Robot	Md. Zahidul Islam Khan, Md. Monsur Habibulla Haque, Md. Azizur Rahman, Md. Sofiul Alam Sarker	Md. Fayyaz Khan
Information Agent Webcrawler/ Robot	Farhat Rahman, Kazi Moimun Nesa Chandni, Mominul Islam	Farzana Mithun
Study on GSM Technology	Sadia Amin Khan, Jafrin Islam, Meshkat Jahan	Mohammad Mamun Elahi
Design and Implementation of Web Enabled Telemetry System	Mohammad Abdur Rahman, Mohammad Mehedi Hasan, Assaduzzaman, Md. Monirul Karim	Mohd. Moniruzzaman
Inter-Piconet Scheduling Algorithm for Bluetooth Scatternets	Rajib Paul, Abdullah Al Momin, Mian Md. Al-Hasanul Mehadi, Md. Abdullah-Al-Hasan	Suman Saha
Image Compression Using Dynamic Clustering Algorithm	Mohammad Belayet Hossain Ripon, Joyanta Kishor Kor, Shahana Parven Reeta, Farhana Rashid	Ahmed Yousuf Saber
Developing Mobile-Based E-Voting System	Md. Habibur Rahman, Nuruzzaman Nahid, Abdullah Hasan Zubair, Khandoker Sabbir Ahmed, Tufazzal Hossain Suzon	Shaila Rahman
Design & Implementation of Wireless Application Protocol	Towhid Hossain, Rownak Afrin, Raihana Kulsum Chaity, S.M.	Md. Shazzad Hossain

	Shaer	
Study on Global System for Mobile Communication (Gsm) & Channel Allocation in Mobile Cellular Network	Refat Salman, Ahmed Selim-Al-Baker Khan, Abdullah Ibna Ekram, Md. Asheq Ullah	Md. Shazzad Hossain
Study of Multi-Agent Systems	ShahMd. Mazedul Hossain, Md. Abdul Karim, Abbas Uddin Sheikh, Md.Abdul Motin Mia	Mohammad Mamun Elahi
Distributed Dynamic Channel Allocation in Mobile Cellular Network	Farzana Yasmin, A.S.M. Saiful Bari, Mohammad Mahfuzur Rahman, Sangita Dey	Shazzad Hossain
Information Cell Based on Locality	Rafiqul Islam, Muhib Ahmed, Maruf Hasan, ShahriarMd. Abdullah	Mahmud Ahmed
Study and Implementation of WAP	Kalyan Brata Das, Asif Ahmed, Atanu Kishor Dash Moon, Lutful Wazed, G.M. Basher Alam	Mohd. Moniruzzaman
RFID Based Traffic Management System	Md. Rifat Hassain, Md. Syfuddin Ferdous, Md. Arifur Rahman, Tapas Chandra Howlader	Mohd. Moniruzzaman
Multi Key Indexing for Distributed Database Management System	Md. Miskatul Islam, Rongon Kumar Ghosh, Golam Dostogir Khan, Md. Yusuf Abdullah Harun	Md. Shazzad Hosain
Multi Key Indexing for Distributed Database Management System	Md. Miskatul Islam, Rongon Kumar Ghosh, Golam Dostogir Khan, Md. Yusuf Abdullah Harun	Md. Shazzad Hosain
A Design of MOS Memory	Tanmoy Kumar Paul, Md. Moyeen Uddin, Morshed Shafiul Hasan, Md. Shahadat Hosen	Dr. M.M. Shahidul Hasan
Implementation of Human Resource Management System(HRMS) and Dongle Device for Software Protection	Md. Golam Kibria, Md. Raisul Hossain, Md.Kamruzzaman, Samsul Arifin, Mulkur Rahman	Shammi Akter
Development of Web-Based Database System	Md. Iqbal Hossain, Md.Shofiqul Islam, Md.Khairul Anam, Md. Sarowar Hossain	Mohammad Mamun Elahi
Design and Implementation of Parallel Algorithms in JAVA Based Environment – RMI	Syeda Nabila Firdaus, Sajida Afrin, Shanchita Rahman, Syeda Nadia Firdaus	Shaila Rahman
Metadata Generation for Multimedia Database	Tanvir Razzaque, Md. Masudur Rahman, Dewan Abu-Raihan Alberuni, K.M.Shorifur Rahman	Mr. Quazi Ehsanul Kabir
Study of Algorithms for Automated VLSI Floorplanning and Routing with Band Minimizing	Nahid Al Mahmud, MarshalMd. Arifur Amran Choudhury, Syeda Afsa Bukhari, Mohammad Tanvir Hassan Maula	Suman Saha
Study of Systems of Linear	Mahfiur Rahman,	Subrata Saha

Programming	Sarder Gulshan Ara	
Developing Information Management System	Md. Ashikur Rahman, Md. Anisur Rahman Chowdhury, Mohammad Sedratul Amin	Mohd. Moniruzzaman
Developing Information Management System	Md. Ashikur Rahman, Md. Anisur Rahman Chowdhury, Mohammad Sedratul Amin	Mohd. Moniruzzaman
A Dynamic Programming Approach and Implementation to Sequencing Problem	Firoz Ahmed Bhuyan, Md. Rajesh Islam, David Thomas Gomes, Mahmood Un Nr Bin Imam	Manoj Banik
Study and Analysis of Different Data Compression Techniques	Mohammad Shamsuzzoha, Syeda Nasreen Jahan, Anjana Roy	Manoj Banik
A Computer Based Temperature Monitoring System	Md. Nazim Uddin, Md. Ershadur Rahman, Sheikh Saeem Ferdous	Ahmed Yousuf Saber
A Computer Based Temperature Monitoring System	Md. Asrafuddin Mazumder, Mohammad Akkas Ali, S.M. Meshbahul Alam	Ahmed Yousuf Saber
Study and Analysis of TCP	Md. Robiul Islam, Md. Akter Hasan, Husna Sheherzad, Shammi Akter	Dr. Shamsul Alam
Analysis of Multiplication Based Algorithms	Ahmed Kawser, Md. Rashidul Hasan, Md. Nizam Uddin, Md. Rashidul Islam	Mohammad Nurul Huda
Web Based Directory Service	Abu Basher Mohummad Bari, Samrat Moshir Rahman, Amirul Ahsan Rajib, Mahfuja Akter, Fahmida Akter	Md. Ibrahim Faisal
Automation of Banking Using Client Server Database System with Hardware Security	A.S.M. Ahasanul Alam, Arefa Akhter Nila, Denna Andaleeb Shahabuddin, A.M. Faisal Rahman	Abu Shamim Md. Arif
Developing of a Database Software for Statistical Analysis of Students Input, Distribution, Performance and Employment	Parvez Mahmud, Kaniz Fatema Nila, Md. Maruf Hossain, Muhammad Mizanur Rahman, Shakil Ahmed	Dr. Ali Asgar
TOFDM: A New Approach to Reduce the Average Power Ratio	Md. Amir Hossain, Md. Habibur Rahman, Sonia Armin, Sumaiya Taj	Mohd. Moniruzzaman
Study to the Existing Web Search Engine	Md. Tanvir Karim Khan, Md. Toffozul Haque, Md. Ashrafudoulla Khan, Md. Arifur Rahman	Md. Asifur Rahman
Implementation of Medical Database System	Pranab kumar goswami, Tapash kumar saha, Habibur rahman, Mahbobur rahman	Md. Aynal Haque
Performance Analysis of Turbo Codes in Wireless Communication	Md. Masum Hayder, Md. Shafiqul Islam, S.M. Monjurul Yusuf, Jabun Nahar	Md. Ashraf Uddin Bhuiyan

Optical Character Recognition Using Artificial Neural Network	Hammed Asheq Bin Majib, Sultana Shahnika Ferdousi, A.K.M. Manzurul Alam, A.K.M Habibullah	Md. Mahbubul Islam
GSM Smart Jammer: The Intelligent Frequency Spectrum Generator	Md. Redwanur Rahman, Khondoker Zahid Hossain, Mohsinur Reza, Mohd. Maruf Ul Alam, Aklima Islam Sworna	Md. Sazzad Hossin
GSM Smart Jammer: The Intelligent Frequency Spectrum Generator	Md. Redwanur Rahman, Khondoker Zahid Hossain, Mohsinur Reza, Mohd. Maruf Ul Alam, Aklima Islam Sworna	Md. Sazzad Hossin
Implementation of an Improved Algorithm for Adaptive Wireless Translation	Nusrat Rahman, Saiful Islam, Masum Ahammad	Md. Iqbal Bahar Chowdhury
Development of Location Management System in GSM Network Using GIS	Summon Kumor Das, A.T.M. Zabidur Rahman, Pabitra Kumar Mallik, Md. Wahadus Saba	Shaila Rahman
Development of Location Management System in GSM Network Using GIS	Summon Kumor Das, A.T.M. Zabidur Rahman, Pabitra Kumar Mallik, Md. Wahadus Saba	Shaila Rahman
Computer Based Medical Diagnosis	Mohammed Ilias Hossain, Kazi Delowar Hossain, Mohammad Saifullah, Mohammad Abdullah Al Moti	Dr.Md. Aynal Haque
Online Student Management System	Md. Mahfuzul Alam, Jamil Uddin Bhuiyan, Rubayed Nassim Siddiki, Md. Saiful Islam	Mrinmoy Barua
Comparison Between CDMA & GSM	Mohammad Amdad Ullah Chowdhury, Md. Waliul Hasan, Md. Saidul Islam, Md. Faruk Hossain Mazumder	Md. Ashraf Uddin Bhuiyan
Study and Implementation of SMTP	Mahbub-A-Aziz, Md. Suvo Suyen Khan, Abu Shadat Md. Sohel Rana, Md. Mahmudul Islam	Shammi Akter
Developing a Secured Information System in Wireless Communication	Asif Islam, Muhammad Arifuzzaman, Muhammad Abdul Kader Roni, Muhammad Touhidur Rahman Khan	Muhammad Abdur Rahim Mustafa
A Web-Based Application Using SSL(MCSSL) Communication	Ainun Nahar, Hazera Akter, Poly Sutradhar, Shahena Hoque, M.G. Muktaderul Kader	Shaila Rahman
A Simple Variation of K-Nearest Neighbor and a Variation of KNN Using Recursive Nearest Neighbor	S.M. Monjurul Islam, Md. Didarul Islam, Anamul Hasan Talukder, Mahamud Rahaman	Md. Anil Mahmud
Study and Implementation of Distributed Dynamic Channel	Md. Shariful Islam, Md. Hasan-Ul-Jahid, Md. Rashiduzzaman	Shaila Rahman

Allocation in Cellular Mobile Network	Rasel, Quamrun Nahar	
Mobile Banking System	Md. Sarowar Jahan, Md. Arifur Rahman, MuftiMd. Shams Tabrij, Md. Mominul Haque, Md. Al-Amin Sarkar	Md. Mahbubul Islam
Design & implementation of wireless application protocol	Towhid Hossain, Rownak Afrin, Raihana kulsum Chaity, S.M. Shaer	Md. Shazzad Hossain
Human Computer Symbiosis	Md. Tareq Al Abedin, Md. Khairul Bashar, Tasnim Sami Khan, Ahmed Reja, Md. Mamun Alom	Arif Reza Anwary
Interactive Digital Pen	Sakhawat Hosen, Nandita Roy, Arpita Banik, Susmita Das	Arif Reza Anwary
A Dynamic and Scalable Routing Method for Efficient Data Aggregation in WSNs	Md. Taufiqul Islam, Mahjain Tazri, Md. Mahmudur Rahman Bappi, Abu Syed Firoz, Taslima Akter	Kazi Chandrima Rahman
Analysis of Chatting with N-Gram Language Models	Faria Hossain, Siza Sarker, Kazi Rumana Sharmin, Shamima Akhter Tania	Sheikh Muhammad Sarwar
Study the Accessing Technique of Wireless Network Under IEEE 802.11	Badrunnessa Sultana, Nazmun Nahar Snigdha, Jahida Khatun, Sharmin Sultana Mitu	Shaila Rahman
JXTA & Web Services Using Secret Key Based Encryption	Sabiha Hasan	Upoma Kabir
Study on Association Rule Mining	Al- Asma Begum, Mahmudul Hasan, Yeasir Fattah Rumi	Md. Ashraf Uddin Bhuiyan
Adaptive Image Denoising Based on Edge Detection	Mohammad Mahfuz Hossain, Mahmudul Hasan, Tasneem Binte Alam, Hassan Osman	Md. Anil Mahmud
Temperature Control System Using Microcomputer	Waliul Islam, Md. Kamrul Islam, Md. Zulfiker Ali Khan, Mohammad Ruhul Amin	Ahmed Yousuf Saber
Display of High Frequency Signal Using Microcomputer	Md. Imran Khan, Md. Mostafa Rahman, Kazi Tareen Wali, Mst. Shafinaz Khatun	Ahmed Yousuf Saber
Analysis with Optical Mark Recognition and Design of a Practical Approach	Md. Istiaque Hossain, Khan Mohummad Kaisar, Shahriar Ahmed Chowdhury	Mohshin Uddin Anwar
Development of Multimedia System and Indexing of Multimedia Database: Amar Ekushey	Mohammad Rashidul Hasan, Syed Yaminul Haque, Alamgir Kabir Rony, K.M. Kamrunnahar	Engineer Mujibur Rahman
Design and Implementation of an E-Commerce Site for a Virtual Shopping Mall	Smritee Mohalder, Md. Rashaduzzaman	Shaila Rahman
Intelligent Obstacle Avoidance Technique Based on Neural	Md. Arif Reza Anwary	Professor Yong-Gi Kim, Gyeongsang National

Network and Bk-Product of Fuzzy Relation for Autonomous Underwater Vehicle		University, South korea
Handwritten Character Recognition from Human Gesture	Christina Halder, Sanjoy Kumar Mitra	Sheikh Muhammad Sarwar
Intellectual Home Automation System	Sheikh Shimul Ahmmed, Masum, Suborna Roy, Tonmoy Biswash, Al-Amin Utsha	Kazi Chandrima Rahman
An Approach of QR Code Integration on Social Networking System	Abdul Halim Rana, Arif Ahamed Joy, Abdan Shakur, Abu Sufian, Eashika Naznin	Kazi Shamsul Arefin
BRANNS Simulation for Cloud Network Security	Rizvia Belal, Farhana Yesmin, Agmerri Ara Bitthi, Md.Khairul Alam, Most. Tazim Ina Ishrat Sharm	Shaila Rahman
Study on wireless sensor network (wsn) and propose an approach to increase the longevity of wsn.	Jobeda Akhter Jui Md. Yousuf Ali Ayesha Siddika Md. Ranu Hossen Md. Nasar Rahman	Shaila Rahman
Study & Analysis on Cloud Computing & Cryptography	Tahrima Arjumand, Jakia Sultana Md. Makinul Hasan Khan Nasim Md. Roknuzzaman	Shammi Akhter
Privacy-Preserving Two-Party k-Means Clustering in Malicious Model	Rahena Akhter, Rownak Jahan Chowdhury, Tamzida Islam Nusrat Rubaiyat	Mohammad Shahriar Rahman
A Novel and Efficient Data Structure to Facilitate Dictionary Search using Widcards	Khandker Tafiqul Islam Bindu Rani Das Md. Ashrafujjam Mondol Sofura Aktar	Sheikh Muhammad Sarwar
Object Identification Using Shape Recognition Technique	Md.Shakil Khan Raiyana Alam Md.Riazul Islam Abdullah Al Naser	Arif Reza Anwary
Morphological Analysis of Bangla Root Words for Universal Networking Language(UNL)	Mir Md. Nahidul Hasan Shah Md. Ferdaus Khaled Rusmat Jahan Mamun Sajjad Hossain	Muhammad Firoz Mridha
Reducing Power Consumption in Networking Devices through Energy Efficient Interface Management (EEIM)	Syed Abdul Sarek, Ferdous Ara Mostofa, Mahmudul Hasan	Md. Anowarul Abedin
Mapping IPv6 Addresses against IPv4 Addresses in the Gateway of an Autonomous System: A Novel Migration Mechanism from IPv4 to IPv6	Debasish Roy, Rudmila Sarah Anam, Amranul Haque, Ashraful Islam, Eftakher Hasan	Md. Anowarul Abedin
A New Encryption Algorithm for Network Security	Md. Motalib Miah, Md. Jhirul Islam, Md. Fuad Hasan, Md. Sarfaraj Alam Chowdhury	Kazi Chandrima Rahman
An Efficient Dynamic Routing Protocol For Wireless Sensor	Taslina Akter, Abu Syed Firoz, Md. Mahmudur Rahman Bappi,	Kazi Chandrima Rahman

Networks	Mahjabin Tazri, Md. Taufiqul Islam	
Efficient Bearing Fault Diagnosis by Extracting Intrinsic Fault Information using Envelope Power Spectrum	Md. Rashedul Islam, Abdul Kawsar Tushar and Jong-Myon Kim	Md. Rashedul Islam
Chord Angle Deviation using Tangent (CADT), an Efficient and Robust Contour-based Corner Detector	Mohammad Asiful Hossain and Abdul Kawsar Tushar	Mohammad Asiful Hossain
Handwritten Arabic Numeral Recognition using Deep Learning Neural Networks	Akm Ashiquzzaman and Abdul Kawsar Tushar	Abdul Kawsar Tushar
Single Cell Mass Measurement from Deformation of Nanofork (Awarded 1st best paper for poster session)	Md. Fazly Rabby Akash, Md. Al – Amin Sheikh, Md. Habibur Rahman and Mohd Ridzuan Ahmad	Md. Habibur Rahman
A Novel Resource Scheduling Approach to Improve the Reliability of Shuffle-Exchange Networks	Farshad Mashhadi, Muhammad F. Mridha and Abu Asaduzzaman	Muhammad F. Mridha
Image Augmentation by Blocky Artifact in Deep Convolutional Neural Network for Handwritten Digit Recognition	Md Shopon, Nabeel Mohammed and Md Anowarul Abedin	Nabeel Mohammed
VECTOR: An IP-based Remote Combat Robot. International Journal of Computer Applications	A S Zaforullah Momtaz, Molla Rashied Hussein and Nahida Sultana Chowdhury	A S Zaforullah
Design and Simulation of a Novel Classification Framework for Separating Sentiment from Assorted Game Related Tweets	Syeda Tasmiah Islam, Ahmad Al-Sajid and Molla Rashied Hussein	Molla Rashied Hussein
'Optimal Obstructed Sequenced Route Queries in Spatial Databases	Anika Anwar, Tanzima Hashem	Anika Anwar
Adaptive Secured Multicast Key Management with Re-Keying Process	J. I. Rafiq, A. A. Omar, A. Chakraborty and A. Yusuf	J. I. Rafiq
Krill Herd Based Clustering Algorithm for Wireless Sensor Networks	M. Shopon, M. A. Adnan, and M. F. Mridha	M. A. Adnan
Efficient Bearing Fault Diagnosis by Extracting Intrinsic Fault Information using Envelope Power Spectrum	Md Rashedul Islam, Abdul KawsarTusharand Jong–myon Kim	Md Rashedul Islam
Feature Selection Techniques for Increasing Reliability of Fault Diagnosis of Bearings	Md Rashedul Islam, M MManjurul Islam and Jong–myon Kim	Md Rashedul Islam

A Hybrid feature selection scheme based on local compactness and global separability for improving roller bearing diagnostic performance	Manjurul Islam, Rashedul Islam and Jong-Myon Kim	Md Rashedul Islam
Reliable Fault Diagnosis of Bearings Using Distance and Density Similarity on an Enhanced k-NN	DileepAppana, Rashedul Islam and Jong-Myon Kim	Md Rashedul Islam
Acoustic Emission Sensor Network Based Fault Diagnosis of Induction Motors Using a Gabor Filter and Multiclass Support Vector Machines	Md. Rashedul Islam, Islam, J. Uddin, J.-M. Kim	Md Rashedul Islam
Distance and Density Similarity Based Enhanced k-NN Classifier for Improving Fault Diagnosis Performance of Bearings	Md. Sharif Uddin, Rashedul Islam, Sheraz Ali Khan, Jaeyoung Kim, Jong-Myon Kim, Seok-Man Sohn and ByeongKeun Choi	Md. Sharif Uddin
Multi-core Accelerated Discriminant Feature Selection for Real-time Bearing Fault Diagnosis	Md. Rashedul Islam, Md. Sharif Uddin, Sheraz Khan, Jong-Myon Kim, and Cheol-Hong Kim	Md. Sharif Uddin
A Hybrid Feature Selection Scheme for Reducing Diagnostic Performance Deterioration Caused by Outliers in Data-Driven Diagnostics	Myeongsu Kang, Md. Rashedul Islam, JaeYoung Kim, Jong-MyonKim, Michael Pecht	Md. Rashedul Islam
Texture Analysis Based Feature Extraction Using Gabor Filter and SVD for Reliable Fault diagnosis of an Induction Motor	Md. Rashedul Islam, Jia Uddin, Jong-Myon Kim	Md. Rashedul Islam
A New Two-Dimensional Fault Diagnosis Model of Induction Motors using Gabor Filter on Segmented Images	Jia Uddin, Md. Rashedul Islam, Jong-Myon Kim	Md. Rashedul Islam
Discriminant feature distribution analysis-based hybrid feature selection for online bearing fault diagnosis in induction motors	Md. Rashedul Islam, Sheraz Ali Khan, and Jongmyon Kim	Md. Rashedul Islam
Optimizing Controller Area Network System for Vehicular Automation	Moniruzzaman, M.*, Asaduzzaman, A., and Mridha, M.F.	Muhammad Firoz Mridha
A Novel Semantic Knowledge Engine Using Automated Knowledge Extraction from World Wide Web	Mabbu, V.*, Asaduzzaman, A., and Mridha, M.F.	Muhammad Firoz Mridha
<i>Improved dominant local binary pattern texture features</i>	Niraj P. Doshi, Gerald Schaefer, Shahera Hossain	Shahera Hossain
<i>Rotation invariant compound LBP texture features</i>	Niraj P. Doshi, Gerald Schaefer, Shahera Hossain	Shahera Hossain

APPENDIX D

MEMBERSHIP OF PROFESSIONAL SOCIETIES

Name of Faculty Member	Member	Name of professional Society	Year of Admission
Aloke Kumar Saha	Member No: 94260843	IEEE	2008
Dr. Bilkis Jamal Ferdousi	Member No: 94265136	IEEE	2017
Dr. Md. Rashedul Islam	Member No: 91218810	IEEE	2017
Molla Rashied Hussein	Member No: 94258768 Member No: 651709	Institute of Electrical and Electronics Engineers (IEEE). Internet Society (ISOC), Bangladesh Dhaka Chapter	2012 2017
Dr. Nasima Begum	Member No: 93741992 Member No: 1611216 Member No: 7262136	IEEE Bangladesh Section IEICE, Japan Association for Computing Machinery (ACM)	2014 2015 2014
Md. Rajibul Islam	Member No: 1118468 Member No: 102240 Member No: 80332169	Student member of Optical Society of America (OSA) Association of Engineers (IAENG) International Association of Computer Science and Information Technology (IACSIT)	2015 2011 2010
Md. Imran Bin Azad	Member No: AM-10772	Associate Member, Bangladesh Computer Society	

APPENDIX E

HONORS AND AWARDS RECEIVED BY THE FACULTY MEMBERS

Name of the Faculty member	Name of the Award	Year
Dr. Bilkis Jamal Ferdosi	Best International M.Sc. Student Award and Scholarship from Otto-von-Guericke Universität, Magdeburg, Germany	2004
	Jahangirnagar University Merit Scholarship in each year of B.Sc. (4 year)	1993-1996
	Government Scholarship in High school level	1986
	Government Scholarship in Primary School level	1983
Dr. Md. Rashedul Islam	Best Paper award, Winter Conference of the Korea Society of Computer and Information, South Korea	2013
	Best Paper award, KISPS Summer Conference 2014, South Korea	2014
	Excellent Project Supervision award, UAP	2017
Dr. Mohammad Shahriar Rahman	The Best Paper award at the 6th International Conference on Advanced Data Mining and Applications (ADMA), 2010, China	2010
	Awarded Outstanding Performance Award from JAIST for PhD.	2012
	Awarded Monbukagakusho Scholarship, Govt. of Japan.	2006-2012
	Awarded Excellent Student Award from The Institute of Electronics, Information and Communication Engineers (IEICE)	2009
	Placed 15th position in the combined merit list of Dhaka board in SSC.	1997
Dr. Shahera Hossain	Awarded Rotary Yoneyama Scholarship, Japan	2010-2013
	Awarded JASSO Honors Scholarship	2010
	Awarded Uemura Scholarship	2009
	Meisenkai Research Award	

		2008, 2010
Md. Firoz Mridha	Award: Best Paper Award at the IEEE International Conference on Advances in Electrical Engineering (ICAEE), Dhaka, Bangladesh, December, 2015.	2015
A S Zaforullah Momtaz	Awarded VC's Gold Medal for securing the highest percentage of marks among all the recipients of Bachelor's Degree in the passing session.	2011
Md. Akhtaruzzaman Adnan	Malaysian International Scholarship (MIS) from Ministry of Higher Education, Malaysia for MSc studies	2011
	Organization of Islamic Cooperation (OIC) Scholarship for BSc studies	2005
Mohammad Asiful Hossain	Dean's List award in CSE, BUET	2009 and 2011
Dr. Nasima Begum	Research Grant Award for Encouragement of Students, Okayama University, Japan	(2013-2014)
	Research Grant Award for Conference Publications, Okayama University, Japan	(2013)
	Research Grant Award for Encouragement of Students, Okayama University, Japan	(2012-2014)
	Research Grant Award for Encouragement of Students, Okayama University, Japan	(2012)
	Research Grant Award for Conference Publications, Okayama University, Japan	(2011-2012)
	Professor's Funding for Doctoral Students, Okayama University, Japan	(2012)
	Achieved 1st place position in Japanese Language Course, Okayama University	(2006)
	University Supplementary and Talent pool Scholarship award by Government of Bangladesh on Bachelor of Science result	
	5th Runner Up, The Intra-JU Programming Contest (IJUPC-2003), Jahangirnagar University	(2003)
Dr. Md. Rajibul Islam	Best Paper Award (ISCC 2011, Jeddah, Kingdom of Saudi Arabia).	Dec, 2011
	Bronze medal: Few-Mode Fibre Grating Sensor at the PECIPTA 2015 (International Conference and Exposition	Dec, 2015

	on Inventions of Institutions of Higher Learning), 4-6 December 2015, Kuala Lumpur Convention Centre, Malaysia.	
Abdul Kawsar Tushar	Best Paper Award, Fifth IEEE Region 10 (Asia Pacific) Humanitarian Technology Conference Dean's List Award (BUET), University Merit Scholarship (BUET)	2017 2014, 2015, 2016 2013-2017
Risul Islam	Dean's List Award (BUET), University Merit Scholarship (BUET)	2012, 2014, 2015 2015
Gazi Md. Hasnat Zahan	1st prize in Inter House Bengali Debate Competition Merit Prize(2nd) from Barisal Cadet College Government Talent Pool Scholarship - S.S.C Certificate in ATN National inter-college Bengali Debate competition 2nd Prize in Inter House English Parliamentary Debate competition 3rd Prize in Inter House Bengali Debate competition Best Organizer in Inter House Currents Affairs Display(CAD) Competition Government Talent pool Scholarship - H.S.C IUT OIC Scholarship	2005 2006 2007 and 2008 2008 2009 2005-2008 2008 2010-2013 2011-2013
Afia Afrin	2nd Runner-up, Microsoft Imagine Cup-2016, Bangladesh national final round.	2016
Abdullah Al Omar	7 VC list Award 1 Dean list Award.	2013-2016

APPENDIX F

COLLABORATIVE PROGRAMS

I. With National Research Laboratories Membership of National and International Bodies

Several Departments of UAP have been accredited by relevant professional bodies of the country and International Institutions; e.g.

- **Institute of Architects (IAB)**
- **Board of Accreditation for Engineering and Technical Education (BAETE), Bangladesh**
- **Institute of Engineers Bangladesh (IEB)**
- **Pharmacy Council of Bangladesh**

II. International Organizations/Laboratories/ Institutions

UAP enjoys collaborative ties with a number of reputed foreign and national Universities, institutions of higher education and research in foreign countries, such as

- **USA:** The University of Baltimore, Virginia Polytechnic Institute and State University, South Dakota School of Mines and Technology, Purdue University, De Vry University, etc. UAP is currently running 3+1 degree programs i.e. students can complete their first three years at UAP and the final year in one of these universities. They can be awarded the degree from either of these institutions, which indicate the quality of teaching and research at this University.
- **Canada:** The University of Windsor
- **Australia:** The University of Western Sydney, University of Canberra
- **Ireland:** Griffith College of Dublin
- **Japan:** Port and Airport Research Institute (PARI), Japan Concrete Institute (JCI). Under these collaborations, the first batch of BBA students completed graduation at The University of Baltimore and a large number of CE students completed research programs at Port and Airport Research Institute (PARI).

III. Industry-Institution Interaction

We have got the Spectrum Engineers Consortium and Plasma Plus involved with us. Similar articulation with some other organizations is still underway. This collaborative effort will include training students, guiding students' projects and industry-related suggestions to be incorporated while developing programs and curricula. The above organizations have come up with their suggestions and training programs. To enhance the quality of education even further, Department of CSE of UAP has established an Industry-Academia Collaboration with QUBEE, Augere Wireless Broadband Bangladesh Ltd (AWBBL). As part of the collaboration, following activities are performed by the two parties on a regular basis:

1. UAP-CSE visits selected Hub Sites, Aggregation Sites and Access Sites with the final year students as part of a one-day long Industrial Tour (twice in a year). A representative from QUBEE demonstrates the practical side of the theoretical aspects.
2. UAP-CSE invites QUBEE delegates in some of the Networking and Security related seminars, workshops and conferences organized by UAP.
3. Network and Communication Research Group (NCRG) of CSE Department is conducting research on real-life, industry-oriented problems. QUBEE will share necessary relevant information, if any. The outcome of the research can be accessed by both parties.
4. BdOSN and University of Asia Pacific has arranged Data Science related Workshop and Seminar concentrated on Big Data Processing and Distributive Computing.

5. Leveraging ICT for Growth, Employment and Governance is a Project of Bangladesh Computer Council (BCC) under the Ministry of Posts, Telecommunication and Information Technology. The Project has been launched in January 2013 aiming to develop a Vibrant and Healthy Information Technology (IT) and Information Technology-Enabled Services industry in five years by identifying the strategies, programs and investment needed for the country to leverage ICT for economic growth and competitiveness. In UAP LICT course program started in 2014 and still running.

To enhance the professional training Department of CSE of UAP has signed MoU with EATL (ICT organization) on 20th January 2014. Purpose of the MoU is to render support, services and solutions in the field of Mobile applications training, development and R&D support with the participation of students of the university under guidance of the faculty members and management of the university. EATL will carry out the following activities:

1. Provide professional training on various topics necessary for a successful mobile application development in Android and IOS platform.
2. Coordinate with the faculty and team members (students) to track the progress of the project and provide support where necessary.
3. Provide support for improving user interface (UI) and user experience (UX), so that the quality of the application is assured.
4. Provide feedback from users and expert to further upgrade the quality and acceptance in the market.

SOME IMPORTANT FACTS ABOUT UAP

- UAP is the first Bangladeshi private university to have the membership of the **Association of Commonwealth Universities, UK**.
- In fact, the Pharmacy and Civil Engineering Departments of UAP were the first among private universities to earn such accreditations. UAP graduates are therefore eligible to be members of professional bodies like **Institute of Engineers Bangladesh (IEB)**, **Institute of Architects Bangladesh (IAB)**, **Pharmacy Council**, and several of them have already earned their memberships in these prestigious bodies.
- Moreover, UAP is a Member of **American Chamber of Commerce (AmCham)**, **University of Asia Pacific Region**, **The Association of Universities of Asia and the Pacific** and **International Association of University Presidents (IAUP)**.

Recent update regarding academic collaboration

Memorandum of Understanding for Academic Exchange and Cooperation between Indiana University-Purdue University Fort Wayne (IPFW) and University of Asia Pacific:

Vice Chancellor of UAP Prof. Dr. Jamilur Reza Choudhury and Brian R. Mylrea, Director of International Education, Indiana University – Purdue University Fort Wayne (IPFW) signed a Memorandum of Understanding on 15 March 2013 at UAP Conference Room, Dhaka to encourage academic exchange and cooperation between the two institutions. On this occasion of the MOU signing ceremony Vice Chancellor Prof. Dr. Jamilur Reza Choudhury along with the Pro Vice Chancellor Prof. Dr. M. R. Kabir and Heads of the Departments of UAP welcomed Mr. Brian R. Mylrea. The agreement shall take effect on 15th day of March 2013 and will be in effect till 15th of March, 2018.

APPENDIX G SAMPLE COURSE OUTLINE

University of Asia Pacific (UAP) Department of Computer Science and Engineering (CSE)

Course Outline

Program:	Computer Science and Engineering (CSE)
Course Title:	Database System
Course Code:	CSE 321
Semester:	Spring-2017
Level:	5 th Semester
Credit Hour:	3.0
Name & Designation of Teacher:	Dr. Md. Rashedul Islam, Associate Professor
Office/Room:	701 (B), 7th Floor, teacher's compound
Class Hours:	Monday: 12:30-02:00 p.m. & Wednesday: 09:30-11:00 a.m.
Consultation Hours:	Tuesday: 02:30-04:30 p.m.
e-mail:	rashed.cse@uap-bd.edu
Mobile:	+8801921095904
Rationale:	Required course and a pre-requisite to System Analysis and Design, and Visual and Web Programming in the CSE program. This knowledge is very important for the field of software development.
Pre-requisite (if any):	CSE 205: Data Structure

Course Synopsis:

Introduction: Purpose of DBMS, Entity-Relationship Model, Relational Model, Integrity Constraints: Referential Integrity, Functional Dependency, Relational Database Design: Decomposition and Normalization, Storage and File Structure: Database Backup and Recovery in Disaster, Indexing and

Hashing, Structured Query Language (SQL), Procedural Language (PL), Stored Procedures (SP), Trigger, Cursor, Function, Transactions, Job Scheduling, Concurrency Control, Database Architecture: Parallel and distributed Databases, Security System, Database Servers Configuration, Data Transmission Services (DTS), Performance Tuning and Optimization.

Course Objectives (CO):

The objectives of this course are:

1. To **provide** knowledge and understanding on principles of database management system, database technology, and applications.
2. To **introduce** how to represent data in a database and how to manage for an organization.
3. To **Learn** conceptual database modeling, professional relational database design, and database language (SQL)
4. To **enable** the student to acquire skills in solving business problem using the fundamentals of database modeling, enterprise analysis and design.
5. To **emphasize** on efficient database modeling, quality enhancement of database transaction, concurrency control and security.

Learning Outcomes (LO):

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

1. **Describe** the objective of DBMS, database concept, and structure.
2. **Explain** terms related to database design and management
3. **Understand** and **apply** normalized concept of data modeling and database development process knowledge.
4. **Use** different DBMS and the database language (SQL) for managing database of industry.
5. **Analyze** and enhance database design performance.
6. **Design and develop** logical database design for big industrial and business process.

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

Linkage of LO with Assessment Methods & their Weights:

LO	Assessment Method	(%)
1 – 3	Quiz	10
1 – 6	Class attendance	10
4,5,6	Assignment	10
1– 4	Midterm Exam	20
1 – 6	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
Describe the objective of DBMS, database concept, and structure.	√											
Explain terms related to database design and management	√											
Understand and apply normalized concept of data modeling and database development process knowledge.		√	√	√								
Use different DBMS and the database language (SQL) for managing database of industry.		√	√		√							
Analyze and enhance database design performance.		√		√	√							
Design and develop logical database design for big industrial and business process.			√	√	√				√	√		

Lecture Schedule

Week	Topics	Reading Materials
1	Introductory Class, Introduction to DBMS, File System vs DBMS, Database Applications	Chap: 1, Database System Concept (6th Edition) and lecture slide
2	Instance, Schema, Data Abstraction, DBMS Components, Language, User & Administrators.	Chap: 1, Database System Concept (6th Edition) and lecture slide
3	Data Model, Database Design and E-R Model (Model, Attributes, Mapping Relations, Keys etc)	Chap: 2,7, Database System Concept (6th Edition) and lecture slide
4	E-R Schema to Table, Relational Models, Relational Algebra	Chap: 2,7, Database System Concept (6th Edition) and lecture slide
	CT-1	
5,6	Query Languages (SQL)	Chap: 3, Database System Concept (6th Edition) and lecture slide
7	Advance SQL, Integrity Constraints, Embedded	Chap: 4,5, Database System

	SQL.	Concept (6th Edition) and lecture slide
	CT-2	
8	Mid-Term Exam	
9	Functional Dependency, Normalizations	Chap: 8, Database System Concept (6th Edition) and lecture slide
10	Application Design and Development	Chap: 9, Database System Concept (6th Edition) and lecture slide
11	Storage and File Structure, Index and Hashing	Chap: 10,11, Database System Concept (6th Edition) and lecture slide
12	Transaction, Concurrency Control	Chap: 14,15, Database System Concept (6th Edition) and lecture slide
	CT-3	
13	Deadlock, Recovery System	Chap: 16, Database System Concept (6th Edition) and lecture slide
14	Database System Architecture,	Chap: 16, Database System Concept (6th Edition) and lecture slide
15	Parallel & Distributed Database	Lecture note & slide
16	Overview and CT4	
	CT-4	
	Final Exam	

Required References: Database System Concept (6th Edition)
- Silberschatz, Korth, Sudarshan

Recommended References: Database Management System (4th Edition)
- Raghu Ramakrishna, Johannes Gehrke

4.

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.
No late or partial assignments will be acceptable. There will be no make-up quizzes.

Appendix-1: Generic Skills

No.	Generic Skills
1.	Engineering Knowledge

2.	Problem Analysis
3.	Design/Development of Solutions
4.	Investigation
5.	Modern Tool Usage
6.	The Engineer and Society
7.	Environment and Sustainability
8.	Ethics
9.	Communication
10.	Individual and Team Work
11.	Life Long Learning
12.	Project Management and Finance

Generic Skills (Detailed):

1. **Engineering Knowledge (T)** -Apply knowledge of mathematics, sciences, engineering fundamentals and manufacturing engineering to the solution of complex engineering problems;
2. **Problem Analysis (T)** – Identify, formulate, research relevant literature and analyze complex engineering problems, and reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences;
3. **Design/Development of Solutions (A)** –Design solutions, exhibiting innovativeness, for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, economical, ethical, environmental and sustainability issues.
4. **Investigation (D)** Conduct investigation into complex problems, displaying creativeness, using research-based knowledge, and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions;
5. **Modern Tool Usage (A & D)** -Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations;
6. **The Engineer and Society (ESSE)** -Apply reasoning based on contextual knowledge to assess societal, health, safety, legal, cultural, contemporary issues, and the consequent responsibilities relevant to professional engineering practices.
7. **Environment and Sustainability (ESSE)** -Understand the impact of professional engineering solutions in societal, global, and environmental contexts and demonstrate knowledge of and need for sustainable development;
8. **Ethics (ESSE)** –Apply professional ethics with Islamic values and commit to responsibilities and norms of professional engineering code of practices.
9. **Communication (S)** -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;
10. **Individual and Team Work (S)** -Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
11. **Life Long Learning (S)** -Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
12. **Project Management and Finance (S)** -Demonstrate knowledge and understanding of engineering management and financial principles and apply these to one's own work, as a member and/or leader in a team, to manage projects in multidisciplinary settings, and identify opportunities of entrepreneurship.

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

Prepared by:

Checked by:

Approved by:
(Head of the Detp.)

APPENDIX H

ACADEMIC CALENDAR



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



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
22	23	24	25	26	27	28
29	30	31				

1
2
3

November '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	22	23	24	25
26	27	28	29	30		

4
5
6
7

December '17

S	M	T	W	T	F	S
31					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

Mid
WV
8
9

January '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	31			

10
11
12
13
14

February '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			

Prep
Exam
Exam

March '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	31

Result
RE

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					

APPENDIX I

QUESTION TEMPLATES

Course File Checklist Record

For each course of a program there need to be one course file prepared and maintained by the respective course teacher, containing following items:

- Course Outline (IQAC Format)
- Attendance Record of the Students
- Class test/Quiz and Midterm Exam questions
- Moderated and accepted question of Semester Final Exam
- Examination Results and Grade Analysis Graph
- Blank IQAC Templates for preparation and Moderation of Semester Final Exam Question and Scrutiny of Answer Scripts
- Copy of Answer Scripts (Highest, Medium, Lowest) for the Exams and Class Tests (Inclusion of this item is subject to approval through AMCC)

After the end of the semester, the course file will be submitted to the Head of the Department for preservation. Duly filled IQAC Templates for preparation and Moderation of Semester Final Exam Question and Scrutiny of Answer Scripts will be also preserved by the Head of Department/ Moderation committee of respective Department.

General Guidelines for Examiner

GENERAL GUIDELINES FOR EXAMINER

- The examiner would use a pen with red ink.
- Marks should be clearly visible (it should not be at the very top or at the very bottom).
- Marks should be legible (For ex., the scrutinizer should not be in confusion whether the marks given is 2 or a (✓) tick mark)
- Spellings and Grammatical mistakes should be pointed out (to the extent possible)
- The examiner should keep some evidences that s/he has gone through all the pages of the answer script (by giving at least one tick mark on the page(s); in other words, the scrutinizer should feel that the pages are “seen” by the examiner).

TEMPLATE: MODERATOR REPORT OF QUESTION PAPER

TEMPLATE: MODERATOR REPORT OF QUESTION PAPER

University of Asia Pacific

Department:

Program:

Final Examination, Semester:

Course Code:

Course Title:

Credit Hr:

Time:

Total Marks:

Name & Designation of the Moderator(s):

A. Evaluation of Question Paper:

SL	Items	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)

.....
.....
.....

Moderated and Accepted ☐

Signature of the Moderator(s)

Date:

TEMPLATE: SCRUTINIZER REPORT ON ANSWER SCRIPTS

TEMPLATE: SCRUTINIZER REPORT ON ANSWER SCRIPTS

University of Asia Pacific

Department:

Final Examination, Semester:

Program:

Course Code

Course Title

Credit Hr:

Time:

Total Marks:

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]

.....
.....
.....

Signature of Scrutinizer:

Date (Answer script received):

Date (Answer script Delivered):

APPENDIX J

MEETING MINUTES

Sample Departmental Meeting Minute

Minutes of
1st Department Council Meeting of 2017
Department of CSE

At a Glance

Date	22 January 2017, Sunday
Time	12:00 PM
Venue	Seminar Room, 7 th Floor, UAP
Preparation Date	23 February 2017, Thursday
Revision Date	02 March 2017, Thursday
Present	Chair: Mr. Alope Kumar Saha, Associate Professor and Head, CSE, UAP Members: All Full-time Faculty Members of CSE Department
Copies	All Full-time Faculty Members of CSE Department

Meeting Ref. (Agenda)	Prev. Meet- ing Ref.	Minutes (M) / Actions(A) / Information(I)	Action		
			Who	When	Status
22Jan17A 1 (Agenda-1)	18Dec16 A1-3	M: Review and Implementation of Previous Meeting Minutes I: Agenda from the previous meeting was reviewed and no agenda was found unimplemented.	N/A	N/A	Closed
22Jan17A 2 (Agenda-2)	10Nov16 A2	M: Academic Progress of Fall 2016 (Bi-Semester and Trimester) I: No irregularity was found in the academic progress of both Bi-Semester and Trimester for Fall 2016.	N/A	N/A	Closed
22Jan17A 3 (Agenda-3)	N/A	M: ICPC 2017 I: UAP will host ICPC 2017 in possibly last week of October 2017.	ICPC Committee	N/A	Open

Meeting Ref. (Agenda)	Prev. Meeting Ref.	Minutes (M) / Actions(A) / Information(I)	Action		
			Who	When	Status
22Jan17A 4 (Agenda-4)	N/A	M: ICCIT 2017 I: UAP will host ICCIT 2017 in possibly last week of December 2017. MoU with IEEE is in progress. Buying license of EasyChair (a conference management system) is in progress as well.	ICCIT Committee	N/A	Open
22Jan17A 5 (Agenda-5)	N/A	M: Club Activities I: Newly joined full-time faculty members were assigned to various CSE clubs.	N/A	N/A	Closed
22Jan17A 6 (Agenda-6)	N/A	M: Miscellaneous I: N/A	N/A	N/A	Closed

Minutes in Detail

The 1st Department Council Meeting of CSE, UAP in 2017, was held on **22 January 2016 at 12:00 PM** in the seminar room, 7th Floor, UAP. The meeting was chaired by Mr. Alope Kumar Saha, Associate Professor and Head, Department of Computer Science & Engineering. All full-time Faculty members were present during the meeting.

The following agenda were present:

22Jan17A1(Agenda-1):

Agenda from the previous meeting was reviewed and no agenda was found unimplemented.

22Jan17A2 (Agenda-2):

The agenda regarding Fall 2016 Semester Progress was discussed and no irregularity was found in the academic progress of both Bi-Semester and Trimester for Fall 2016.

22Jan17A3(Agenda-3):

The agenda regarding ICPC 2017 was discussed and it was announced that UAP will host ICPC 2017 in possibly last week of October 2017.

22Jan17A4(Agenda-4):

The agenda regarding ICCIT 2017 was discussed and it was announced that UAP will host ICCIT 2017 in possibly last week of December 2017. MoU with IEEE is in progress. Buying license of EasyChair (a conference management system) is in progress as well.

22Jan17A5 (Agenda-5):

The agenda regarding Club activities was discussed and newly joined full-time faculty members were assigned to various CSE clubs.

22Jan17A6 (Agenda-6):

There were no miscellaneous agenda to be discussed.

Since there had not been any other agenda to be discussed, the meeting was declared closed by the Head of the Department, thanking all for their active participation.

Mr. Alope Kumar Saha

Associate Professor and Head
Department of Computer Science and Engineering (CSE)
University of Asia Pacific (UAP)
02 March 2017

Distribution:

All Full-time Faculty Members, Department of CSE, University of Asia Pacific

Information:

Head, Department of CSE, University of Asia Pacific

Sample Exam Committee Meeting Minute

Meeting Minutes CSE Exam Committee Meeting

At a Glance

Date	15 December 2016, Thursday
Time	02:30 PM
Venue	Conference Room (7 th Floor), CSE, UAP
Preparation Date	17 December 2016, Saturday
Present	<p>Chair: Mr. Alope Kumar Saha, Associate Professor and Chair, CSE Exam Committee, UAP</p> <p>Members: Dr. Bilkis Jamal Ferdosi, Associate Professor, CSE, UAP Dr. Md. Rashedul Islam, Associate Professor, CSE, UAP Ms. Shaila Rahman, Assistant Professor, CSE, UAP Ms. Shammi Akhtar, Assistant Professor, CSE, UAP Mr. Md. Firoz Mridha, Assistant Professor, CSE, UAP</p> <p>Member Secretary: Mr. Molla Rashied Hussein, Assistant Professor, CSE, UAP</p>
Copies	All Full-time Faculty members of CSE Department

Meeting Ref. (Agenda)	Prev. Meeting Ref.	Minutes (M)/Actions(A)/Information(I)	Action		
			Who	When	Status
CEC15Dec 16A1 (Agenda-1)	CEC09 Jun 16A1	<p>M: Exam Hall opening and closing time</p> <p>I: Exam hall will be opened 15 (fifteen) minutes before Mid exam starts. It will be closed 05 (five) minutes before Mid exam starts. It will be re-opened 05 (five) minutes after Mid exam starts.</p>	All Invigilators	During Mid Exam Week	Closed
CEC15Dec 16A2 (Agenda-2)	CEC09 Jun 16A2	<p>M: Exam Hall surroundings</p> <p>I: No student can stand or roam around in front of exam halls during Mid exam time.</p>	All Invigilators	During Mid Exam Week	Closed
CEC15Dec 16A3 (Agenda-3)	CEC09 Jun 16A3	<p>M: Leaving Exam Halls</p> <p>I: No student can leave the exam hall before finishing 01 (one) hour Mid exam.</p>	All Invigilators	During Mid Exam Week	Closed

Meeting Ref. (Agenda)	Prev. Meeting Ref.	Minutes (M)/Actions(A)/Information(I)	Action		
			Who	When	Status
CEC15Dec 16A4 (Agenda-4)	CEC09 Jun 16A4	M: Invigilator and Hall-in-Charge Reporting I: Invigilators have to report of their presence 30 (thirty) minutes before Mid exam starts. Invigilators are asked to follow the strict time table as per duty roster. Invigilators are asked to resolve any disagreeable matter outside the exam hall without disturbing inside the exam hall. Course teachers are asked to be present at the department during their Course Exam. Hall-in-Charge and Reserve Invigilators have to report of their presence 01 (one) hour before Mid exam starts. Total of 03 (three) full time faculty members will act as the hall-in-charge.	All Invigilators and Hall-in-Charge MRI SHR SHA	During Mid Exam Week	Closed
CEC15Dec 16A5 (Agenda-5)	CEC09 Jun 16A5	M: Double Examinees I: Students, who have double exam, will wait for their respective Invigilators to be guided towards the double exam hall room 714.	All Invigilators and Hall-in-Charge	During Mid Exam Week	Closed
CEC15Dec 16A6 (Agenda-6)	CEC09 Jun 16A6	M: Result Reports up to Mid Exam I: Result Reports up to Mid exam have to be submitted along with Attendance Report, Quiz # 1 and Quiz # 2 marks by 03 January 2017 (Tuesday) on or before 12 PM. Sample report is attached with these minutes.	All Course Teachers	03 Jan 2017 by 12 PM	Closed
CEC15Dec 16A7 (Agenda-7)	CEC09 Jun 16A7	M: Regular Class I: Regular class will resume from 01 January 2017 (Sunday).	All Course Teachers	01 Jan 2017	Closed
CEC15Dec 16A8 (Agenda-8)	N/A	M: Changes in Exam Rules and Regulations I: Recent changes in exam rules and regulations are enclosed with the minutes.	All Invigilators and Hall-in-charge	01 Jan 2017	Closed

Meeting Minutes in Detail

The Examination Committee meeting of CSE, UAP was held on Thursday, 15 December 2016 at 02:30 PM in the conference room (7th Floor), CSE, UAP. The meeting was chaired by Mr. Alope Kumar Saha, Associate Professor and Chair, CSE Exam Committee, UAP.

Member of the UAP CSE Exam Committee, Dr. Bilkis Jamal Ferdosi, Associate Professor, CSE, UAP; Dr. Md. Rashedul Islam, Associate Professor, CSE, UAP; Ms. Shaila Rahman, Assistant Professor, CSE, UAP; Ms. Shammi Akhtar, Assistant Professor, CSE, UAP; and Mr. Md. Firoz Mridha, Assistant Professor, CSE, UAP were present during the meeting. Member Secretary the UAP CSE Exam Committee, Molla Rashied Hussein, Assistant Professor, CSE, UAP was also present in the meeting.

The following agenda were present:

CEC15Dec16A1(Agenda-1):

The agenda was discussed and it was decided that, examination halls will be opened 15 (fifteen) minutes before Mid-Term examination starts. It will be closed 05 (five) minutes before Mid-Term examination starts. It will be re-opened 05 (five) minutes after Mid-Term examination starts.

CEC15Dec16A2(Agenda-2):

The agenda was discussed and it was decided that, no student can stand or roam around in front of examination halls during Mid-Term examination time.

CEC15Dec16A3(Agenda-3):

The agenda was discussed and it was decided that, no student can leave the examination hall before finishing 01 (one) hour Mid-Term examination.

CEC15Dec16A4(Agenda-4):

The agenda was discussed and it was decided that, Invigilators have to report of their presence 30 (thirty) minutes before Mid exam starts. Invigilators are asked to follow the strict time table as per duty roster. Invigilators are asked to resolve any disagreeable matter outside the exam hall without disturbing inside the exam hall.

Course teachers are asked to be present at the department during their Course Exam.

Hall-in-Charge and Reserve Invigilators have to report of their presence 01 (one) hour before Mid exam starts.

Total of 03 (three) full time faculty members (Dr. Md. Rashedul Islam, Ms. Shaila Rahman and Ms. Shammi Akhtar) will act as the hall-in-charge.

CEC15Dec16A5(Agenda-5):

The agenda was discussed and it was decided that, Students, who have double exam, will wait for their respective Invigilators to be guided towards the double exam hall room 714.

CEC15Dec16A6(Agenda-6):

The agenda was discussed and it was informed that, Result Reports up to Mid-Term examination have to be submitted along with Attendance Report, Quiz # 1 and Quiz # 2 marks by 03 January 2017 (Tuesday) on or before 12 PM. Sample report is attached with these minutes.

CEC15Dec16A7(Agenda-7):

The agenda was discussed and it was informed that, regular class will resume from 01 January 2017 (Sunday).

CEC15Dec16A8(Agenda-8):

The agenda was discussed it was informed that, recent changes in exam rules and regulations are enclosed with the minutes. Please see the attachment.

Since there was no other agenda to be discussed, the meeting was declared closed by the Chair of the CSE Exam Committee, thanking all for their active participation.

Mr. Alope Kumar Saha
Associate Professor and Chair, CSE Exam Committee, UAP
17 December 2016

Distribution:

All full-time faculty members, Department of CSE

Information:

Head, Department of CSE

Computer Science and Engineering Department
University of Asia Pacific

18 Jan, 2017

Minutes of the First Meeting on Self-Assessment (SA)

The first meeting on Self-Assessment was held on 18 January 2017 at the Seminar room, CSE, UAP.

The following faculty members of the department were present in the meeting:

Sl. no.	Name
1.	Mr. Alope Kumar Saha Associate Professor & Head
2.	Dr. Bilkis Jamal Ferdosi Associate Professor
3.	Dr. Md. Rashedul Islam Associate Professor and head, SA Committee, CSE, UAP
4.	Dr. Mohammad Shahriar Rahman Associate Professor
5.	Ms. Shaila Rahman Assistant Professor
6.	Ms. Shammi Akhtar Assistant Professor
7.	Md. Firoz Mridha Assistant Professor
8.	Dr. Shahera Hossain Assistant Professor
9.	Md. Akhtaruzzaman Adnan Assistant Professor
10.	A S Zaforullah Momtaz Assistant Professor
11.	Molla Rashied Hussein Assistant Professor
12.	Nadeem Ahmed Assistant Professor
13.	Mohammad Asiful Hossain Assistant Professor
14.	Dr. Nasima Begum Assistant Professor and member, SA Committee, CSE, UAP
15.	Rossi Kamal Senior Lecturer
16.	Jahir Ibna Rafiq Lecturer
17.	Abdul Kawsar Tushar

Sl. no.	Name
	Lecturer and member, SA Committee, CSE, UAP
18.	Ms. Anika Anwar Lecturer
19.	Risul Islam Lecturer
20.	Suman Bhadra Lecturer
21.	Hanif Bhuiyan Lecturer
22.	Md. Imran Bin Azad Lecturer
23.	Abdullah Al Omar Teaching Assistant

The meeting was informed that Self-Assessment Committee (SAC) of the department has attended 1 workshop and 2 meetings arranged by IQAC of UAP. The University workshop on the Overall guidelines of Self-Assessment journey as well as Self-Assessment report writing was held on December 2016. All the members of SA committees of all departments were present in those events. The title of this meeting was “Team Building Workshop by SA Committee, CSE, UAP”.

Dr. Mahbubul Haque, director of IQAC, UAP and associate professor of department of Business Administration was present as the Key Speaker in this workshop. The following points were made:

- The members of SA committee, CSE, UAP were introduced to all faculty members of the department.
- All faculty members were introduced to the idea of Self-Assessment and its importance.
- All faculty members were introduced to the idea of external peer review visit and associated importance. Specifically, all were requested to preserve all course-related materials for this purpose. Additionally, all were requested to cooperate with the SA team of CSE, UAP.
- A timeline for the year-long Self-Assessment process was presented, and overall picture was discussed.
- Self-Assessment procedure according to the SA guideline was explained to the faculty members. Additionally, Self-Assessment Report Writing was described in details. The emphasis was on the need to have Self-Assessment procedure ongoing.

APPENDIX K

CO vs. PO MAPPING

SI	Name of the Courses	Program Outcomes (PO)											
		1	2	3	4	5	6	7	8	9	10	11	12
1	Introduction to Computer Science & Programming Methodology [CSE 101]	√	√	√	√	√				√	√		√
2	English I: Written and Spoken English [HSS 101]									√		√	
3	Bangladesh Studies: Society and Culture [HSS 111 (A)]		√						√	√	√	√	
4	Bangladesh Studies: Bangladesh History [HSS 111 (B)]									√	√	√	
5	Physics [PHY 101]	√	√	√									√
6	Math I: Basic Calculus, Coordinate Geometry [MTH 101]	√	√	√									√
7	Structured Programming [CSE 103]	√	√	√	√	√						√	
8	Discrete Mathematics [CSE 105]	√	√	√	√						√		
9	Electrical & Electronic Engineering I [EEE 121]	√			√					√	√		
10	Math II: Linear Algebra [MTH 103]	√	√	√	√								
11	Chemistry [CHEM 111]												
12	Object Oriented Programming I: Java [CSE 203]	√	√	√	√	√							
13	Data Structures [CSE 205]	√	√	√	√	√				√	√		√
14	Math III: Multivariable Calculus [MTH 201]	√	√	√	√								
15	Electrical & Electronic Engineering II [EEE 221]	√	√		√								
16	Principles of Management [IMG 201]	√	√	√		√							
17	Math IV [MTH 203]	√	√	√	√								
18	Algorithm [CSE 207]	√	√	√	√	√							
19	Numerical Methods [CSE 209]	√	√	√	√	√							√

Self-Assessment Report
B.Sc. in Computer Science and Engineering

20	Assembly Language Programming [CSE 211]	√	√	√	√	√				√	√		
21	Digital Logic Design [CSE 231]	√	√	√	√	√							
22	Probability and Statistics [MTH 301]	√	√	√	√								
23	Electrical Drives and Instrumentation [ECE 301]	√	√	√									
24	Digital Electronics and Pulse Techniques [ECE 303]	√	√	√									
25	Database Systems [CSE 321]	√	√	√									
26	Computer Architecture I [CSE 331]	√	√	√		√	√	√			√		
27	Operating System [CSE 303]	√	√	√	√	√	√	√		√	√		
28	Information Systems [CSE 305]	√	√	√	√	√				√	√		
29	Data Communication [CSE 315]	√	√	√	√	√				√	√		
30	Microprocessors [CSE 333]	√	√	√	√	√				√	√		
31	Digital System Design [CSE 335]	√	√	√	√	√							
32	Software Engineering [CSE 401]	√	√	√	√	√	√	√	√	√	√		√
33	Compiler Design [CSE 403]	√	√	√	√	√				√	√		
34	Computer Network [CSE 421]	√	√	√	√	√				√	√		
35	Computer Graphics [CSE 431]	√	√	√	√	√				√	√		
36	Simulation and Modeling [CSE 405]	√	√		√	√				√	√		
37	Artificial Intelligence and Expert System [CSE 403]	√	√	√	√	√				√	√		√
38	VLSI Design [CSE 457]	√	√	√	√	√	√		√	√	√		
39	Computer Interfacing [CSE 415]	√	√	√	√	√	√	√	√	√	√		
40	Pattern Recognition [CSE 435]	√	√	√	√	√				√	√		√
41	Principles of Economics [ECN 201]				√			√				√	

APPENDIX L

RECENT PUBLICATIONS BY FACULTY MEMBERS

Aloke Kumar Saha

Associate Professor and Head

Publications:

1. Sabiha Hossain, Upama Kabir, Shaila Rahman and **Aloke Kumar Saha**, “JXTA & Web Services Using Secret Key Based Encryption” in International Journal of Computer and Information Technology (IJCIT) 2011.
2. S. Zaforullah Momtaz, Md. Fayyaz Khan, **Aloke Kumar Saha** and Kazi Shamsul Arefin, “A Practical Solution for Robotic Arm of the Towers of Hanoi Problem”, accepted in International Journal of Computer and Electrical Engineering (IJCEE), Manuscript code: JE446, August, 2011, Singapore.
3. S. Zaforullah Momtaz, Md. Fayyaz Khan, Muhammad Sajjad Hossain, **Aloke Kumar Saha** and Kazi Shamsul Arefin, “Design and Implementation of an Efficient Natural Algorithm to Solve Towers of Hanoi Puzzle having Multiple Towers & Disks” International Journal of Engineering and Technology (IJET) 2011, Manuscript code: JE331, August, 2011, Singapore.
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ISBN-13: 978-3-659-94849-7

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Shaila Rahman
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Shammi Akhtar

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Dr. Muhammad Firoz Mridha

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Dr. Shahera Hossain

Assistant professor

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Md. Akhtaruzzaman Adnan

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A S Zafourullah Momtaz

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Molla Rashied Hussein

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Sanjay Saha
Assistant professor

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Jahir Ibna Rafiq

Lecturer

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1. Jahir I Rafiq, A. Omar, A. Chakraborty, and A. Yusuf "Adaptive Secured Multicast Key Management with Re-Keying Process" 2016 IEEE Conference on Systems, Process and Control (ICSPC 2016).
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Abdul Kawsar Tushar

Lecturer

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1. **Abdul Kawsar Tushar**, Akm Ashiquzzaman, Afia Afrin, and Md. Rashedul Islam, "A Novel Transfer Learning Approach upon Hindi, Arabic, and Bangla Numerals using Convolutional Neural Networks", International Conference on Computational Vision and Bio Inspired Computing, LNCVB, Springer, India, 2017. (indexed in Scopus)
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Ms. Anika Anwar

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Hanif Bhuiyan

Lecturer

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Md. Imran Bin Azad

Lecturer

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Afia Afrin

Lecturer

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Abdullah Al Omar

Lecturer

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Akm Ashiquzzaman

Teaching Assistant

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