KUWAIT UNIVERSITY

College of Engineering & Petroleum

Office of Academic Assessment

Annual Report

2017-2018 Academic Year

June 2018

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Introduction

The Office of Academic Assessment (OAA) mission is to serve the academic programs, faculty, staff, and administration within the College of Engineering and Petroleum at Kuwait University. It is designed to foster continuous assessment for achieving academic excellence. The goals of the office are:

- To help coordinate program assessment processes
- To develop and implement regularly-scheduled and special-purpose student, alumni, and employer surveys
- To assist academic, administrative, and student-support units with data from assessments, and to develop or evaluate their own assessment processes
- To facilitate assessment training and awareness programs

Accordingly, the purpose of this report is to cover the activities of OAA in the academic year 2017/18. The main activities are summarized. Recommendations and plans for the next academic year are given.

Workshops Conducted by OAA

The office conducted five workshops and one Forum for the College of Engineering Faculty and TA members. Below is the list of these workshops and forums, and a summary including objectives, outlines, and evaluations are given in Appendix A.

A Workshop on Outcome Based Teaching and Assessment - Principles and Applications, was presented by: Prof. Andreas Christoforou and Dr. Souhaila Almutawa. Fifty-Six Faculty members attended the workshop, which was held on 28th & 29th November 2017.

Two workshops on Assessment of Student Outcomes Related to Professional Skills was presented by Dr. Muhammad Chaudhary. A total of Thirty-Seven Faculty and TA members attended the workshops, which was held on 6TH December 2017 & 25TH April 2018, respectively.

A Forum on Engineering Design & Labs – Teaching Methodology & Assessment was held on Saturday, February 10th, 2018, in Radisson Blu Hotel (Dasman 1). Twenty-Seven Faculty members attended the Forum.

A Workshop on Best Practices in Engineering Laboratories: Teaching and Assessment, was presented by: Prof. Ioannis Chatzis. Twenty-Three Faculty and TA members attended the workshop, which was held on 21st March 2018.

A Workshop on Best Practices in Engineering Design: Teaching and Assessment, was presented by: Prof. Ioannis Chatzis & Dr. Sa'ed Abed. Eighteen Faculty and TA members attended the workshop, which was held on 18th April 2018.

Online Course Assessment

The office has provided the course assessment form to the faculty through an online system. Faculty members could leave the system at any time before submitting the form without losing any of the data they entered; they also were able to view the previously submitted forms. After submitting the form, an instruction page appeared. It contains guidelines on how to prepare the course assessment file to be submitted to the departmental assessment coordinator. The assessments were conducted for the Fall, Spring and Summer semesters of 2016/17. A comprehensive report including all the details and the results has been prepared and issued. A summary is given in Appendix B.

Exit Survey

Students upon graduation are obliged to submit the exit survey form to complete the graduation requirements. The survey was filled online by students graduating at the end of the Fall, Spring and Summer semesters of the academic year 2016/17. A comprehensive report including all the details and the results has been prepared and issued. A summary is given in Appendix C.

Coordination of Departmental Assessment Activities

The director of OAA along with the Vice Dean for Academic Affairs organized a series of briefings for the faculty councils of all Departments regarding academic assessment. In these meetings the status of academic assessment in the respective departments was reviewed. The concerns and questions of the faculty members were addressed, and their feedback on the process was sought. A sample presentation is given in Appendix E.

The Course Assessment Response Statistics for the Fall Semester of the academic year 2017/18 are given below. They were prepared during February and April 2018. For the Fall Semester 2017/18, Tables 1a and 1b show the total number of faculty members who taught courses, the total courses taught, and the number of responses according to faculty and courses, for each department. Table 1a shows early response statistics that was undertaken in the month of February, while Table 1b shows the response statistics by April 2018. A total response of 108 was recorded out of 194 faculty members who were teaching courses during the semester (55.7% response rate). The responses covered 204 different courses. Our target response rate for all departments is 80%.

Table 1a: Course Assessment Response Statistics –Fall Semester 2017/18 (February 28, 2018)

DEPARTMENT	Total Faculty	Total Course Sections	Total Response (courses)	Unique Responder	% Response Courses	% Response Faculty
CHEMICAL	19	30	22	10	73.3	52.6
CIVIL	42	91	30	19	33.0	45.2
COMPUTER	32	59	34	25	57.6	78.1
ELECTRICAL	36	99	25	9	25.3	25.0
IMSE	14	30	25	12	83.3	85.7
MECHANICAL	36	67	27	14	40.3	38.9
PETROLEUM	15	31	7	3	22.6	20.0
TOTAL	194	407	170	92	41.8	47.4

Table 1b: Course Assessment Response Statistics –Fall Semester 2017/18 (April 16, 2018)

DEPARTMENT	Total Faculty	Total Course Sections	Total Response (courses)	Unique Responder	% Response Courses	% Response Faculty
CHEMICAL	19	30	25	12	83.3	63.2
CIVIL	42	91	34	22	37.4	52.4
COMPUTER	32	59	35	25	59.3	78.1
ELECTRICAL	36	99	35	14	35.4	38.9
IMSE	14	30	26	13	86.7	92.9
MECHANICAL	36	67	27	14	40.3	38.9
PETROLEUM	15	31	22	8	71.0	53.3
TOTAL	194	407	204	108	50.1	55.7

For the Spring Semester 2017/18, the process of submission is ongoing.

The OAA is also coordinating the following activities:

Program Assessment Plans Revision

Program assessment plans are being revised to reflect ABET Criterion 3 changes, from 11 to 7 Student Outcomes (SO). Implementation of the new SO will be the Fall Semester of 2018/19. A mapping between the revised (7) and current (11) SO with some thoughts and suggestions provided to all programs are presented below:

revised / current	1	2	3	4	5	6	7	Crit. 5 (b), (c)
a	✓							
b						✓		
c		✓						
d					✓			
e	✓							
f				✓				
g			✓					
h				✓				
i							✓	
j								✓
k								✓

Current version

a. an ability to apply knowledge of mathematics, science, and engineering
b. an ability to design and conduct experiments, as well as to analyze and interpret data
c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
d. an ability to function on multidisciplinary teams
e. an ability to identify, formulate, and solve engineering problems
f. an understanding of professional and ethical responsibility
g. an ability to communicate effectively
h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
i. a recognition of the need for, and an ability to engage in life-long learning
j. a knowledge of contemporary issues
k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Revised version

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Summary thoughts and suggestions:

Based on the discussion during the joint CAC and UPC meeting the mapping of the current to the revised version of the SO is given in the table above. Please observe the following:

- Except for revised SO (1) and (4), the rest are one-to-one mapping to the current version.
- SO (j) and (k) of the current version are now part of revised Criterion 5: Curriculum. If needed, some of the elements of these outcomes may be included in the revised version of the SO.

All program assessment plans, with a certain degree of diversity, consist of the following elements:

1. Relationship of SO to Program Educational Objectives (PEO): The relevant table can be revised immediately.
2. Curriculum (courses) contribution to student outcomes: The relevant table can also be revised immediately. It can serve as a starting point to revise the course outcomes and the contribution of the course to SO (if it was overdone).
3. Outcome indicators (performance criteria).
4. Course measurable outcomes (outcome attributes).
5. Implementation practices (strategy).
6. Assessment methods and tools.

Most of the elements of the assessment plans mentioned above can be revised relatively easy. A slight difficulty may arise from SO (1) and (4). As can be seen from the table, both are the result of merging two different current outcomes. Also, in the assessment process development for all 7 revised SO, we must pay close attention to the new language that is being used.

Initial groundwork can be done by the Assessment and UPC coordinators. Early in the Spring Semester of 2017/18 however, all faculty including the chairman, must be involved in the revision process. Either as TAGs or task groups. This will facilitate first-hand knowledge and ownership of the assessment process in the department.

Self-Study Report (SSR) Preparation

The OAA in cooperation with the VDAA is coordinating the preparation of the SSR of all programs for the ABET EAC accreditation visit which will take place in November of 2019. Below is the SSR preparation tracking sheet as of May 22,2018.

Action Items:	Due Date:	Comments:
1st Draft of Self-Study	15-Mar-18	Includes Background, PC, Criteria 1, 2, 3, 8, and partially Criteria 4, 5, 6, 7
2nd Draft of Self-Study	8-May-18	Complete to as maximum degree as possible
Review of Drafts	20-May-18	VDA, OAA review self-study drafts for content and structure
Final Draft of Self-Study	22-Nov-18	Complete report
Peer Review	6-Dec-18	UPC coordinators review self-study final draft of other programs
Mock Evaluation Visit	Dec 16-20, 2018	ABET Room and Laboratories are visited by 2 Evaluators, VDAA, OAA
		Return Draft of Self-Study from reviewer with feedback
Final Version of Self-Study	16-May-19	Soft Copy submitted to VDAA and OAA

	Received and Complete
	Received but not complete (in progress)
	Received (Needs Review by VDAA & OAA)
	Not Received

Department	UPC Coordinator	Self Study Part 1 (Criteria)								
		Background	C1 Students	C2 Objectives	C3 Outcomes	C4 Cont. Asses	C5 Curriculum	C6 Faculty	C7 Facilities	C8 Institutional Support
Chemical	Dr. Bader									
Civil	Prof. Kabir									
Computer	Prof. Anwar									
Electrical	Prof. Cherri									
Industrial	Dr. Jawad									
Mechanical	Prof. Ahmet									
Petroleum	Prof. Ioannis									

Department	UPC Coordinator	PC	Self Study Part 2 (Appendices)			
			A Course Syllabi	B CV	C Equipment	D Ins. Sum.
Chemical	Dr. Bader					
Civil	Prof. Kabir					
Computer	Prof. Anwar					
Electrical	Prof. Cherri					
Industrial	Dr. Jawad					
Mechanical	Prof. Ahmet					
Petroleum	Prof. Ioannis					

Assessment and Accredition SharePoint

The Assessment and Accreditation group was created on Office 365 by OAA to collect/share assessment and accreditation items/activities among the various departments of the College of Engineering and Petroleum.

There are common documents that are shared by all departmets in addition to department-specific document repository which contains the following folders.

- Course Assessment Files
- Sample Design Reports
- Student Transcripts
- Outcome Assessment Files
- Self Study Report
- Assessment Plan

Alumni Survey

The Alumni Survey was launched on December 18, 2016. It was closed at the end of Spring Semester 2017, with total alumni responders of 508. The report was finalized in October 2017. The results obtained from the Alumni Survey were circulated to the Dean, the Vice Dean for Academic Affairs, and all departments.

Employers Survey

Employers Survey was launched on October 2017. The input from companies and organizations that employ our graduates were collected and analyzed by the Office of Academic Assessment (OAA). In accordance with the plan of the OAA, an employer survey is conducted every four years.

The objectives of conducting the survey are to assess the quality of recent College of Engineering and Petroleum Graduates, to obtain feedback on the industry needs, to establish a continuous feedback channel between the College and the industry, and to determine the relevance and attainment of the programs' educational objectives.

The Employers Survey report was prepared and circulated to the Dean, the Vice Dean for Academic Affairs, and all departments in March 2018, and is given in Appendix D.

OAA Operation Plan (Fall 2015 – Spring 2020)

At the beginning of the 2015/16 academic year, the OAA operation plan for the following five academic years was formulated as shown in the following.

Academic Year 2015/16 - Fall 2015

- Prepare OAA annual report for 2014/15.
- Prepare 2014/15 student exit survey report.
- Prepare 2014/15 on-line course assessment report.
- Coordinate revision of program assessment plans.
- Coordinate assessment activities among engineering programs.
- Conduct Seminar visits to Departments.

- Conduct Faculty Workshops.
- Ensure that observations/concerns/deficiencies based on the final statement of ABET (Fall 2013 evaluation visit) have been addressed.
- Establish a timeline for activities leading to the next ABET visit.
- Administer end of Semester Student Exit Survey.

Academic Year 2015/16 - Spring 2016

- Coordinate revision of program assessment plans.
- Coordinate assessment activities among engineering programs.
- Conduct Seminar visits to Departments.
- Conduct Faculty Workshops.
- Revisit Assessment Toolbox.
- Establish College/Programs Industry Advisory Boards.
- Request placement data from ETAC.
- Administer end of Semester Student Exit Survey.

Academic Year 2016/17 - Fall 2016

- Prepare OAA annual report for 2015/16.
- Prepare 2015/16 student exit survey report.
- Prepare 2015/16 on-line course assessment report.
- Launch Alumni Survey.
- Analyze placement data obtained.
- Coordinate assessment activities among engineering programs.
- Formulate and propose corrective actions that are based on assessment results.
- Conduct Faculty Workshops.
- Administer end of Semester Student Exit Survey.

Academic Year 2016/17 - Spring 2017

- Prepare Alumni Survey Report.
- Organize an alumni gathering.
- Launch Employer Survey.
- Coordinate assessment activities among engineering programs.
- Conduct internal review.
- Formulate/Implement corrective actions if any.
- Conduct Faculty Workshops.
- Administer end of Semester Student Exit Survey.

Academic Year 2017/18 - Fall 2017

- Prepare OAA annual report for 2016/17
- Prepare 2016/17 student exit survey report.
- Prepare 2016/17 on-line course assessment report.
- Prepare Employer Survey Report.
- Organize an employer gathering.
- Coordinate assessment activities among engineering programs.
- Formulate and propose corrective actions that are based on assessment results.
- Conduct Faculty Workshops.
- Administer end of Semester Student Exit Survey.

Academic Year 2017/18 - Spring 2018

- Coordinate assessment activities among engineering programs.
- Launch Faculty Survey.
- Formulate/Implement corrective actions if any.
- Evaluation College/Programs Educational Objectives based on assessment data.
- Conduct Faculty Workshops.
- Administer end of Semester Student Exit Survey.

Academic Year 2018/19 - Fall 2018

- Prepare OAA annual report for 2017/18
- Prepare 2017/18 student exit survey report.
- Prepare 2017/18 on-line course assessment report.
- Coordinate assessment activities among engineering programs.
- Prepare Faculty survey report.
- Send request for evaluation to ABET.
- Request placement data from ETAC.
- Conduct internal review.
- Start preparing Self-Study reports.
- Administer end of Semester Student Exit Survey.

Academic Year 2018/19 - Spring 2019

- Coordinate assessment activities among engineering programs.
- Evaluation College Educational Objectives based on assessment data.
- Coordinate organizing student works and assessment evidences at the departments.
- Conduct internal review.
- Finalize Self-Study reports.
- Send Self-Study reports.
- Administer end of Semester Student Exit Survey.

Academic Year 2019/20 - Fall 2019

- Prepare OAA annual report for 2018/19
- Prepare 2018/19 student exit survey report.
- Prepare 2018/19 on-line course assessment report.
- Coordinate assessment activities among engineering programs.
- Prepare for ABET evaluation visit.
- Host ABET evaluation visit: Sunday – Tuesday (November 2019)
- Administer end of Semester Student Exit Survey.

Academic Year 2019/20 - Spring 2020

- Study ABET evaluation final statement.
- Respond to ABET observations/concerns/deficiencies.
- Coordinate assessment activities among engineering programs.
- Launch Alumni Survey.
- Launch Employer Survey.
- Administer end of Semester Student Exit Survey.

Evaluation of the OAA Operation Plan (Fall/Spring 2016 – 2017)

In the following the accomplishments and evaluation during this academic year of the OAA operation plan, which was presented in the previous section, are given:

Academic Year 2017/18 - Fall 2017

- Prepare OAA annual report for 2016/17
  - Sent on 7th June 2017
  - Report sent in Arabic on September 2017
- Prepare 2016/17 student exit survey report.
  - Prepared and sent on 5th December
- Prepare 2016/17 on-line course assessment report.
  - Prepared and sent on 10th December
- Alumni Survey Report
  - Sent the revised Alumni report on 9th November
- Prepare/Conduct Employer Survey and Report.
  - Forms are updated both in English and Arabic
  - Prepared the letter (English and Arabic) that will be sent to the employers
  - Prepared the preliminary list of the employers
  - Currently we are completing the list (names, company, position etc.)
  - One batch has been prepared and sent to Dr. Ali on 19th October and 2nd batch on 30th October 3rd batch sent on 27th December
  - Preparing to send to all the colleges in KU
- Organize an employer gathering (postponed)
- Coordinate assessment activities among engineering programs.
  - Prepared and sent the Course Assessment Response Statistics to all the departments on 4th October 2017
  - Requested departmental assessment reports of 2016/17, on 2nd October 2017, Received the reports from Computer, Civil, Electrical, Mechanical & IMSE Departments
  - Requested Computer assessment plan on 4th October 2017 & received it on 15th October
  - Departmental visits – Chemical on 12th November, Computer on 13th November, Civil on 14th November, Electrical on 15th November, Petroleum on 16th November, IMSE 22nd November
  - Mapping of student outcome sent to all the UPC & Assessment coordinators by email on 5th December 2017
- Formulate and propose corrective actions that are based on assessment results.
- Conduct Faculty Workshops.
  - A Workshop is planned for Faculty on November 7th and 8th 2017 postponed to April 10th & 11th.
  - A workshop for the Teaching Assistants was held on November 28th and 29th 2017, it covered the outcome-based teaching and assessment principles and applications, and was attended by 31 participants in 28th of Nov., and 25 participants in 29th of Nov.
  - Certificates are provided to participants, and workshop evaluation report was completed.
  - Workshop for Professional Skills was conducted on 6th December for all the faculty members and TA's. Workshop Evaluation report completed.
- Administer end of Semester Student Exit Survey.
- Working on the website to introduce Assessment Room, a virtual room where all the files related to assessment can be organized.

Academic Year 2017/18 - Spring 2018

- Coordinate assessment activities among engineering programs.
- Launch Faculty Survey.
- Prepare/Conduct Employer Survey and Report.
    - Prepared and sent to all the department on 3rd April 2018
- Formulate/Implement corrective actions if any.
- Evaluation College/Programs Educational Objectives based on assessment data.
- Conduct Faculty Workshops.
    - Forum held on Feb 10th, 2018 at Radisson Blu
    - Workshop on Engineering Labs best practices held on March 21st, 2018
    - Workshop on Engineering Designs coming up on April 18th, 2018
- Administer end of Semester Student Exit Survey.

Recommendations

- The online submission is still very low. Therefore, it is recommended that the VDAA and the Dean keep engaging the Chairmen of the Departments, and individual faculty members in our efforts to increase participation in the process.

- Except for three programs (IMSE, PE, ChE) the assessment plans have been revised to adopt the new 7 ABET Criterion 3 SO. It is recommended that the curriculum is taught and assessed accordingly beginning the Fall Semester of 2018/19. This way we may have some good assessment results to include in the SSR.

- The next ABET evaluation visit will take place in the Fall 2019/2020 academic year. All programs have begun writing their ABET SSR at the beginning of the Spring of 2017/18 academic year. Except for two programs (PE, ChE) the 2nd draft of SSR have been submitted. It is recommended that all programs work earnestly to finalize the drafts so we can conduct internal evaluations/corrections, and thus be ready to submit their self-study by April/May of 2019.

APPENDIX A:

Faculty Training Seminar & Workshop

Workshop on Outcome Based Teaching and Assessment - Principles and Applications

The workshop was held on two days 28th & 29th November 2017, (8:30 am till 1:30 pm). **Presented By:** Prof. Andreas Christoforou, and Dr. Souhaila Almutawa.

Objective:

To introduce assessment principles and their implementation at the course level.

Outline of the Workshop

Session 1 (8:30 – 10:00 am)

- Introduction to outcome based assessment
  - Accreditation/ Criteria
  - Emphasis on outcomes and continuous improvement
- Student outcomes
  - Definitions
  - Updated criteria and mapping
- Assessment
  - Paradigm shift
  - Basic principles

Coffee Break (10:00 – 10:15)

Session 2 (10:15 – 11:45)

- Levels of assessment
  - Development process
  - Assessment and continues improvement
- Introduction to course assessment
  - Developing course objectives and outcomes
  - The relationship between course contents and program objectives/outcomes
  - Understanding the nature of the course and Bloom's taxonomy levels
- Activity

Prayer Break (11:45 – 12:00)

Session 3 (12:00 – 1:30 pm)

- Course design based on Bloom's taxonomy
- Implementation of assessment
  - Identify resources
  - Practical issues
- Interpretation of assessment results
  - Use of grades for assessment

  - Use of assessment results for improvement
  - Feedback to students, faculty, administration
- Selection and effective use of assessment tools
  - Conventional tests, quizzes and HW
  - Assessing specific outcomes
  - Assessing group work
  - Use of assessment forms and rubrics
  - Effective grading practices
- Activity
- Course assessment
  - Instructor Course Evaluation Form (ICEF)
  - Assessment evidence
  - Interpretation of evidence
  - Feedback

Lunch: 1:30 pm

Workshop Evaluation Report

Workshop Title : Outcome Based Teaching and Assessment - Principles and Applications

Presented By: Prof. Andreas Christoforou and Dr. Souhaila Almutawa

Date and Time : 28th & 29th November 2017 , (8:30 am till 1:30 pm)

Place : Sabah Al-Salem VIP Hall, Khaldiya

Number of Attendees :56

Number of people who completed the Survey : 50

POINTS EVALUATED	Excellent	Good	Average	Fair	Poor	Average Score
Registration Procedure	29	9	7	5	0	4.2
Helpfulness and courtesy	35	15	0	0	0	4.7
Meeting room	25	18	5	1	0	4.4
Presentation skills	45	4	1	0	0	4.9
Knowledge of the subject	48	2	0	0	0	5.0
Presentation speed	32	17	1	0	0	4.6
Quality of visuals	29	14	4	1	0	4.5
Effectiveness of materials	22	20	6	2	0	4.2
Suitability of workshop duration to materials	14	28	6	1	0	4.1
Workshop in general	20	27	2	0	1	4.3

	Yes	No
Would you recommend this workshop to others?	46	1
Would you consider adopting some of the ideas presented in this workshop?	43	3
Would you be interested to attend another workshop related to teaching and learning?	42	4

Please list topics that you want to be covered in a future workshop

-Self survey designs

-Grading

-New Techniques in teaching

-Engineering ethics and how to incorporate it in courses

-Assessment tools

-Encourage student motivation

-Application of Assessment techniques

-Job role of a TA and an instructor

-Teaching skill improvement

-Lab workshop

- Design rubrics

- Report writing techniques

- How to use KPI in course evaluation and assessment

- Collaboration between Doctors, Professors and Engineering's/TA's

What was the most significant thing you learnt in the workshop?

-Outcome of objective

-How to prepare a course which satisfies outcomes and objectives

-Learning CIA model, Bloom's Taxonomy, Outcome verbs and TGI approach

-Practical Applications

-The process of course assessment and self-evaluation

-Student evaluation

-How to relate objectives and outcomes at the beginning of the course and the assessment at the end of the course.

Please provide any additional comments or suggestions you may have regarding the workshop

- More time for discussion

- Distributing the topics on different days

- Faculty members should attend along with the TA'S

- To be kept at the beginning of the semester so we all are free

- Keep updating.

- More details of doing portfolio

- More examples to be provided

- Lab technicians can be included

Please provide us with a testimony of your experience at this workshop

-Excellent and very informative workshop

-Refreshing & Good revision

-Both speakers were amazing and showed exceptional knowledge and experience in this area

Workshop on Assessment of Student Outcomes Related to Professional Skills

The workshop was held on 6th December 2017, (11:00 am - 2:00 pm) in Hall 119, Khaldiya. **Presented By:** Dr. Muhammad Chaudhary.

Objective:

Assessment of student outcomes related to professional skills – some reflections and suggestions.

Outline of the Workshop

Professional skills constitute an important outcome set in ABET Criterion 3 – Student Outcomes (a to k). More than 50% (6 out of 11) outcomes in the Criterion are related to the professional skills. This talk and discussion will attempt to reflect on explanation and assessment of the 6 student outcomes related to the professional skills (also called as 'soft' skills).

These outcomes are grouped into two sets of skills: (1) Process skills that include outcomes 'd' (teamwork), 'f' (ethics) and 'g' (communication) and (2) awareness skills which comprises of outcomes 'h' (impact of engineering on society), 'i' (life-long learning) and 'j' (contemporary issues). Teaching and assessing these 'soft' skills have been traditionally very 'hard' for engineering faculty. The focus of the talk will be on the following aspects:

1- Cognitive level required for the professional skills outcomes
2- Teaching methodologies
3- Performance indicators for these outcomes
4- Assessment tools for measuring student performance
5- Examples of required evidence

The curriculum of the Civil Engineering department was used as an example in this presentation.

Workshop Evaluation Report

Workshop Title : Assessment of Student Outcomes Related to Professional Skills
Presented By: Dr. Muhammad Chaudhary
Date and Time : 6TH December 2017 , (11:00 am - 2:00 pm)
Place : Hall 119, Khaldiya
Number of Attendees :25
Number of people who completed the Survey : 23

POINTS EVALUATED	Excellent	Good	Average	Fair	Poor	Average Score
Registration Procedure	21	1	1	0	0	4.8
Helpfulness and courtesy	16	5	2	0	0	4.6
Meeting room	16	6	0	1	0	4.6
Presentation skills	17	5	0	1	0	4.6
Knowledge of the subject	18	4	1	0	0	4.7
Presentation speed	9	8	4	1	0	4.1
Quality of visuals	8	11	2	1	1	4.0
Effectiveness of materials	8	10	2	1	1	4.0
Suitability of workshop duration to materials	9	12	0	0	2	4.1
Workshop in general	12	7	3	0	1	4.4

	Yes	No
Would you recommend this workshop to others?	15	2
Would you consider adopting some of the ideas presented in this workshop?	16	1
Would you be interested to attend another workshop related to teaching and learning?	16	1

Please list topics that you want to be covered in a future workshop

-Materials related to teaching skills
-Mapped to department's curriculum
-New teaching methodologies
-Teaching and measurement of skills
-Development of performance indicators (PI) for specific courses
-Design teaching
-Laboratory teaching

What was the most significant thing you learnt in the workshop?

-Mapping the outcomes and how to apply them
-Performance indicators
-Guidelines for assessment
-Assessment tools
-Soft skills assessment
-Applying cognitive levels to outcomes
-Teaching methods and assessment practices

Please provide any additional comments or suggestions you may have regarding the workshop

-Duration of the workshop needs to be more
-More members of the college need to hear the content of this workshop
-Code of ethics needs to be taught to the Engineering students by us
-More discussion with the audience
-Provide examples from different departments
-Should be more interactive

Please provide us with a testimony of your experience at this workshop

-Excellent coverage of topics
- Excellent presentation

Forum on Engineering Design & Labs – Teaching Methodology & Assessment

The Forum was held in Radisson Blu Hotel (Dasman 1), on Saturday, February 10th, 2018.

Objective:

Discussion, Concerns, and Suggestions on Design Courses, and Labs

Outline of the Forum

a. Welcoming comments by VDAA regarding the scope of the forum (10 min), 8:30-8:40 am
b. Presentation by OAA director regarding Design & Labs (10 min), 8:40-8:50 am
c. Presentation by departments on their Design teaching & assessment practices (70 min), 8:50-10:00 am
d. Discussion for best practices in Design (40 min), 10:00-10:40 am
e. Coffee Break (10 min), 10:40-10:50 am
f. Presentation by departments on their Lab teaching & assessment practices (70 min), 10:50 am-12:00 pm
g. Prayer Break (20 min), 12:00-12:20 pm
h. Discussion for best practices in Labs (40 min), 12:20-1:00 pm
i. Closing discussion and comments (30 min), 1:00-1:30 pm
j. Lunch, 1:30 pm

DESIGN Courses

1. Current practices in Design
   a. Are ABET requirements being addressed/met?
   b. Do the projects follow the design process with realistic constraints? Or are they purely analytical and research oriented?
   c. What are the roles of engineers/instructors? Is there consistency among different sections?
   d. Teaching methodology (Syllabus, lectures, covering relevant student outcomes?)
   e. Assessment (Grading, assessment tools, progress reports, final reports?)
   f. Are supporting evidences for assessment satisfactory (Project reports, assessment tools, portfolios)?
2. Develop best common practices in Design
   a. Identifying areas that need improvement
   b. Developing clear, improved and consistent guidelines to ensure implementation by all faculty who teach design
   c. Producing informative and effective assessment portfolios

LABS

3. Current practices in Labs
   a. Are ABET requirements being addressed/met?
   b. What are the roles of engineers/instructors? Is there consistency among different sections?
   c. Teaching methodology (Syllabus, lectures, number of experiments, covering relevant student outcomes?). Do students perform the experiments?
   d. How are the lab equipment? Are there safety issues in the labs? Are rules clear and visible?

e. Assessment (Grading, assessment tools, Lab reports?)
f. Are supporting evidences for assessment satisfactory (Lab reports, assessment tools, portfolios)?

4. Develop best common practices in Labs
   a. Identifying areas that need improvement (Equipment, Lab manuals, Lab reports, utilizing assessment tools)
   b. Developing clear, improved and consistent guidelines to ensure implementation by all faculty who teach labs
   c. Producing informative and effective assessment portfolios

Recommendations

- Dr. Tariq (CE) mentioned that due to logistic difficulties, they only use simulations for design projects. Several discussions were held on the 395 course duration, distribution of the course work and evaluation, and the possibility of introducing 2 semester sequence for design courses.
- Prof. Kabir (CE) shared his experience in teaching the subject where the students are asked to consider themselves as clients involved in initial budgeting, develop requirements, talk to architects and then consider aspects of structural, environmental and waste management etc.
- Dr. Waleed (CE) pointed out that the Capstone course is in contradiction to the requirements of the KFAS price requirements. He suggested the possibility of aligning the KFAS requirements to those of ABET.
- Prof. Ahmet Yigit (ME) pointed out some of the flaws in a design projects. Some design projects may look appealing from the outside but they are shallow in engineering fundamentals and principles. Faculty should give proper feedback to students when they submit draft reports, and encourage them to use acquired knowledge and skills.
- One of the concerns from the EE department was the level of commitment of faculty members to these courses. TA's are the ones who usually grade instead of the instructors.
- Prof. Chatzis (PE) emphasized the importance of having posters, which summarize the details of the projects. Also the importance of having dedicated faculty members in maintaining and mentoring other faculty members and students.
- Another concern from the PE department was that their projects were not design but research oriented, and that there is the need to educate the faculty members on real design projects.
- Dr. Anwar Al Yatama (CPE) suggested that it would be better to benchmark our processes with other similar universities.
- Dr. Ali (VDAA) mentioned one of the proposals after participating in the last ABET symposium was to have more ABET evaluators from our college. Another proposal is to send 5 faculty members to attend the yearly ABET conference/symposium.
- Prof. Andreas (OAA) concluded the discussion session by suggesting that 3 samples of final design reports will be requested from every department to make sure that they meet ABET requirements. In addition, he stressed the importance of usage of various assessments tools by each department, and that the quality of implementation and follow-up is essential.

Workshop on Best Practices in Engineering Laboratories: Best Practices

The workshop was held on March 21st, 2018, 2018, (8:30 am till 12:00 pm), in Sabah Al-Salem VIP Hall, Khaldiya. **Presented By:** Prof. Ioannis Chatzis.

Objective:

How to Improve the Laboratory Training of Students in Engineering Programs at Kuwait University''

Outline of the Workshop

8:30 – 10:15 am

- Introduction
- Talk about the criterion 7 in ABET accreditation
- Why do we have labs to conduct Experiments and ask students to write Lab Reports?

10:15 – 10:30 Coffee Break

10:30 am – 1:20 pm

- How do we provide this educational training to our Engineering Students professionally?
- How do we mentor them and evaluate their lab reports?

1:20 – 1:30 pm Certificates and workshop evaluation

Workshop Evaluation Report

Workshop Title : Engineering Laboratories – Best Practices in Teaching & Assessment

Presented By: Prof. Ioannis Chatzis

Date and Time : 21st March, 2018 , (8:30 am till 12:00 pm)

Place : Sabah Al-Salem VIP Hall, Khaldiya

Number of Attendees :23

Number of people who completed the Survey : 21

POINTS EVALUATED	Excellent	Good	Average	Fair	Poor	Average Score
Registration Procedure	17	4	0	0	0	4.8
Helpfulness and courtesy	13	6	2	0	0	4.5
Meeting room	10	8	1	0	2	4.1
Presentation skills	13	5	3	0	0	4.4
Knowledge of the subject	16	3	2	0	0	4.6
Presentation speed	11	7	1	1	1	4.2
Quality of visuals	6	10	4	0	1	3.9
Effectiveness of materials	5	13	1	2	0	4.0
Suitability of workshop duration to materials	5	12	3	0	1	3.9
Workshop in general	7	11	1	2	0	4.1

	Yes	No
Would you recommend this workshop to others?	18	3
Would you consider adopting some of the ideas presented in this workshop?	20	1
Would you be interested to attend another workshop related to teaching and learning?	21	-

Please list topics that you want to be covered in a future workshop

-Report writing in detail

-Grading rubrics

-Motivate teachers with updated and teaching techniques

-Education developments

-Incorporating technology on the classrooms & labs

- Collaboration between Course Instructor & TA to be effective

What was the most significant thing you learnt in the workshop?

-Grading policy & pre lab report

-Safety of labs

-Lab manuals

-Lab inspection

-Effectiveness of testing the students on the theory related to experiments prior the lab sessions

-Improving the communication skills in the lab and soft skills

-Importance of pre lab test

Please provide any additional comments or suggestions you may have regarding the workshop

-To involve male TA'S & Faculty Members

-Get students involved

-Activities and group works for brain storming

-More interactive sessions

-More examples to be provided

Please provide us with a testimony of your experience at this workshop

-Excellent and informative workshop

Workshop on Best Practises in Engineering Design: Teaching and Assessment

The workshop was held on 18th April, 2018, (8:30 am till 12:00 pm), in Sabah Al-Salem VIP Hall, Khaldiya. **Presented By:** Prof. Ioannis Chatzis & Dr. Sa'ed Abed.

Objective:

Best Practices in Design - Teaching and Assessment.

Outline of the Workshop

8:30 – 10:15 am

- Introduction
- ABET Criteria 3, 4 and 5

  - Are ABET requirements being addressed/met?
- How do you best teach Capstone Design? Pros and Cons
- Project Ideas: How to select? Analytical vs research oriented.
- Teaching Methodology: How do you train students in Design?

  - Roles of TA/Instructor

  - Teams

  - Syllabus, lectures, covering relevant student outcomes, presentations, meetings, report writing, …

10:15 – 10:30 Coffee Break

10:30 am – 12:00 pm

- Engineering Design Process

  - Realistic constraints: society, ethical, economic, environmental, …

  - Requirements, alternatives, technology used, standards, skills needed…

  - Decision and implementation, prototype

  - Testing

12:00 – 12: 20 pm Prayer Break

12:20 – 1:20 pm

- Assessment

  - Grading: assessment tools, progress reports, presentations, meetings, final reports, evaluation forms

  - Evidences: reports, presentations, design, prototype, portfolios

1:20 – 1:30 pm Certificates and workshop evaluation

Workshop Evaluation Report

Workshop Title : Engineering Design– Best Practices in Teaching & Assessment

Presented By: Prof. Ioannis Chatzis & Dr. Sa'ed Abed

Date and Time : 18th April, 2018 , (8:30 am till 12:00 pm)

Place : Sabah Al-Salem VIP Hall, Khaldiya

Number of Attendees :22

Number of people who completed the Survey : 18

POINTS EVALUATED	Excellent	Good	Average	Fair	Poor	Average Score
Registration Procedure	14	3	1	0	0	4.7
Helpfulness and courtesy	16	1	1	0	0	4.8
Meeting room	11	4	3	0	0	4.4
Presentation skills	13	8	0	0	0	4.6
Knowledge of the subject	15	2	1	0	0	4.7
Presentation speed	13	4	1	0	0	4.6
Quality of visuals	10	8	0	0	0	4.5
Effectiveness of materials	12	6	0	0	0	4.6
Suitability of workshop duration to materials	11	5	2	0	0	4.5
Workshop in general	12	5	1	0	0	4.6

	Yes	No
Would you recommend this workshop to others?	18	-
Would you consider adopting some of the ideas presented in this workshop?	18	-
Would you be interested to attend another workshop related to teaching and learning?	18	-

Please list topics that you want to be covered in a future workshop

-Report writing in detail

-New academic aspects in Engineering Education

-Time Management

-Teaching skills & practices

What was the most significant thing you learnt in the workshop?

-The idea of Design committee for the Capstone Design course.

-Choosing the best design for the students

-Capstone design details (process, grading, evaluation & follow up procedure)

-What capstone design is all about and the problems

-Design aspects in curriculum.

Please provide any additional comments or suggestions you may have regarding the workshop

-Standardize the teaching of design course and evaluation

Please provide us with a testimony of your experience at this workshop

-Very good experience

Workshop on Assessment of Student Outcomes Related to Professional Skills

The workshop was held on 25th April 2018, (11:00 am - 2:00 pm) in Hall 119, Khaldiya. **Presented By:** Dr. Muhammad Chaudhary & Dr. Mohammed Al-Yagout.

Objective:

Assessment of student outcomes related to professional skills – some reflections and suggestions.

Outline of the Workshop

Professional skills constitute an important outcome set in ABET Criterion 3 – Student Outcomes (a to k). More than 50% (6 out of 11) outcomes in the Criterion are related to the professional skills. This talk and discussion will attempt to reflect on explanation and assessment of the 6 student outcomes related to the professional skills (also called as 'soft' skills).

These outcomes are grouped into two sets of skills: (1) Process skills that include outcomes 'd' (teamwork), 'f' (ethics) and 'g' (communication) and (2) awareness skills which comprises of outcomes 'h' (impact of engineering on society), 'i' (life-long learning) and 'j' (contemporary issues). Teaching and assessing these 'soft' skills have been traditionally very 'hard' for engineering faculty. The focus of the talk will be on the following aspects:

6- Cognitive level required for the professional skills outcomes
7- Teaching methodologies
8- Performance indicators for these outcomes
9- Assessment tools for measuring student performance
10- Examples of required evidence

The curriculum of the Civil Engineering department was used as an example in this presentation.

Workshop Evaluation Report

Workshop Title : Assessment of Student Outcomes Related to Professional Skills
Presented By : Dr. Muhammad Chaudhary & Dr. Mohammed Al-Yagout
Date and Time : 25th April, 2018 , (11:00 am - 2:00 pm)
Place : Sabah Al-Salem VIP Hall, Khaldiya
Number of Attendees : 12
Number of people who completed the Survey : 12

POINTS EVALUATED	Excellent	Good	Average	Fair	Poor	Average Score
Registration Procedure	12	0	0	0	0	5
Helpfulness and courtesy	11	1	0	0	0	4.9
Meeting room	11	1	0	0	0	4.9
Presentation skills	11	1	0	0	0	4.9
Knowledge of the subject	12	0	0	0	0	5
Presentation speed	4	4	3	1	0	3.9
Quality of visuals	6	3	3	0	0	4.2
Effectiveness of materials	7	4	1	0	0	4.5
Suitability of workshop duration to materials	4	4	3	0	1	3.8
Workshop in general	6	6	0	0	0	4.5

	Yes	No
Would you recommend this workshop to others?	12	-
Would you consider adopting some of the ideas presented in this workshop?	12	-
Would you be interested to attend another workshop related to teaching and learning?	12	-

Please list topics that you want to be covered in a future workshop

-Report writing for Faculty members
-Teaching skills
-Rubrics

What was the most significant thing you learnt in the workshop?

-How students think about learning
-Importance of improving soft skills

-Guidelines for assessment
Fixed vs growing mindset

Please provide any additional comments or suggestions you may have regarding the workshop

-Duration of the workshop needs to be more
-Workshop for students
-Code of ethics needs to be taught to the Engineering students
-More discussion with the audience
-Should be more interactive

Please provide us with a testimony of your experience at this workshop

-Overall a good workshop

APPENDIX B
Online Course Assessment
For Academic year 2016-2017

November 2017

Introduction

This report presents the results of the online course assessment at the College of Engineering and Petroleum Instructor conducted during Fall, Spring, and Summer Semesters for the academic year 2016-2017. The online assessment form was developed, conducted, and analyzed by the Office of Academic Assessment (OAA).

Preparation and Implementation of the Process

The form was provided to the faculty through an online system. Faculty members were able to leave the system at any time before submitting the form without losing any of the data they entered. They were also able to view the previously submitted forms. After submitting the form, an instruction page appears. It contains guidelines on how to prepare a course assessment file to be submitted to the departmental assessment coordinator.

For the Fall Semester (Table 1), a total response of 231 was recorded from faculty members in the college (58.2% response rate). The responses covered 407 different courses (56.8 % response rate).

For the Spring Semester (Table 2), a total response of 160 was recorded from faculty members in the college (45.7% response rate). The responses covered 434 different courses (36.9 % response rate).

For the Summer Semester (Table 3), a total response of 44 was recorded from faculty members in the college (20% response rate). The responses covered 164 different courses (26.8 % response rate).

Results and Discussion

Tables 4, 6, and 8 show the average rating of student performances in all courses in the college during Fall, Spring and Summer Semesters respectively. These results are presented graphically in Figures 1, 3, and 5, respectively. Tables 5, 7, and 9 show the weighted average scores of student performance in individual departmental courses as well as core engineering courses during Fall, Spring and Summer Semesters, respectively. These results are presented graphically in Figures 2, 4, and 6, respectively.

The relevance ratings given for each course are used as weights. Since the response rate is somewhat low, and therefore, some courses are not represented in a balanced way, the results may not be valid for some programs. In the survey instrument, the first eleven outcomes are those corresponding to ABET Criterion 3 (a-k) outcomes, and the rest of the outcomes are program specific. Therefore, the analysis and departmental comparison have been performed on the first eleven outcomes. Results that are more detailed are presented in the departmental tables where both relevance ratings and student performance are given for all outcomes. The departments are encouraged to review the results and mapping tables carefully and to make necessary adjustments.

Table 1: Response statistics – Fall Semester

DEPARTMENT	Total Faculty	Total Course Sections	Total Response (courses)	Unique Responder	% Response Courses	% Response Faculty
CHEMICAL	19	51	31	13	60.8	68.4
CIVIL	42	91	40	22	44.0	52.4
COMPUTER	27	46	46	23	100.0	85.2
ELECTRICAL	32	85	33	13	38.8	40.6
IMSE	12	29	29	11	100.0	91.7
MECHANICAL	35	75	32	18	42.7	51.4
PETROLEUM	17	30	20	7	66.7	41.2
TOTAL	184	407	231	107	56.8	58.2

Table 2: Response statistics – Spring Semester

DEPARTMENT	Total Faculty	Total Course Sections	Total Response (courses)	Unique Responder	% Response Courses	% Response Faculty
CHEMICAL	19	49	15	7	30.6	36.8
CIVIL	40	100	26	17	26.0	42.5
COMPUTER	29	44	30	16	68.2	55.2
ELECTRICAL	34	96	27	11	28.1	32.4
IMSE	12	26	25	12	96.2	100.0
MECHANICAL	37	82	24	16	29.3	43.2
PETROLEUM	13	37	13	5	35.1	38.5
TOTAL	184	434	160	84	36.9	45.7

Table 3: Response statistics – Summer Semester

DEPARTMENT	Total Faculty	Total Course Sections	Total Response (courses)	Unique Responder	% Response Courses	% Response Faculty
CHEMICAL	16	17	8	5	47.1	31.3
CIVIL	36	36	6	6	16.7	16.7
COMPUTER	20	24	0	0	0.0	0.0
ELECTRICAL	33	33	11	3	33.3	9.1
IMSE	7	7	3	3	42.9	42.9
MECHANICAL	30	32	13	11	40.6	36.7
PETROLEUM	13	15	3	3	20.0	23.1
TOTAL	155	164	44	31	26.8	20.0

Table 4: Students performance – College (Fall 2016-2017)

O	Outcome	5	4	3	2	1	0	Average	Weighted Average
a	Apply mathematics, science, and engineering	32	84	63	19	0	35	3.7	**3.6**
		14%	36%	27%	8%	0%	15%	74%	**72%**
b	Design and conduct experiments and analyze and interpret data	12	30	20	5	4	162	3.6	**3.7**
		5%	13%	9%	2%	2%	70%	72%	**74%**
c	Design a system, a component or a process	21	42	54	11	0	105	3.6	**3.7**
		9%	18%	23%	5%	0%	45%	72%	**74%**
d	Function as an effective team member	25	41	23	4	4	136	3.8	**4**
		11%	18%	10%	2%	2%	58%	76%	**80%**
e	Identify, formulate, and solve engineering problems	26	62	49	16	1	79	3.6	**3.6**
		11%	27%	21%	7%	0%	34%	72%	**72%**
f	Understand professional & ethical responsibilities	4	37	38	5	0	149	3.5	**3.6**
		2%	16%	16%	2%	0%	64%	70%	**72%**
g	Communicate effectively	22	63	45	8	0	95	3.7	**3.8**
		9%	27%	19%	3%	0%	41%	74%	**76%**
h	Understand the impact of engineering solutions	9	43	51	6	0	124	3.5	**3.6**
		4%	18%	22%	3%	0%	53%	70%	**72%**
i	Recognize the need for life-long learning	16	32	26	7	1	151	3.7	**3.7**
		7%	14%	11%	3%	0%	65%	74%	**74%**
j	Know the contemporary issues	11	34	43	0	0	145	3.6	**3.7**
		5%	15%	18%	0%	0%	62%	72%	**74%**
k	Use the techniques, skills and modern engineering tools for engineering practice	26	66	54	9	1	77	3.7	**3.7**
		11%	28%	23%	4%	0%	33%	74%	**74%**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

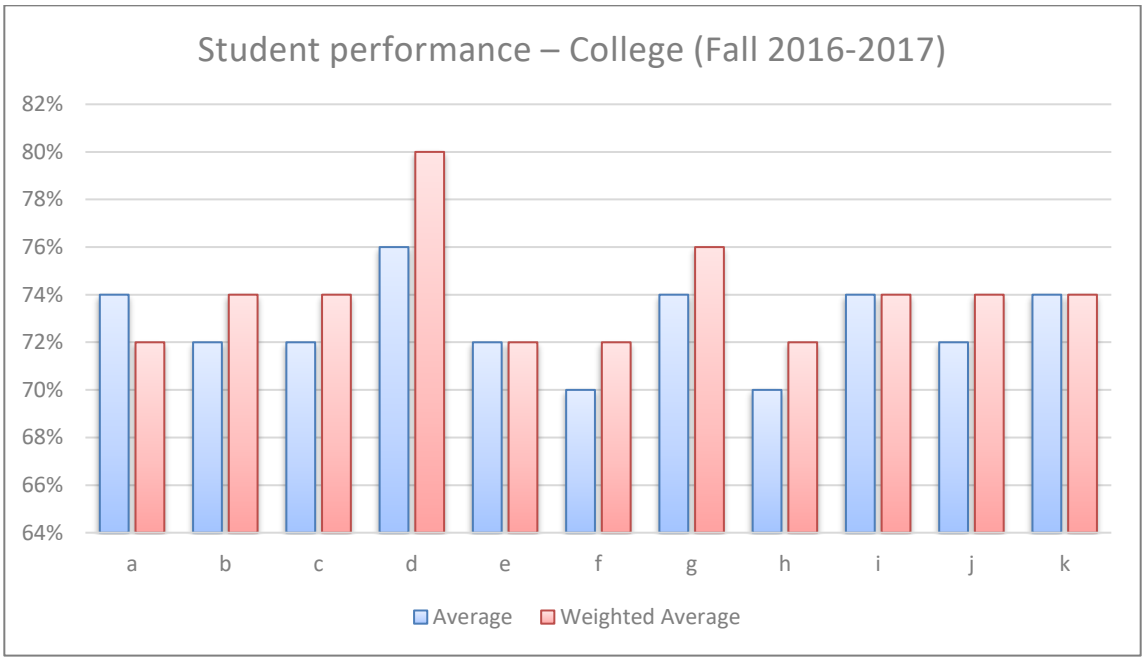

Figure 1: Student performance – College (Fall 2016-2017)

Table 5: Students performance (weighted averages) – comparison among programs (Fall 2016-2017)

O	Outcome	Chemical	Civil	Computer	Electrical	Ims	Mechanical	Petroleum	Core	Weighted Average
a	Apply mathematics, science, and engineering	74%	84 %	72%	68%	68 %	60%	68%	76 %	**72%**
b	Design and conduct experiments and analyze and interpret data	80%	74 %	60%	76%	76 %	64%	80%	80 %	**74%**
c	Design a system, a component or a process	80%	84 %	56%	64%	72 %	66%	90%	66 %	**74%**
d	Function as an effective team member	78%	84 %	92%	76%	76 %	80%	68%	0%	**80%**
e	Identify, formulate, and solve engineering problems	72%	84 %	66%	66%	78 %	60%	72%	70 %	**72%**
f	Understand professional & ethical responsibilities	68%	84 %	0%	80%	68 %	66%	70%	66 %	**72%**
g	Communicate effectively	76%	78 %	80%	74%	78 %	70%	80%	48 %	**76%**
h	Understand the impact of engineering solutions	72%	82 %	0%	70%	68 %	62%	76%	70 %	**72%**
i	Recognize the need for life-long learning	74%	88 %	0%	70%	70 %	56%	72%	70 %	**74%**
j	Know the contemporary issues	70%	80 %	90%	60%	70 %	68%	70%	74 %	**74%**
k	Use the techniques, skills and modern engineering tools for engineering practice	76%	84 %	66%	68%	76 %	66%	74%	76 %	**74%**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

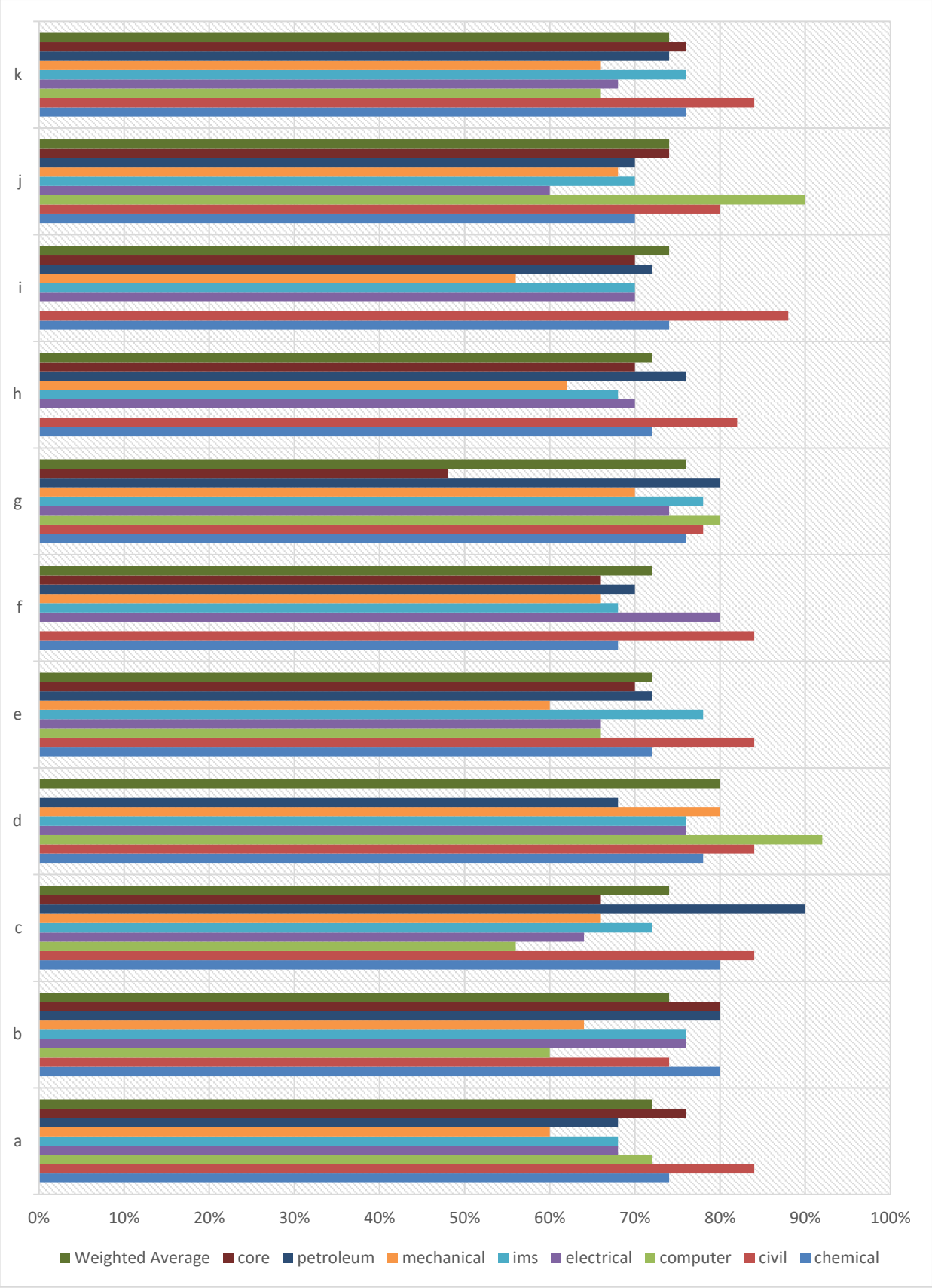

Figure 2: Students performance (weighted averages) – comparison among programs (Fall 2016-2017)

Table 6: Students performance – College (Spring 2016-2017)

O	Outcome	5	4	3	2	1	0	Average	Weighted Average
a	Apply mathematics, science, and engineering	22	54	44	14	1	25	3.6	**3.6**
		14%	34%	28%	9%	1%	16%	72%	**72%**
b	Design and conduct experiments and analyze and interpret data	12	14	19	5	1	109	3.6	**3.9**
		8%	9%	12%	3%	1%	68%	72%	**78%**
c	Design a system, a component or a process	16	28	28	9	0	79	3.6	**3.8**
		10%	18%	18%	6%	0%	49%	72%	**76%**
d	Function as an effective team member	16	30	19	3	1	91	3.8	**4**
		10%	19%	12%	2%	1%	57%	76%	**80%**
e	Identify, formulate, and solve engineering problems	20	40	34	8	1	57	3.7	**3.7**
		13%	25%	21%	5%	1%	36%	74%	**74%**
f	Understand professional & ethical responsibilities	3	27	31	4	0	95	3.4	**3.6**
		2%	17%	19%	3%	0%	59%	68%	**72%**
g	Communicate effectively	13	35	35	5	1	71	3.6	**3.8**
		8%	22%	22%	3%	1%	44%	72%	**76%**
h	Understand the impact of engineering solutions	11	29	33	5	0	82	3.6	**3.7**
		7%	18%	21%	3%	0%	51%	72%	**74%**
i	Recognize the need for life-long learning	10	24	25	2	2	97	3.6	**3.7**
		6%	15%	16%	1%	1%	61%	72%	**74%**
j	Know the contemporary issues	8	27	28	1	0	96	3.7	**3.7**
		5%	17%	18%	1%	0%	60%	74%	**74%**
k	Use the techniques, skills and modern engineering tools for engineering practice	16	38	47	4	3	52	3.6	**3.6**
		10%	24%	29%	3%	2%	33%	72%	**72%**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

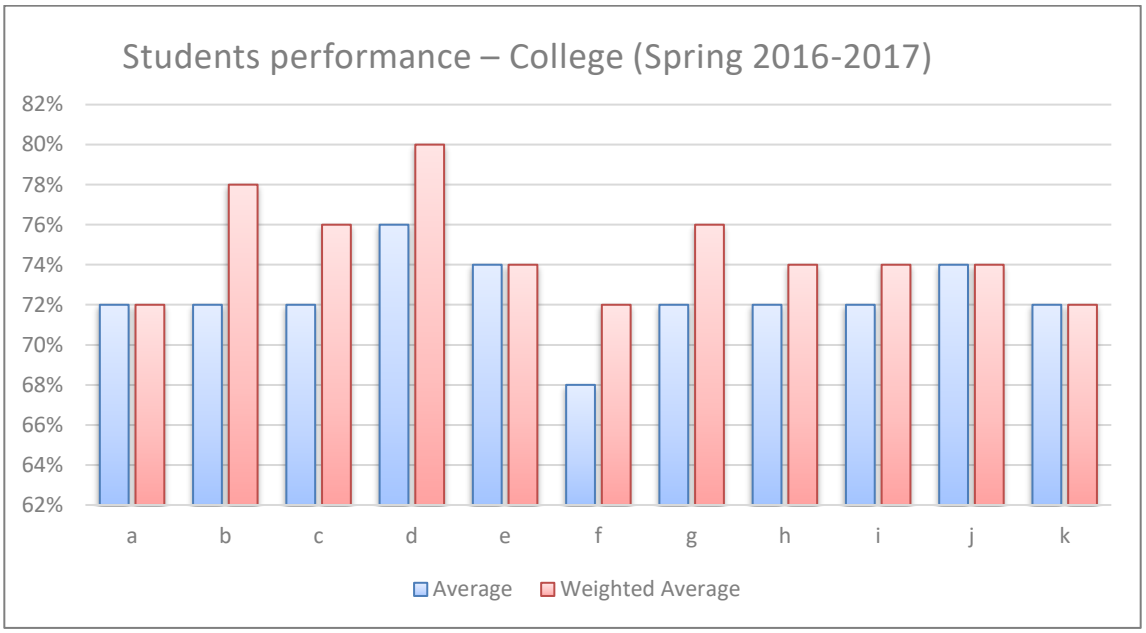

Figure 3: Student performance – College (Spring 2016-2017)

Table 7: Students performance (weighted averages) – comparison among programs (Spring 2016-2017)

O	Outcome	Chemical	Civil	Computer	Electrical	Ims	Mechanical	Petroleum	Core	Weighted Average
a	Apply mathematics, science, and engineering	84%	76%	74%	70%	82%	50%	72%	70%	**72%**
b	Design and conduct experiments and analyze and interpret data	90%	76%	0%	76%	74%	46%	90%	80%	**78%**
c	Design a system, a component or a process	86%	78%	0%	72%	82%	66%	100%	40%	**76%**
d	Function as an effective team member	78%	78%	84%	76%	78%	66%	100%	0%	**80%**
e	Identify, formulate, and solve engineering problems	80%	72%	0%	76%	84%	62%	82%	70%	**74%**
f	Understand professional & ethical responsibilities	74%	74%	80%	90%	70%	62%	70%	70%	**72%**
g	Communicate effectively	74%	72%	80%	72%	78%	66%	92%	54%	**76%**
h	Understand the impact of engineering solutions	72%	74%	0%	86%	76%	72%	74%	70%	**74%**
i	Recognize the need for life-long learning	80%	76%	0%	80%	72%	62%	72%	66%	**74%**
j	Know the contemporary issues	74%	78%	92%	80%	68%	60%	0%	74%	**74%**
k	Use the techniques, skills and modern engineering tools for engineering practice	76%	76%	0%	64%	76%	70%	70%	74%	**72%**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

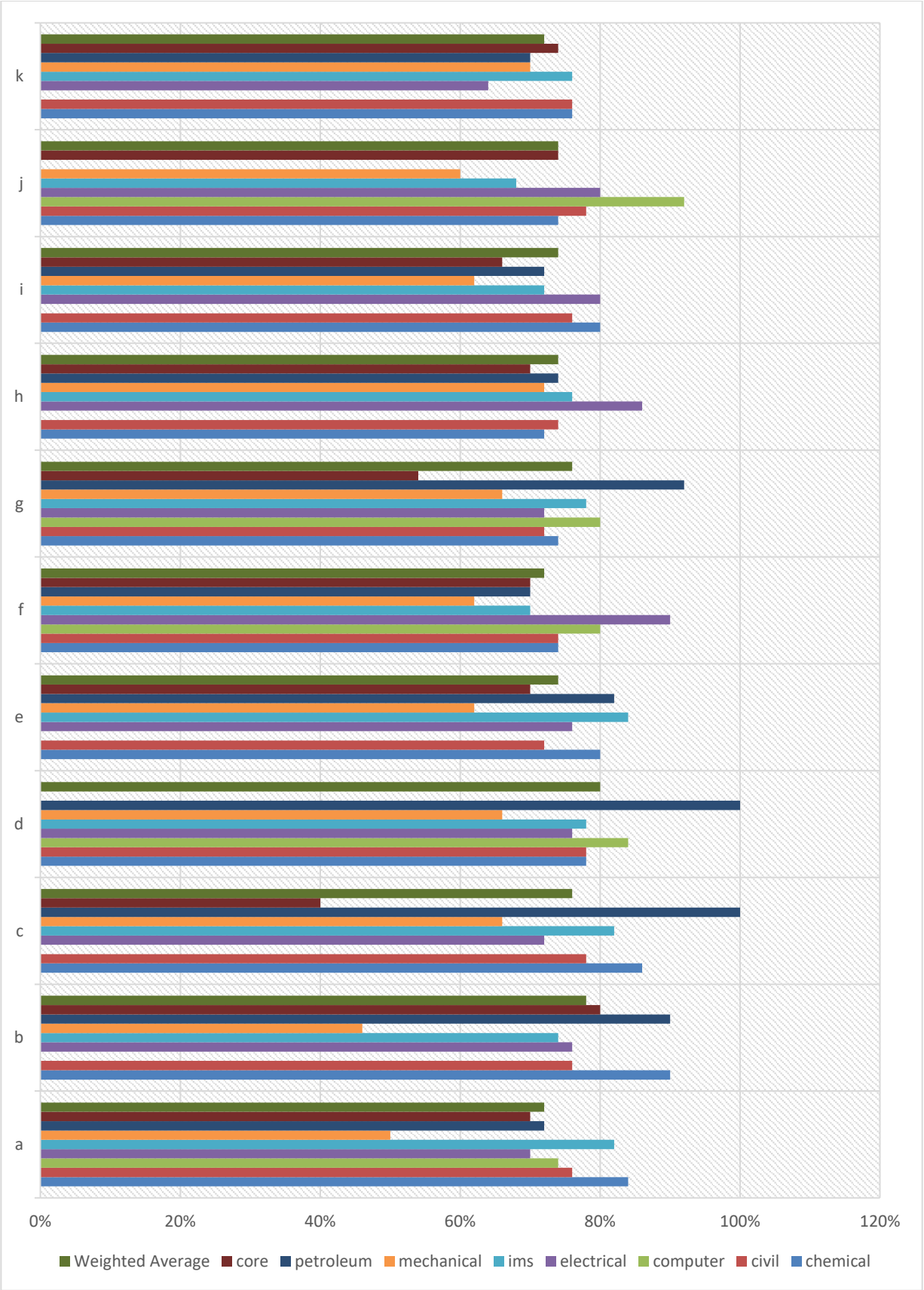

Figure 4: Students performance (weighted averages) – comparison among programs (Spring 2016-2017)

Table 8: Students performance – College (Summer 2016-2017)

O	Outcome	5	4	3	2	1	0	Average	Weighted Average
a	Apply mathematics, science, and engineering	5	14	13	5	0	7	3.5	**3.4**
		11%	32%	30%	11%	0%	16%	70%	**68%**
b	Design and conduct experiments and analyze and interpret data	3	5	8	1	0	27	3.6	**3.6**
		7%	11%	18%	2%	0%	61%	72%	**72%**
c	Design a system, a component or a process	3	11	14	2	0	14	3.5	**3.5**
		7%	25%	32%	5%	0%	32%	70%	**70%**
d	Function as an effective team member	1	11	14	0	1	17	3.4	**3.4**
		2%	25%	32%	0%	2%	39%	68%	**68%**
e	Identify, formulate, and solve engineering problems	5	12	9	3	0	15	3.7	**3.6**
		11%	27%	20%	7%	0%	34%	74%	**72%**
f	Understand professional & ethical responsibilities	0	6	12	0	0	26	3.3	**3.4**
		0%	14%	27%	0%	0%	59%	66%	**68%**
g	Communicate effectively	2	9	21	2	0	10	3.3	**3.3**
		5%	20%	48%	5%	0%	23%	66%	**66%**
h	Understand the impact of engineering solutions	3	7	15	1	0	18	3.5	**3.4**
		7%	16%	34%	2%	0%	41%	70%	**68%**
i	Recognize the need for life-long learning	1	7	14	1	0	21	3.3	**3.4**
		2%	16%	32%	2%	0%	48%	66%	**68%**
j	Know the contemporary issues	0	7	9	1	0	27	3.4	**3.3**
		0%	16%	20%	2%	0%	61%	68%	**66%**
k	Use the techniques, skills and modern engineering tools for engineering practice	5	16	17	2	0	4	3.6	**3.5**
		11%	36%	39%	5%	0%	9%	72%	**70%**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

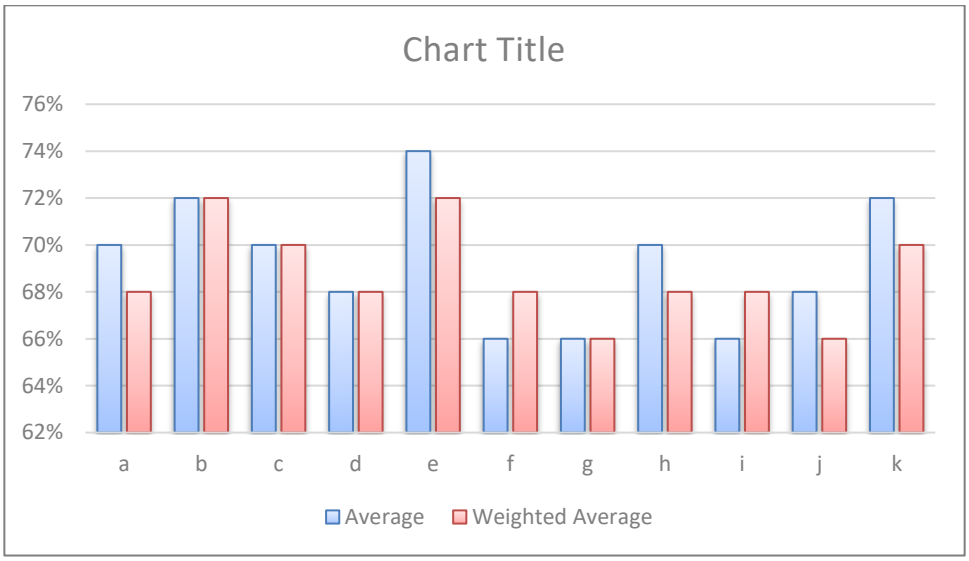

Figure 5: Student performance – College (Summer 2016-2017)

Table 9: Students performance (weighted averages) – comparison among programs (Summer 2016-2017)

O	Outcome	Chemical	Civil	Computer	Electrical	Ims	Mechanical	Petroleum	Core	Weighted Average
a	Apply mathematics, science, and engineering	72%	78%	0%	66%	0%	66%	66%	64%	**68%**
b	Design and conduct experiments and analyze and interpret data	100%	80%	0%	66%	60%	80%	80%	0%	**72%**
c	Design a system, a component or a process	78%	76%	0%	70%	0%	60%	0%	0%	**70%**
d	Function as an effective team member	60%	80%	0%	60%	80%	78%	0%	0%	**68%**
e	Identify, formulate, and solve engineering problems	76%	100 %	0%	80%	0%	66%	72%	66%	**72%**
f	Understand professional & ethical responsibilities	62%	0%	0%	0%	70%	64%	80%	0%	**68%**
g	Communicate effectively	64%	74%	0%	64%	60%	68%	60%	60%	**66%**
h	Understand the impact of engineering solutions	70%	92%	0%	0%	70%	62%	60%	58%	**68%**
i	Recognize the need for life-long learning	68%	60%	0%	0%	70%	66%	76%	60%	**68%**
j	Know the contemporary issues	60%	0%	0%	0%	70%	66%	0%	70%	**66%**
k	Use the techniques, skills and modern engineering tools for engineering practice	72%	84%	0%	66%	70%	66%	58%	100%	**70%**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

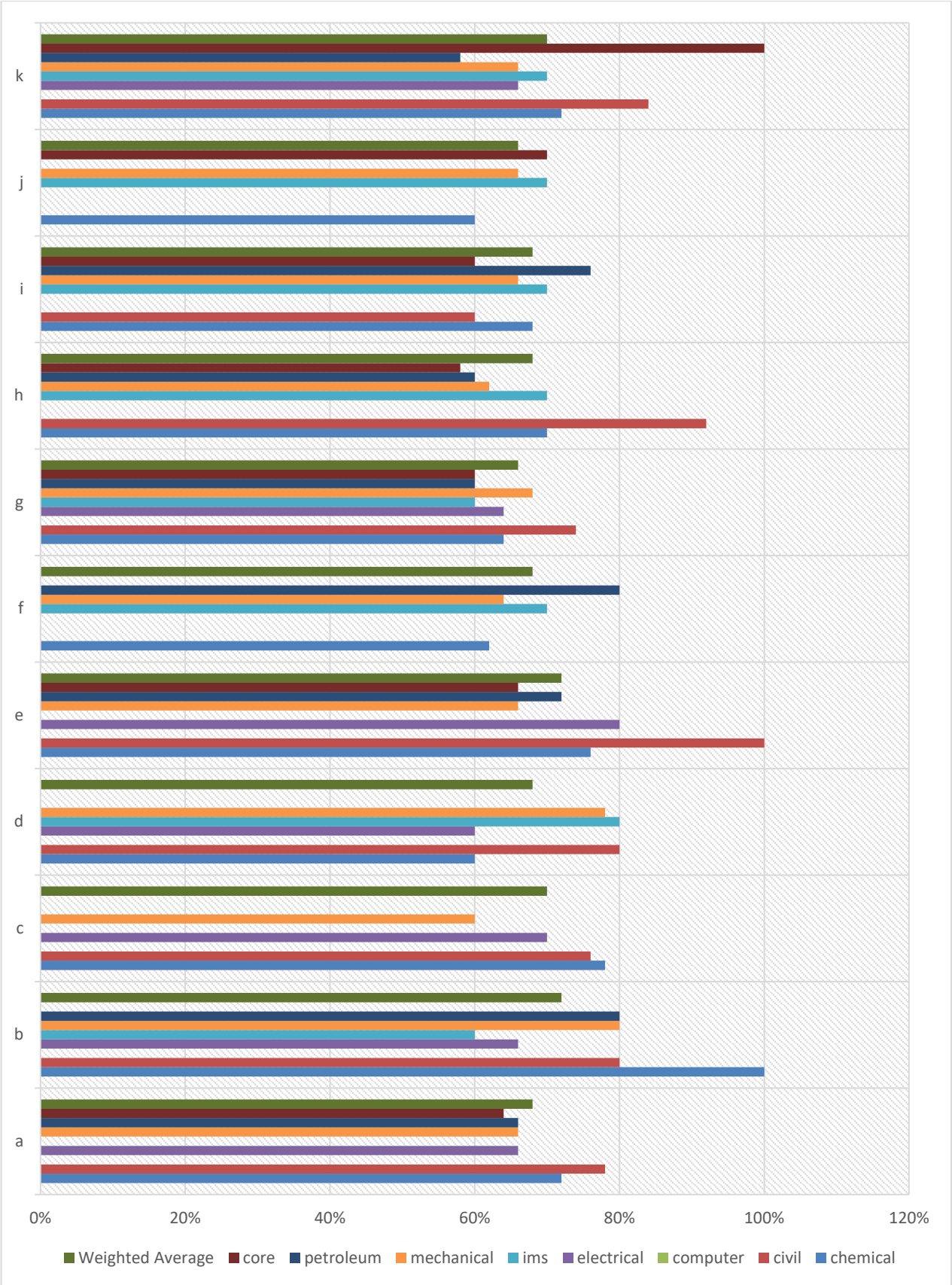

Figure 6: Students performance (weighted averages) Summer 2016-2017 – comparison among programs

Chemical Engineering Program

Fall semester

Instructors: **13**

Courses: **31**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0640-211	Chemical Engineering Principles I	H		L		H	L		M			L	M
0640-211	Chemical Engineering Principles I	H		L		H	L		M			L	M
0640-211	Chemical Engineering Principles I	H		L		H	L		M			L	M
0640-211	Chemical Engineering Principles I	H		L		H	L		M			L	M
0640-241	Fluid Mechanics	H		M	L	H	L	L	M	H		M	H
0640-241	Fluid Mechanics	H		M	L	H	L	L	M	H		M	H
0640-291	Fundamentals of Chemical Engineering Design			H	H	H	M	H	M	L	L	H	H
0640-291	Fundamentals of Chemical Engineering Design			H	H	H	M	H	M	L	L	H	H
0640-304	Introduction to Environmental Engineering												
0640-321	Chemical Engineering Thermodynamics	H		L	L	H	L	L	L	M		H	M
0640-321	Chemical Engineering Thermodynamics	H		L	L	H	L	L	L	M		H	M
0640-324	Kinetics and Reactor Design (A)	H		H	L	M	L	L	M	M	L	M	H
0640-343	Heat Transfer	H		M	L	H	L	L	M	H		M	H
0640-345	Mass Transfer	H		M	L	H	L	L	M	H		M	H
0640-351	Process Dynamics and Control	H		M	L	M	L	M	L	M	L	M	H
0640-352	Process Dynamics and Control Laboratory	M	H	L	H	M	L	H	M	M	L	M	H
0640-391	Chemical Process Synthesis	M		H	H	M	H	M	M	H		M	
0640-391	Chemical Process Synthesis			H	M		H	M	M	H	H	M	
0640-427	Kinetics and Reactor Design (B)	H		H	L	H	L	L	M	M		M	H
0640-440	Mass Transfer Operations	H		H	M	H	L	M	M	M	L	M	H
0640-440	Mass Transfer Operations	H		H	M	H	L	M	M	M	L	M	H

0640-461	Water Desalination	M		H	L	M	L	M	M	L	M	M	M
0640-475	Gas Sweetening												
0640-481	Operations Research												
0640-491	Plant Design	M		H	H	H	H	H	H	M	M	H	H
0640-491	Plant Design	M		H	H	H	H	H	H	M	M	H	H
0640-491	Plant Design	M		H	H	H	H	H	H	M	M	H	H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0640-211	Chemical Engineering Principles I	2				2							
0640-211	Chemical Engineering Principles I	2				2							
0640-211	Chemical Engineering Principles I	3		3		3	3		3			3	3
0640-211	Chemical Engineering Principles I	2		2		2	2		3			2	3
0640-241	Fluid Mechanics	5		4	3	5	3	3	3	5		4	5
0640-241	Fluid Mechanics	3		2		3	3	3	3	2		3	3
0640-291	Fundamentals of Chemical Engineering Design	5		5	3	5	4	4	5	4	3	4	5
0640-291	Fundamentals of Chemical Engineering Design			4	4	3	4	3	4	4	4	4	3
0640-304	Introduction to Environmental Engineering	4		3	3	4	4	3	4	4	3	4	3
0640-321	Chemical Engineering Thermodynamics	3	3	3	3	2	2	3	3	4	3	4	3
0640-321	Chemical Engineering Thermodynamics	3	3	3	3	3	2	3	3	4	3	4	3
0640-324	Kinetics and Reactor Design (A)	4		4	3	4	3	4	3	3	3	4	4
0640-343	Heat Transfer	4		4	4	4	3	3	3	3	3	4	4
0640-345	Mass Transfer	4		4	1	3	2	3	2	4		3	4
0640-351	Process Dynamics and Control	4		3	4	4	3	4	4	5	5	5	5
0640-352	Process Dynamics and Control Laboratory	4	4	3	5	4	3	4	5	3	4	4	3

0640-391	Chemical Process Synthesis	4		3	3	3	4	3	3	3		3	
0640-391	Chemical Process Synthesis			4	4		3	4	4	4	3	4	
0640-427	Kinetics and Reactor Design (B)	4		4	3	4	3	3	4	3		4	4
0640-440	Mass Transfer Operations	5		4		4	4	4	4	4	4	4	4
0640-440	Mass Transfer Operations	4		4	4	4	3	4	3	3	3	4	5
0640-461	Water Desalination	4		5	5	4	5	4	4	3	3	3	4
0640-475	Gas Sweetening	5	4	5	5	5	4	5	5	5	4	4	5
0640-481	Operations Research	5										5	
0640-491	Plant Design	5		5	4	5	4	5	4	4	3	4	5
0640-491	Plant Design	5		5	5	5	4	4	4	5	4	4	5
0640-491	Plant Design	5		5	5	5	4	4	4	5	4	4	5
	Weighted Average	**3.7**	**4**	**4**	**3.9**	**3.6**	**3.4**	**3.8**	**3.6**	**3.7**	**3.5**	**3.8**	**4.1**

The weighted average for an outcome is calculated by $\frac{\sum(performanœ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0640-211	Chemical Engineering Principles I	Review the outcome relevance
0640-211	Chemical Engineering Principles I	Review the outcome relevance
0640-241	Fluid Mechanics	The students in this class were mostly not motivated
0640-321	Chemical Engineering Thermodynamics	Only few students are reading the text book.
0640-321	Chemical Engineering Thermodynamics	Only few students are reading the text book.
0640-352	Process Dynamics and Control Laboratory	Very good performance indeed.
0640-391	Chemical Process Synthesis	Most of the students in this class were not highly motivated.
0640-391	Chemical Process Synthesis	Performance fluctuates during the term. Therefore, the students focus changed drastically especially near the term end. As a result, one or two topics were not totally grasped by some students. This problem might be solved through more proper advising to prevent students with low GPA from registering in more than 12 credits.

0640-427	Kinetics and Reactor Design (B)	Nonisothermal reactor design should be given in Reactor (A)
0640-440	Mass Transfer Operations	The performance of the students was good
0640-461	Water Desalination	Some of the HW assignment has an oral presentation Some of the projects done by students: 1. History of Antiscalent used in Kuwait Desalination Plants 2. Intake & Discharge in Kuwait Desalination Plants 3. Performance analysis of Doha West Plant 4. Environmental Impact of Desalination Plants 5. Water network in Kuwait 6. Safety in Kuwait Desalination Plants 7. Risk Management in Kuwait Desalination Plant

Spring Semester

Instructors: **7**

Courses: **15**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0640-321	Chemical Engineering Thermodynamics	H		L	L	H	L	L	L	M		H	M
0640-345	Mass Transfer	H		M	L	H	L	L	M	H		M	H
0640-351	Process Dynamics and Control	H		M	L	M	L	M	L	M	L	M	H
0640-352	Process Dynamics and Control Laboratory	M	H	L	H	M	L	H	M	M	L	M	H
0640-391	Chemical Process Synthesis	M	L	H	H	M	H	M	M	H	L	M	M
0640-440	Mass Transfer Operations	H		H	M	H	L	M	M	M	L	M	H
0640-463	Wastewater Treatment												
0640-472	Petroleum Refining Engineering	M		H	M	M	L	M	M	L	M	H	H
0640-491	Plant Design	M		H	H	H	H	H	H	M	M	H	H
0640-491	Plant Design	M		H	H	H	H	H	H	M	M	H	H
0640-491	Plant Design	M		H	H	H	H	H	H	M	M	H	H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0640-321	Chemical Engineering Thermodynamics	4		4	3	4	3	3	3	3		3	4
0640-345	Mass Transfer	4		4	1	3	2	3	2	4		3	4
0640-351	Process Dynamics and Control	3		4	3	3	4	3	3	5	3	5	4
0640-352	Process Dynamics and Control Laboratory	4	5	3	3	4	3	3	5	3	4	4	3
0640-391	Chemical Process Synthesis	4	3	4	4	4	4	4	3	4	4	4	4
0640-440	Mass Transfer Operations	5		4		3	4	4	4	3	3	3	4
0640-463	Wastewater Treatment	4		3	3	4	4	3	4	4	3	4	3
0640-472	Petroleum Refining Engineering	4		4	4	4	3	3	3	3	3	4	4
0640-491	Plant Design	5		5	5	5	4	4	4	5	4	4	5
0640-491	Plant Design	5		5	5	5	4	4	4	5	4	4	5
0640-491	Plant Design	4		5	4	5	4	5	4	4	4	4	4
	Weighted Average	**4.2**	**4.5**	**4.3**	**3.9**	**4**	**3.7**	**3.7**	**3.6**	**4**	**3.7**	**3.8**	**4.1**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0640-351	Process Dynamics and Control	Due to my obligations at the office of evaluation and measurement, I couldn't cover Beta-Gamma controllers. I recommend that process dynamics and control to be taught 3 times a week instead of twice a week.
0640-352	Process Dynamics and Control Laboratory	Some students couldn't relate the course material learned to the experimental results and outcomes.
0640-391	Chemical Process Synthesis	Most of the students in this class were good and hard working.
0640-440	Mass Transfer Operations	The performance of the students overall was good however some students were relatively weak due to lack of motivation.

Summer Semester

Instructors: **5**

Courses: **8**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0640-321	Chemical Engineering Thermodynamics	H		L	L	H	L	L	L	M		H	M
0640-321	Chemical Engineering Thermodynamics	H		L	L	H	L	L	L	M		H	M
0640-351	Process Dynamics and Control	H		M	L	M	L	M	L	M	L	M	H
0640-352	Process Dynamics and Control Laboratory	M	H	L	H	M	L	H	M	M	L	M	H
0640-391	Chemical Process Synthesis			H	M		H	M	M	H	H	M	
0640-440	Mass Transfer Operations	H		H	M	H	L	M	M	M	L	M	H
0640-472	Petroleum Refining Engineering	M		H	M	M	L	M	M	L	M	H	H
0640-475	Gas Sweetening												

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0640-321	Chemical Engineering Thermodynamics	4		4	3	4	3	3	3	3		3	4
0640-321	Chemical Engineering Thermodynamics	4		4	3	4	3	3	3	3		3	4
0640-351	Process Dynamics and Control	3		5	3	4	4	3	3	5	3	5	4
0640-352	Process Dynamics and Control Laboratory	4	5	3	3	4	3	3	5	3	4	4	3
0640-391	Chemical Process Synthesis			4	4		3	4	4	4	3	4	
0640-440	Mass Transfer Operations	3		3	1	3	3	3	3	2	2	3	3
0640-472	Petroleum Refining Engineering	4		4	4	4	3	3	3	3	3	4	4
0640-475	Gas Sweetening	5		5	4	5	4	5	5	4		4	5
	Weighted Average	**3.6**	**5**	**3.9**	**3**	**3.8**	**3.1**	**3.2**	**3.5**	**3.4**	**3**	**3.6**	**3.6**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0640-351	Process Dynamics and Control	Although I've had almost 10 non-enrolled students, who happen to show poor performance compared to KU students. This time, I've had very motivated ones who managed to score high in this challenging course, despite the fact that they only need C to transfer the course. Some KU students were phenomenal and have shown outstanding performance.
0640-352	Process Dynamics and Control Laboratory	Some students couldn't relate the course material learned to the experimental results and outcomes. This is the first time I tried to cancel the oral exam. Grades have improved
0640-391	Chemical Process Synthesis	Performance fluctuates during the term. Therefore, the students focus changed drastically especially near the term end. As a result, one or two topics were not totally grasped by some students. This problem might be solved through more proper advising to prevent students with low GPA from registering in more than 12 credits.

Civil Engineering Program

Fall semester

Instructors: **22**

Courses: **40**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0620-252	Engineering Materials	M	H	M				M	L		L		
0620-252	Engineering Materials	M	H	M				M	L		L		
0620-271	Structural Analysis I	H		M		H		L	M	L		M	L
0620-310	Fluid Mechanics	H		L		H							
0620-311	Water Resources	M	H	M	M	H		M	L			M	
0620-311	Water Resources	M	H	M	M	H		M	L			M	
0620-312	Environmental Engineering	H	H	H	H	H	L	H	L		M	M	M
0620-350	Soil Mechanics	H	H	L	M	H		L				L	
0620-371	Structural Analysis II	H		M		H		H	M	M		H	
0620-371	Structural Analysis II	H		M		H		H	M	M		H	
0620-373	Reinforced Concrete I	M		H	L	M	L	L	L	L			M
0620-373	Reinforced Concrete I	M		H	L	M	L	L	L	L			M
0620-401	Coastal Engineering Fundamentals	H	M	L		H		M	L			M	
0620-412	Open Channel Hydraulics	H	M	M				M				L	
0620-414	Hydraulic Engineering	M		H	L	M		M				M	
0620-430	Legal, Professional, and Social Aspects of Engineering				M	M	H	H	M	H	M	M	L
0620-434	Construction Estimation and Cost Control	M	M	M	M	M	M	M	M	M	M	H	H
0620-435	Construction Engineering and Management	M		M	M			M				M	M
0620-435	Construction Engineering and Management	M		M	M			M				M	M
0620-436	Construction Work Improvement	L			H	M		H	H			H	M
0620-451	Foundation Engineering	H	L	H	L	H	L	L				M	

0620-451	Foundation Engineering	H	L	H	L	H	L	L				M	
0620-452	Earth and Earth Retaining Structures	L	L	H	H	H		H				M	
0620-471	Steel Design I	H	M	H		H	M	H	M	H	H	H	M
0620-473	Reinforced Concrete II	H		H		H	H	M	M	H		M	H
0620-475	Prestressed Concrete	M		H		H		L	L	L	L		
0620-476	Computer Applications in Structural Engineering	M		H	H	H	L	H	L	H	L	H	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0620-252	Engineering Materials	4	4	3				3	3		3		
0620-252	Engineering Materials	4	5	3				3	5		5		
0620-271	Structural Analysis I	4		3		4		3	4	2			
0620-310	Fluid Mechanics	4		3		4							
0620-311	Water Resources	4	5	4	5	4		5	4			4	
0620-311	Water Resources	4	4	4	4	4		4	4			4	
0620-312	Environmental Engineering	4	3	4	4	4	3	3	4		3	3	4
0620-350	Soil Mechanics	2	3	3	2	2		2				3	
0620-371	Structural Analysis II	4		4		5		4	3	4		5	
0620-371	Structural Analysis II	5		4		4		4	4	4		5	
0620-373	Reinforced Concrete I	4		5		4							5
0620-373	Reinforced Concrete I	3		3		3	3	3	3	3			3
0620-401	Coastal Engineering Fundamentals	5	2	4		5		5	4			5	
0620-412	Open Channel Hydraulics	4	4	4				3				4	
0620-414	Hydraulic Engineering	4		5	4	5		3				5	

0620-430	Legal, Professional, and Social Aspects of Engineering				4	4	4	4	4	4	4	4	3
0620-434	Construction Estimation and Cost Control	5	1	5	3	5	4	4	4	5	4	5	4
0620-435	Construction Engineering and Management	4		5	4			3				5	4
0620-435	Construction Engineering and Management	4		3	3			3				4	3
0620-436	Construction Work Improvement	5			5	4		4	5			3	4
0620-451	Foundation Engineering	5	5	5	5	5		4				5	
0620-451	Foundation Engineering	3	3	4	3	4		3				3	
0620-452	Earth and Earth Retaining Structures	3	3	3	4	3		2				3	
0620-471	Steel Design I	5	4	4		4	4	4	4	4	4	4	
0620-473	Reinforced Concrete II	5		5		5	4	4	4	5		3	5
0620-475	Prestressed Concrete	4		4		4		4	4	4	4		
0620-476	Computer Applications in Structural Engineering	4		5	5	5	3	5	4	5	5	5	
0620-490	Capstone Design Course	4	3	4	5	4	5	4	4	5	4	4	4
0620-490	Capstone Design Course	4	3	4	5	4	4	5	4	4	4	4	
0620-490	Capstone Design Course	4		5		4	4	5					
0620-490	Capstone Design Course	5	5	5	5	5	5	5	5	5	5	5	
0620-490	Capstone Design Course	5	5	5	4	5	5	4	4	5	4	4	
	Weighted Average	**4.2**	**3.7**	**4.2**	**4.2**	**4.2**	**4.2**	**3.9**	**4.1**	**4.4**	**4**	**4.2**	**4**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0620-252	Engineering Materials	Outcome h can be upgraded to M and teachers encouraged to implement this target.
0620-311	Water Resources	This is a group of 31 Female students one student dropped the course . The students have a mixed academic standing ranging from Excellent to poor. Relatively, compared to previous classes, the small number of students made it easy to teach the course and give attention to individual student.
0620-350	Soil Mechanics	1. Students have deficiencies in English language understanding, reading, speaking, and writing. This is reflected on level of understanding of course materials. 2. Course materials are very extensive and long. Suggestions: It should be split into two 3. Wide spread of homework copying which is reflected on the students understanding 4. In general, students do not have good basic engineering understanding of units and measurements as this is a fundamental issue.
0620-373	Reinforced Concrete I	This is the first course in reinforced concrete design. The course follows the ACI design code and it paves the way for the second course.
0620-373	Reinforced Concrete I	Overall the class is satisfactory
0620-412	Open Channel Hydraulics	This is a group of 38 Students; 8 males and 30 Females. 2 females dropped the course. The group ranges from very good to above average academic standing. The large number of student population in small size lecture room makes the learning process very difficult. Tests and Exams are difficult to conduct and several Versions are used to prevent cheating. Frankly, I feel like high school teacher not university engineering professor.
0620-430	Legal, Professional, and Social Aspects of Engineering	Actual case studies in legal and ethical issues support students understanding and appreciation of course importance
0620-436	Construction Work Improvement	- Although the six term project groups used spreadsheets to generate random points in time to record productivity data, some of the groups did not report this on their final report. This is the reason why outcome #k is evaluated at "satisfactory" rather than excellent. The Students should be reminded to demonstrate this ability to utilize software tools on their final report.
0620-451	Foundation Engineering	Students had to undertake a design project as part of the course. They faced difficulty in reading the building plans and drawing. I think students who should know this and this should be taught in concrete course
0620-451	Foundation Engineering	Students do not have sufficient ability to answer in writing in detail the reply to comprehensive questions. Students need several mini design projects but the contents of the course do not allow it.

0620-452	Earth and Earth Retaining Structures	1. Students enrolled in this course need to have taken foundation course CE 451. 2. There is a lack of capability by the students for oral presentation and report writing. 3. There is a lack in general among students in reference to understanding units of measurements
0620-471	Steel Design I	This is an above average batch of students
0620-473	Reinforced Concrete II	Students were interested in the design aspects and worked very well during the course. However, they depend on the open book and notes during the exams and that make them lazy to study harder.
0620-475	Prestressed Concrete	This was a 'good' class. Students tried their best, but some were not upto the challenge of this advanced class.
0620-490	Capstone Design Course	Combine different skills to generate a capstone design project and most students participate in the graduation exihibition of all graduation projects from the College of Engineering.
0620-490	Capstone Design Course	This course is the main capstone course which usually covers three different disciplines. To assure quality, it is recommended to work in the project for two consecutive semesters.

Spring semester

Instructors: **17**

Courses: **26**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0620-201	Introduction to Design	M		M	H	H	M	H	L	L	M	L	
0620-252	Engineering Materials	M	H	M				M	L		L		
0620-271	Structural Analysis I	H		M		H		L	M	L		M	L
0620-310	Fluid Mechanics	H		L		H							
0620-311	Water Resources	M	H	M	M	H		M	L			M	
0620-312	Environmental Engineering	H	H	H	H	H	L	H	L		M	M	M
0620-350	Soil Mechanics	H	H	L	M	H		L				L	
0620-373	Reinforced Concrete I	M		H	L	M	L	L	L	L			M
0620-373	Reinforced Concrete I	M		H	L	M	L	L	L	L			M
0620-412	Open Channel Hydraulics	H	M	M				M				L	

0620-414	Hydraulic Engineering	M		H	L	M		M				M	
0620-435	Construction Engineering and Management	M		M	M			M				M	M
0620-436	Construction Work Improvement	L			H	M		H	H			H	M
0620-449	Civil Engineering Systems	H	L		M	H	L	M	H	L	M	H	H
0620-471	Steel Design I	H	M	H		H	M	H	M	H	H	H	M
0620-473	Reinforced Concrete II	H		H		H	H	M	M	H		M	H
0620-473	Reinforced Concrete II	H		H		H	H	M	M	H		M	H
0620-476	Computer Applications in Structural Engineering	M		H	H	H	L	H	L	H	L	H	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	
0620-490	Capstone Design Course	H	M	H	M	H	H	H	M	M	M	M	

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0620-201	Introduction to Design	3		3	3	3	3	2	3	3	3	2	
0620-252	Engineering Materials	4	5	4				3	5		5		
0620-271	Structural Analysis I	3				2		3	3	3		1	
0620-310	Fluid Mechanics	4		3		4							
0620-311	Water Resources	4	5	4	5	4		5	4			4	
0620-312	Environmental Engineering	4	3	4	4	4	3	3	4		3	3	4
0620-350	Soil Mechanics	2	3	3	2	2		2				2	
0620-373	Reinforced Concrete I	4	2	4	2	4	2	3	2	3	3	3	
0620-373	Reinforced Concrete I	2		3	3	3	3	2	2	1			
0620-412	Open Channel Hydraulics	4	4	4				3				4	
0620-414	Hydraulic Engineering	4		5	4	5		3				5	
0620-435	Construction Engineering and Management	5		4	5			4				4	3

0620-436	Construction Work Improvement				4	3		4	3			3	3
0620-449	Civil Engineering Systems	5	3		4	4	4	4	4	4	4	5	4
0620-471	Steel Design I	5	4	4		4	4	4	4	4	4	4	
0620-473	Reinforced Concrete II	4		4		4	4	3	3	4		3	
0620-473	Reinforced Concrete II	2		2		3		1		2			
0620-476	Computer Applications in Structural Engineering	4		5	5	3	3	5	4	5	3	5	
0620-490	Capstone Design Course	3	2	3	3	3	3	3	3	3	3	3	
0620-490	Capstone Design Course	4		5		4	4	5				4	
0620-490	Capstone Design Course	5	5	5	5	5	5	5	5	5	5	5	
0620-490	Capstone Design Course	4	4	3	4	3	4	4	4	5	4	4	
0620-490	Capstone Design Course	5	3	5	4	5	4	4	5	5	5	5	
	Weighted Average	**3.8**	**3.8**	**3.9**	**3.9**	**3.6**	**3.7**	**3.6**	**3.7**	**3.8**	**3.9**	**3.8**	**3.6**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0620-201	Introduction to Design	1. Change course title from introduction to design to design management 2. Make sure the course is taken by students early in their program before taking capstones courses
0620-271	Structural Analysis I	Overall the class performance was satisfactory. Student outcomes 'c' and 'h' are not applicable to the course and are therefore not measured. Students lack the sketching skills as well as use of simple computational tools like Excel. Assigning a term paper on 'soft' and societal impact issues of structural engineering to measure outcomes 'h' and 'i' will be a good idea and should be implemented after consultation with the structural faculty. If needed the English language unit of the college (which offers ENG 221 at the same time as this course is offered) should also be engaged in the course to help improve and evaluate the linguistic and presentation aspects of the term paper.
0620-311	Water Resources	This is a group of 32 students, 2 males and 30 females. Two female students dropped the course . The students have a mixed academic standing ranging from Excellent to poor. Relatively, compared to previous classes, the small number of students in a large class room made it easy to teach the course and give attention to individual student. Over my long years of teaching carrier; I had for the first time a special need female student with

		limited eye sight ability. I gave her extra attention and enlarged font Tests and Exam Papers and gave her additional time. Also I relief her from Lab work. To my surprise the girl is doing very well in the class and is very motivated. She scored overall Grade A
0620-350	Soil Mechanics	1. Students have deficiencies in English language understanding, reading, speaking, and writing. This is reflected on level of understanding of course materials. 2. Course materials are very extensive and long. Suggestions: It should be split into two 3. Reducing the weight assigned to homework, have resulted in reducing the spread of homework copying which is reflected on the students understanding 4. In general, students do not have good basic engineering understanding of units and measurements as this is a fundamental issue
0620-373	Reinforced Concrete I	superb students
0620-412	Open Channel Hydraulics	This is a group of 30 Students; 5 males and 25 Females. 1 male and 1 female dropped the course. The group ranges from very good to above average academic standing. The number of student population in large size lecture room makes the learning process easy this semester. Tests and Exams are easy to conduct.
0620-435	Construction Engineering and Management	- Lab section component should be separated from the course.
0620-471	Steel Design I	This is an above average batch of students
0620-473	Reinforced Concrete II	This is the second time that I am teaching this course and faced the same problem that the students are not adequately prepared in the fundamentals of RC design learned in CE 373. It was noticed that the students were very weak in the concepts of reading and preparing design sketches, following the load path in a structural system through various components, concept of development and cut-off lengths and use of reinforced concrete design charts. The weak performance in this class may be due to the fact that design is not a unique process and everyone has a different way of approaching the subject and the students may have been taught the earlier RC design course in a different style. It is therefore suggested that the faculty teaching RC 1 should teach the RC 2 course to the same group of students in the following semester so that the faculty and students are aware of the level of coverage of course topics in the first course and there is a continuity in the learning style. Preparation of design sketches and reading of structural drawings should be part of both RC design courses. This aspect is currently missing in the course curriculum. I had a very good teaching assistant who diligently marked the homeworks but the students did not even try to benefit from this feedback as they repeated the same mistakes in exams. It is suggested to reduce the amount of homework in the course so that the TA can have a mandatory tutorial session every week. Copying of homework is widespread and the students are not willing to work in the class on design problems. This situation can be remedied to some extent by mandatory participation in tutorial sessions and emphasis on graphical presentation of final design.

0620-476	Computer Applications in Structural Engineering	Introduce Autodesk Robot structural analysis and design system and integrate with Revit.
0620-490	Capstone Design Course	Class size shall be limited to 12 as per the CE department by-laws.
0620-490	Capstone Design Course	The delay of the exhibition this semester to July is an excellent idea as it gave the students time to concentrate on the actual design work
0620-490	Capstone Design Course	This semester I have supervised a total of 19 students distributed over four groups resulting in four different projects, each with unique idea and with direct applications to Kuwait Development Plan. Each project covered at least four desciplines in civil engineering. I would recommend to be covered in two semeters to give the studnets enough tiume to perform detailed search and design.

Summer semester

Instructors: **6**

Courses: **6**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0620-371	Structural Analysis II	H		M		H		H	M	M		H	
0620-412	Open Channel Hydraulics	H	M	M				M				L	
0620-435	Construction Engineering and Management	M		M	M			M				M	M
0620-435	Construction Engineering and Management	M		M	M			M				M	M
0620-436	Construction Work Improvement	L			H	M		H	H			H	M

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0620-371	Structural Analysis II	4		3		5		3	4	3		3	
0620-412	Open Channel Hydraulics	4	4	4				3				4	
0620-435	Construction Engineering and Management	3		5	4			4				5	4
0620-435	Construction Engineering and Management	4		3	4			3				4	3

0620-436	Construction Work Improvement	5			4	5		5	5			5	5
	Weighted Average	**3.9**	**4**	**3.8**	**4**	**5**	**0**	**3.7**	**4.6**	**3**	**0**	**4.2**	**4**

The weighted average for an outcome is calculated by $\frac{\sum(performanœ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0620-412	Open Channel Hydraulics	This is a group of 33 Female Students. The group ranges from excellent / very good to above average academic standing. The large number of student population makes the learning process is difficult especially in the Summer semester; where the past of lecturing are fast and quick. Tests and Exams are difficult to conduct in small class room. On the bright side ; Over my long years of teaching carrier; I had for the first time a special need female student with limited eye sight ability. This is her second course with me after attending CE 311 Water Resources in the Spring 2017 . She registered this summer for CE 412 course. Again, I gave her extra attention and enlarged font Tests and Exam Papers and gave her additional time. To my surprise the girl is doing very well in the class and is very motivated. She again scored overall Grade A ; which make me very proud.
0620-436	Construction Work Improvement	- Per suggestions from previous semesters, students were reminded to demonstrate hardware/software use throughout the semester. - The outcomes were achieved at ratings between Very Good and Excellent. - Monitor the outcomes to ensure this trend continues in future semesters.

Computer Engineering Program

Fall semester

Instructors: **23**

Courses: **48**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0612-200															
0612-200															
0612-201	Advanced Programming Techniques	H													
0612-203	Discrete Mathematics for Computer Engineering.	H													
0612-203	Discrete Mathematics for Computer Engineering.	H													
0612-210	Computer Engineering Ethics							H			H				
0612-221	Software Engineering I														
0612-221	Software Engineering I				H			H							
0612-264	Digital Logic Laboratory							H							
0612-264	Digital Logic Laboratory							H							
0612-264	Digital Logic Laboratory							H							
0612-264	Digital Logic Laboratory							H							
0612-300	Design and Analysis of Algorithms	H													
0612-301	Advanced Programming Techniques			H		H						H			
0612-301	Advanced Programming Techniques			H		H						H			
0612-325	Human Computer Interaction							H							
0612-333	Intelligent Systems	M						H							
0612-341	Database Systems-I	M			M			M			L				
0612-356		H													
0612-363	Introduction to Microprocessors	L													
0612-363	Introduction to Microprocessors	H													
0612-363	Introduction to Microprocessors	H													

0612-363	Introduction to Microprocessors	H														
0612-363	Introduction to Microprocessors	H														
0612-364	Microprocessors Laboratory							H								
0612-364	Microprocessors Laboratory							L								
0612-364	Microprocessors Laboratory							L								
0612-368	Computer Organization	H														
0612-395	Computer Systems Engineering	M			H			H			H					
0612-395	Computer Systems Engineering	M			H			H			H					
0612-395	Computer Systems Engineering	H			H			H			H					
0612-395	Computer Systems Engineering	H			H			H			H					
0612-401	Database Systems	M			M			M			L					
0612-405	Operating System Principles	H			M											
0612-424	Value Engineering															
0612-454	Performance Evaluation of Computer Networks	H														
0612-456	Computer Network II	H						M								
0612-464	Diagnosis and Reliable Design of Digital Systems	H	H	M		H						H				
0612-468	Computer Architecture	H														
0612-469	Computer Architecture Laboratory							H								
0612-495	Capstone Design	H			H			H			H					
0612-495	Capstone Design	H			H			H			H					

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0612-200		3													
0612-200		3													
0612-201	Advanced Programming Techniques	3													
0612-203	Discrete Mathematics for Computer Engineering.	4													

0612-203	Discrete Mathematics for Computer Engineering.	4												
0612-210	Computer Engineering Ethics						3			3				
0612-221	Software Engineering I				4		5							
0612-221	Software Engineering I				4		4							
0612-264	Digital Logic Laboratory						3							
0612-264	Digital Logic Laboratory						4							
0612-264	Digital Logic Laboratory						4							
0612-264	Digital Logic Laboratory						4							
0612-300	Design and Analysis of Algorithms	3												
0612-301	Advanced Programming Techniques			3		3					3			
0612-301	Advanced Programming Techniques			3		3					3			
0612-325	Human Computer Interaction						5							
0612-333	Intelligent Systems	3					4							
0612-341	Database Systems-I	3			4		4			4				
0612-356		3										4		
0612-363	Introduction to Microprocessors	3												
0612-363	Introduction to Microprocessors	4												
0612-363	Introduction to Microprocessors	4												
0612-363	Introduction to Microprocessors	3												3
0612-363	Introduction to Microprocessors	3												3
0612-364	Microprocessors Laboratory						3							
0612-364	Microprocessors Laboratory						4							
0612-364	Microprocessors Laboratory						3							
0612-368	Computer Organization	3												
0612-395	Computer Systems Engineering	4			5		4			5				
0612-395	Computer Systems Engineering	4			5		4			5				
0612-395	Computer Systems Engineering	4			5		5			5				
0612-395	Computer Systems Engineering	5			5		4			5				

0612-401	Database Systems	3			4			4			4				
0612-405	Operating System Principles	3			3									4	
0612-424	Value Engineering	4			4			4			4				
0612-454	Performance Evaluation of Computer Networks	5													
0612-456	Computer Network II	3						3							
0612-464	Diagnosis and Reliable Design of Digital Systems	5	3	2		4						4			
0612-468	Computer Architecture	2													
0612-469	Computer Architecture Laboratory							5							
0612-495	Capstone Design	5			5			5			5				
0612-495	Capstone Design	4			5			4			4				
	Weighted Average	**3.6**	**3**	**2.8**	**4.6**	**3.3**	**0**	**4**	**0**	**0**	**4.5**	**3.3**	**0**	**0**	**0**

The weighted average for an outcome is calculated by $\frac{\sum(performanœ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0612-201	Advanced Programming Techniques	This is a resubmission for the fall 2016/2017
0612-301	Advanced Programming Techniques	We have outcome a from the new abet outcomes (High, Satisfactory, Final Practical Exam, Excellent, Average, Bad)
0612-301	Advanced Programming Techniques	We have outcome a from the new abet outcomes (High, Satisfactory, Final Practical Exam, Excellent, Average, Bad)
0612-356		More outcomes could be. Overed for Network 1
0612-363	Introduction to Microprocessors	The outcome (a) is not that much important for this course.
0612-395	Computer Systems Engineering	For outcome a: Students applied basic science and engineering concepts in evaluating the alternative designs and rank them based on matrix ranking. This goes to all design stages. In addition, many calculations are needed based on the project nature. For outcome d: The whole course is based on teamwork. Teams consist from 3-5 students and the work is divided among them. The students test, evaluate and combine all parts to build the complete corresponding design. For outcome g: Different phases of report submissions were carried out during this course where feedback is given to each team. Students must consider the feedback, modify and update the documentation on the next submission. In addition, 4-5 oral presentations held in class and the students

		were evaluated and given feedback. For outcome j: Students need applied the latest technology used in terms of Hardware/Software to select the suitable components. This is approved by comparing different technologies.
0612-395	Computer Systems Engineering	For outcome a: Students applied basic science and engineering concepts in evaluating the alternative designs and rank them based on matrix ranking. This goes to all design stages. In addition, many calculations are needed based on the project nature. For outcome d: The whole course is based on teamwork. Teams consist from 3-5 students and the work is divided among them. The students test, evaluate and combine all parts to build the complete corresponding design. For outcome g: Different phases of report submissions were carried out during this course where feedback is given to each team. Students must consider the feedback, modify and update the documentation on the next submission. In addition, 4-5 oral presentations held in class and the students were evaluated and given feedback. For outcome j: Students need applied the latest technology used in terms of Hardware/Software to select the suitable components. This is approved by comparing different technologies.
0612-454	Performance Evaluation of Computer Networks	None.
0612-495	Capstone Design	--

Spring Semester

Instructors: **16**

Courses: **30**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0612-203	Discrete Mathematics for Computer Engineering.	H													
0612-203	Discrete Mathematics for Computer Engineering.	H													
0612-207	Data Structures	M													
0612-207	Data Structures	H													
0612-221	Software Engineering I				H			H							
0612-264	Digital Logic Laboratory							H							
0612-300	Design and Analysis of Algorithms	H													
0612-325	Human Computer Interaction						M								
0612-325	Human Computer Interaction							H							

0612-356	Computer Networks I	H													
0612-363	Introduction to Microprocessors	H													
0612-363	Introduction to Microprocessors	L													
0612-364	Microprocessors Laboratory							L							
0612-368	Computer Organization	M													
0612-395	Computer Systems Engineering	H			H			H			H				
0612-395	Computer Systems Engineering	H			H			H			M				
0612-445	Operating System Principles	H			M										
0612-458	Network Programming	M													
0612-468	Computer Architecture	H		M								H			
0612-469	Computer Architecture Laboratory		H	M				H				H			
0612-495	Capstone Design	H			H			H			H				
0612-495	Capstone Design	M			H			H			H				

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0612-203	Discrete Mathematics for Computer Engineering.	4													
0612-203	Discrete Mathematics for Computer Engineering.	3													
0612-207	Data Structures	4													
0612-207	Data Structures	3													
0612-221	Software Engineering I				4			4							
0612-264	Digital Logic Laboratory							4							
0612-300	Design and Analysis of Algorithms	3													
0612-325	Human Computer Interaction						4								
0612-325	Human Computer Interaction							4							
0612-356	Computer Networks I	3											4		
0612-363	Introduction to Microprocessors	5													
0612-363	Introduction to Microprocessors	2													3

0612-364	Microprocessors Laboratory							4							
0612-368	Computer Organization	4													
0612-395	Computer Systems Engineering	5			5			5			5				
0612-395	Computer Systems Engineering	3			4			3			3				
0612-445	Operating System Principles	4			3										
0612-458	Network Programming	4													
0612-468	Computer Architecture	3													
0612-469	Computer Architecture Laboratory							4							
0612-495	Capstone Design	4			4			4			5				
0612-495	Capstone Design	4			5			4			5				
	Weighted Average	**3.7**	**0**	**0**	**4.2**	**0**	**4**	**4**	**0**	**0**	**4.6**	**0**	**0**	**0**	**0**

The weighted average for an outcome is calculated by $\frac{\sum(performanœ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0612-207	Data Structures	This course requires an intense coding practices on applying data structures on solving real life problems. .
0612-356	Computer Networks I	More outcomes could be. Overed for Network 1
0612-363	Introduction to Microprocessors	For outcome a: Students applied basic science and engineering concepts in writing an assembly code to build a simple calculator for specific functionality using EdSim51 simulator. This needs to calculate the time delay, frequency and include all alternatives. In addition, the hardware components (keypad and LCD) are needed to be connected to the processor ports to perform correctly. The way of assigning the pins to the corresponding ports and evaluating the minimum port pins is another important issue. Finally, students have documented all the design steps, tested and analysed the results in a technical report.
0612-458	Network Programming	None
0612-495	Capstone Design	For outcome a: Students applied basic science and engineering concepts in evaluating the alternative designs and rank them based on matrix ranking. This goes to all design stages. In addition, many calculations are needed based on the project nature. For outcome d: The whole course is based on teamwork. Teams consist from 3-4 students and the work is divided among them. The students test, evaluate and combine all parts to build the complete corresponding design. For outcome g:

		Different phases of report submissions were carried out during this course where feedback is given to each team. Students must consider the feedback, modify and update the documentation on the next submission. In addition, 3-4 oral presentations held in class and the students were evaluated and given feedback. For outcome j: Students need applied the latest technology used in terms of Hardware/Software to select the suitable components. This is approved by comparing different technologies based on scientific justifications.

Electrical Engineering Program

Fall semester

Instructors: **13**

Courses: **33**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0610-212	Engineering Math														
0610-230	Semi-conductors														
0610-233	Electronics I	L		H								M			
0610-233	Electronics I	L		H								M			
0610-233	Electronics I	L		H								M			
0610-234	Electronics Laboratory I		H		M			M				M			
0610-234	Electronics Laboratory I		H		M			M				M			
0610-234	Electronics Laboratory I		H		M			M				M			
0610-297	Corner-Stone Design														
0610-297	Corner-Stone Design														
0610-312	Signals and Systems	H				M						H		H	
0610-318	DSP														
0610-318	DSP														
0610-320	Electromagnetic Field Theory	H		M								L		H	
0610-320	Electromagnetic Field Theory	H		M								L		H	
0610-320	Electromagnetic Field Theory	H		M								L		H	
0610-320	Electromagnetic Field Theory	H		M								L		H	
0610-343	Energy Conversion I	M		H		H						L			
0610-343	Energy Conversion I	M		H		H						L			
0610-370	Control Theory I	H		H		H						H		H	H
0610-370	Control Theory I	H		H		H						H		H	H
0610-381	Communication Theory	H		H								L	M		
0610-432	Analog Integrated Circuits	M		H								L			M

0610-433	Electronics III			H				M	M			M			M
0610-433	Electronics III			H				M	M			M			M
0610-458	Electric Power Distribution Engineering			H		H						M			
0610-460	Introduction to Communication Networks		H	H	M	H		M				M			
0610-472	Control Theory II	H		H		M						H		H	H
0610-477	Optimization Techniques	H		M	M	H						H		H	
0610-497	Engineering Design	H	H	H	H	H	H	H	M	M	M	H			H
0610-497	Engineering Design	H	H	H	H	H	H	H	M	M	M	H			H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0610-212	Engineering Math	3												3	
0610-230	Semi-conductors	3							2	2	3				
0610-233	Electronics I	4		3								3			
0610-233	Electronics I	3		3								3			
0610-233	Electronics I			2								3			
0610-234	Electronics Laboratory I		4		4			4				4			
0610-234	Electronics Laboratory I		4		4			4				4			
0610-234	Electronics Laboratory I		4		3			4				4			
0610-297	Corner-Stone Design	4	5	5	5	4	4	4	4	4	4	4	3	3	4
0610-297	Corner-Stone Design	4	4	3	4	3	4	4	3		4	4			
0610-312	Signals and Systems	4		4		3						4		4	3
0610-318	DSP	3	3	3		4			3		3	3		3	4
0610-318	DSP	4	4	4	4	4	4	3	3	4	4	4	3	4	4
0610-320	Electromagnetic Field Theory	3		4											
0610-320	Electromagnetic Field Theory	3		3								2		3	
0610-320	Electromagnetic Field Theory	3		2								3		3	
0610-320	Electromagnetic Field Theory	2		3								2		1	
0610-343	Energy Conversion I	4		4		3						3			

0610-343	Energy Conversion I	3		3		3						3			
0610-370	Control Theory I	3		3		3						3		3	3
0610-370	Control Theory I	3		3		3						2		3	2
0610-381	Communication Theory	4		4								3	3		
0610-432	Analog Integrated Circuits	3		3								3			3
0610-433	Electronics III			3				2				3			3
0610-433	Electronics III			3				3				4			4
0610-458	Electric Power Distribution Engineering	3		3		3						4			
0610-460	Introduction to Communication Networks		3	3	4	3		4				3			
0610-472	Control Theory II	4		4		4						4		4	4
0610-477	Optimization Techniques	4		3	3	3						3		3	
0610-497	Engineering Design	4	4	4	4	4	4	4	3	3	3	4			4
0610-497	Engineering Design	4	4	4	4	4	4	4	4	4	3	4			4
	Weighted Average	**3.4**	**3.8**	**3.2**	**3.8**	**3.3**	**4**	**3.7**	**3.5**	**3.5**	**3**	**3.4**	**3**	**3**	**3.4**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0610-212	Engineering Math	Outcome 11-k (use of tools such as Matlab) is not currently relevant to the new course syllabus. It is recommended to change that and replace it with outcome 5-e.
0610-233	Electronics I	1. Students have some weaknesses in circuit basics (KVL, KCL). 2. Students forget the units.
0610-318	DSP	The number of students enrolled in each section should not exceed the instructor-to-student ratio (i.e., 25 to 30 students/class). This is to enssure and improve the communication skills between the instructor and the students as well as the design skills to meet the requirements assigned by the ABET.
0610-320	Electromagnetic Field Theory	EE212 should be revisted
0610-320	Electromagnetic Field Theory	I belive the problem lies with the preceding course EE212.
0610-320	Electromagnetic Field Theory	1. Students do not attend the lectures, 2. Students are weak in calculus and basic math, 3. Students do not submit the homeworks (only 30% are submitting the HW), 4. Students do not submit the matlab HW (only 2 students did),

0610-370	Control Theory I	The students need to be given MATLAB in depth in previous courses.
0610-381	Communication Theory	It is recommended to add Outcome 5-e to the course.
0610-458	Electric Power Distribution Engineering	The students attendance was not satisfactory and the homework solving was not taken seriously. The students mathematical and engineering background need more emphasize and enhancement
0610-497	Engineering Design	The evaluation was based on inputs from proposals, progress reports, oral presentations, final project reports, final projects demonstration where instructor and external instructor assessed the four projects.
0610-497	Engineering Design	Presentation, design and reporting skills maybe improved through EE297.

Spring semester

Instructors: **11**

Courses: **27**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0610-213	Linear Circuits Analysis	H										H			
0610-230	Semi-conductors														
0610-297	Corner-Stone Design														
0610-297	Corner-Stone Design														
0610-312	Signals and Systems	H				M						H		H	
0610-312	Signals and Systems	H				M						H		H	
0610-318	DSP														
0610-318	DSP														
0610-320	Electromagnetic Field Theory	H		M								L		H	
0610-320	Electromagnetic Field Theory	H		M								L		H	
0610-333	Electronics II	L		H		H						M			
0610-334	Electronics Laboratory II	L	H	M	M			H	M			H			M
0610-334	Electronics Laboratory II	L	H	M	M			H	M			H			M
0610-343	Energy Conversion I	M		H		H						L			
0610-343	Energy Conversion I	M		H		H						L			

0610-381	Communication Theory	H		H							L	M		
0610-410	Active Filter Design	M		H							L			M
0610-420	Antenna and Propagation	H		H	M			M	M	M	M	M		H	H
0610-433	Electronics III			H				M	M			M			M
0610-433	Electronics III			H				M	M			M			M
0610-434	Electronics Laboratory III		H	H				M	H			H			H
0610-434	Electronics Laboratory III		H	H				M	H			H			H
0610-443	Energy Conversion II	M		H	M			M				M			
0610-472	Control Theory II	H		H		M			H			H		H	H
0610-485	Digital Signal Processing													H	H
0610-497	Engineering Design	H	H	H	H	H	H	H	M	M	M	H			H
0610-497	Engineering Design	H	H	H	H	H	H	H	M	M	M	H			H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0610-213	Linear Circuits Analysis	3										3			
0610-230	Semi-conductors	3		3								3			
0610-297	Corner-Stone Design	4	3	3	4	3	2	3	4	3	3	4	3	3	3
0610-297	Corner-Stone Design	4	3	3	4	3	2	3	4	3	3	4	3	3	3
0610-312	Signals and Systems	1				1						1		1	
0610-312	Signals and Systems	4				4						3		4	
0610-318	DSP	4	3	4	3	3	3	3	3	3	4	4	3	4	3
0610-318	DSP	3	3	3	3	4	3	3	3	4	4	3	3	3	3
0610-320	Electromagnetic Field Theory	3		4								4		3	
0610-320	Electromagnetic Field Theory	3		3								3		3	
0610-333	Electronics II	4		4		4						3			
0610-334	Electronics Laboratory II	3	3	3	3			3				3			3
0610-334	Electronics Laboratory II	3	3	3	3			3				3			3
0610-343	Energy Conversion I	3		3		4						3			

0610-343	Energy Conversion I	4		3		4						3			
0610-381	Communication Theory	4	4	4								3	3		
0610-410	Active Filter Design	4		4								4			4
0610-420	Antenna and Propagation	5		5	4			3	4	3	4	5		4	5
0610-433	Electronics III			2								3			
0610-433	Electronics III			3								3			
0610-434	Electronics Laboratory III		4					3				3			
0610-434	Electronics Laboratory III		4					3				3			
0610-443	Energy Conversion II	4		4	3			4				3			
0610-472	Control Theory II	3		3		3						3		3	3
0610-485	Digital Signal Processing													3	3
0610-497	Engineering Design	5	5	5	5	5	5	5	5	5	5	5			5
0610-497	Engineering Design	4	4	4	4	4	4	4	4	4	3	4			4
	Weighted Average	**3.5**	**3.8**	**3.6**	**3.8**	**3.8**	**4.5**	**3.6**	**4.3**	**4**	**4**	**3.2**	**3**	**3**	**3.8**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0610-297	Corner-Stone Design	Most of the students expressed no interest in learning electrical engineering design fundamentals or express any interest in the lab work.
0610-297	Corner-Stone Design	Most of the students expressed no interest in learning electrical engineering design fundamentals or express any interest in the lab work.
0610-318	DSP	The number of students enrolled in each section should not exceed the instructor-to-student ratio (i.e., 25 to 30 students/class). This is to enssure and improve the communication skills between the instructor and the students as well as the design skills to meet the requirements assigned by the ABET.
0610-320	Electromagnetic Field Theory	1. Some students have really problems in basic Calculus (Coordinate systems and integration), 2. 20% of students attended the free problem sessions.
0610-320	Electromagnetic Field Theory	1. Students suffer from basic calculus and advanced math problems, 2. Students do not submit matlab homework
0610-433	Electronics III	Students need to improve their SPICE skills in previous courses. OUTCOME 7 : communication. It is not applicable in this semester OUTCOME 14 : hardware design. This outcome needs to be eliminated.

0610-433	Electronics III	Students need to improve their SPICE skills in previous courses. OUTCOME 7 : communication. It is not applicable in this semester OUTCOME 14 : hardware design. This outcome needs to be eliminated.
0610-485	Digital Signal Processing	The weakness of the students had to be taking care of in the early stages, and special focuses on thier abilities and skills are needed on how to apply knowledge of mathematics and statistics related to the engineering field of digital signal processing.
0610-497	Engineering Design	I am happy with the student performance in this course. They have shown excellent ability in applying what they have learned to solve some engineering challenges that deals with issues such as gun safety, refuges, and work place. In addition, the students show excellent oral and written abilities.
0610-497	Engineering Design	Presentation, design and reporting skills maybe improved through EE297.

Summer semester

Instructors: **13**

Courses: **18**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0610-212	Engineering Math														
0610-213	Linear Circuits Analysis	H										H			
0610-233	Electronics I	L		H								M			
0610-233	Electronics I	L		H								M			
0610-318	DSP														
0610-333	Electronics II	L		H		H						M			
0610-334	Electronics Laboratory II	L	H	M	M			H				H			M
0610-334	Electronics Laboratory II	L	H	M	M			H				H			M
0610-334	Electronics Laboratory II	L	H	M	M			H				H			M
0610-370	Control Theory I	H		H		H						H		H	H
0610-433	Electronics III			H				M				M			M
0610-434	Electronics Laboratory III		H					M				H			H
0610-458	Electric Power Distribution Engineering			H		H						M			

P E R F O R M A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l	m	n
0610-212	Engineering Math														
0610-213	Linear Circuits Analysis	3										4			
0610-233	Electronics I	3		3								4			
0610-233	Electronics I	4		4								4			
0610-318	DSP	4	4	4	4	4	4	3	3	4	4	4	3	4	4
0610-333	Electronics II	4		4		4						4			
0610-334	Electronics Laboratory II		3	3	3			3				3			3
0610-334	Electronics Laboratory II		3	3	3			3				3			3
0610-334	Electronics Laboratory II		3	3	3			3				3			3
0610-370	Control Theory I	4		4		4						5		4	4
0610-433	Electronics III			4								3			
0610-434	Electronics Laboratory III		4					4				4			
0610-458	Electric Power Distribution Engineering	3		3		3						4			
	Weighted Average	**3.7**	**3.5**	**3.5**	**3.5**	**3.5**	**0**	**3.3**	**3**	**3**	**3**	**3.5**	**0**	**0**	**3**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

Industrial & Management Systems Engineering Program

Fall semester

Instructors: **11**

Courses: **29**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0660-221	Introduction to Industrial Engineering		H		H	H	H	H		H			
0660-312	Industrial Engineering Labs		H		H			H			H	H	
0660-312	Industrial Engineering Labs		H		H			H			H	H	
0660-321	Work Design and Measurement	H	H	H					H		H	H	H
0660-325	Safety and Health for Engineers		H		H		H	H	H	H	H	H	H
0660-351	Engineering Statistical Analysis	H	H			H						H	H
0660-351	Engineering Statistical Analysis	H	H			H						H	H
0660-352	Production Cost Analysis	H				H					H	H	H
0660-361	Operations Research I	H	H	H	H	H		H		H		H	H
0660-372	Project Management and Control	H	H	H	H	H	H	H	H	H	H	H	H
0660-381	Data and Decision Analysis	H	H	H	H	H		H				H	H
0660-425	Human Factors Engineering	H	H	H	H	H	H	H	H	H	H	H	H
0660-434	Facilities Planning and Design	H		H		H						H	H
0660-434	Facilities Planning and Design	H		H		H						H	H
0660-451	Reliability and Maintainability Engineering	H	H	H	H	H	H	H		H	H	H	H
0660-454	Production Planning and Inventory Control	H		H		H						H	H
0660-457	Quality Control	H	H	H	H	H	H	H	H	H	H	H	H
0660-459	Quality in Healthcare	H	H	H	H	H	H	H	H	H	H	H	H
0660-461	Operations Research II	H				H						H	H
0660-471	Engineering Management				H		H	H	H	H	H	H	H
0660-481	Systems Simulation		H	H	H	H		H		H		H	H
0660-489	Special Topics in Management Systems Engineering												

0660-496	Industrial Engineering Design	H	H	H	H	H	H	H	H	H	H	H	H
0660-496	Industrial Engineering Design	H	H	H	H	H	H	H	H	H	H	H	H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0660-221	Introduction to Industrial Engineering		3		3	3		3					
0660-312	Industrial Engineering Labs		5		5			4			4	5	
0660-312	Industrial Engineering Labs		5		4			4			4	4	
0660-321	Work Design and Measurement	4	4	4					3		3	4	
0660-325	Safety and Health for Engineers		4		4		4	4	4	4	4	4	
0660-351	Engineering Statistical Analysis	2	4			4						3	
0660-351	Engineering Statistical Analysis	2	1			3						4	
0660-352	Production Cost Analysis	4				5						3	5
0660-361	Operations Research I	5	4	3	4	5	3	5	3	4	3	3	4
0660-372	Project Management and Control				4	4	4	4		5		4	
0660-381	Data and Decision Analysis		4			4						4	
0660-425	Human Factors Engineering	4	4	4	4	4	4	4	3	4	3	4	
0660-434	Facilities Planning and Design	3		4		5						4	
0660-434	Facilities Planning and Design	4		4		4	4	4				5	
0660-451	Reliability and Maintainability Engineering	5	5	3		4	3				4	4	
0660-454	Production Planning and Inventory Control	3				3			3			3	
0660-457	Quality Control	3	4			3				4	3	3	
0660-459	Quality in Healthcare	3	4	3	3	3	3	3	3	3	3	4	4
0660-461	Operations Research II	2				4						3	5
0660-471	Engineering Management				4		3	4	4	3	4	3	4
0660-481	Systems Simulation		3	3	5	5		5		3		4	
0660-489	Special Topics in Management Systems Engineering			4	4			4				4	
0660-496	Industrial Engineering Design	3	2	3	2	2	3	3	3	2	3	3	3

0660-496	Industrial Engineering Design	4	4	5	3	5	3	4	4	3	3	5	5
	Weighted Average	**3.4**	**3.8**	**3.6**	**3.8**	**3.9**	**3.4**	**3.9**	**3.4**	**3.5**	**3.5**	**3.8**	**4.3**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0660-312	Industrial Engineering Labs	More comments can be provided by the TAs who are conducting the experiments.
0660-434	Facilities Planning and Design	The time of the course was little late (5 oclock), some of the students were not so alert in the classes.
0660-451	Reliability and Maintainability Engineering	The students performance was satisfactory.
0660-459	Quality in Healthcare	The students gained the ability to apply various statistical and quality control tools in healthcare management systems. they did projects in various hospitals and showed a satisfactory performance.
0660-481	Systems Simulation	The students still need more time on simulation software.
0660-496	Industrial Engineering Design	The students in this section of IMSE 496 were not as strong as the other sections and previous years. This could be due to a decline in the level of students.
0660-496	Industrial Engineering Design	The students in this section were excellent and achieved a greart project task in several areas.

Spring semester

Instructors: **12**

Courses: **25**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0660-221	Introduction to Industrial Engineering		H		H	H	H	H		H			
0660-312	Industrial Engineering Labs		H		H			H			H	H	
0660-321	Work Design and Measurement	H	H	H					H		H	H	H
0660-325	Safety and Health for Engineers		H		H		H	H	H	H	H	H	H
0660-325	Safety and Health for Engineers		H		H		H	H	H	H	H	H	H

0660-351	Engineering Statistical Analysis	H	H			H					H	H	
0660-352	Production Cost Analysis	H				H					H	H	H
0660-361	Operations Research I	H	H	H	H	H		H		H		H	H
0660-372	Project Management and Control	H	H	H	H	H	H	H	H	H	H	H	H
0660-381	Data and Decision Analysis	H	H	H	H	H		H				H	H
0660-425	Human Factors Engineering	H	H	H	H	H	H	H	H	H	H	H	H
0660-434	Facilities Planning and Design	H		H		H						H	H
0660-451	Reliability and Maintainability Engineering	H	H	H	H	H	H	H		H	H	H	H
0660-454	Production Planning and Inventory Control	H		H		H						H	H
0660-458	Design of Experiments	H	H	H	H	H		H				H	H
0660-461	Operations Research II	H				H						H	H
0660-464	Optimization Methods	H	H	H	H	H		H		H		H	H
0660-471	Engineering Management				H		H	H	H	H	H	H	H
0660-481	Systems Simulation		H	H	H	H		H		H		H	H
0660-496	Industrial Engineering Design	H	H	H	H	H	H	H	H	H	H	H	H
0660-496	Industrial Engineering Design	H	H	H	H	H	H	H	H	H	H	H	H
0660-496	Industrial Engineering Design	H	H	H	H	H	H	H	H	H	H	H	H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0660-221	Introduction to Industrial Engineering		3		3	3		3					
0660-312	Industrial Engineering Labs		5		5			4			4	5	
0660-321	Work Design and Measurement	4	3	3								3	
0660-325	Safety and Health for Engineers		3		4		4	4	3	4	3	4	
0660-325	Safety and Health for Engineers		4		4		4	4	4	4	4	4	
0660-351	Engineering Statistical Analysis	3	3			3						3	
0660-352	Production Cost Analysis	3				3			4	3			
0660-361	Operations Research I	5	4	3	4	5	3	5	3	4	3	3	4

0660-372	Project Management and Control	4			4	4	4	3		4		3	
0660-381	Data and Decision Analysis		4			4						3	
0660-425	Human Factors Engineering				4	4			4	4			
0660-434	Facilities Planning and Design	4		5		5		4				4	
0660-451	Reliability and Maintainability Engineering	4	3	3	4	4	3	4	3	3	3	4	4
0660-454	Production Planning and Inventory Control	4		5		3						4	
0660-458	Design of Experiments	5	5	5	4	5	3	4	4	4	4	5	
0660-461	Operations Research II	4				4						4	
0660-464	Optimization Methods	5				4						3	
0660-471	Engineering Management				4		3	3	4	4	4	3	4
0660-481	Systems Simulation		3	3	5	5		5		3			
0660-496	Industrial Engineering Design			4	4	5	4	4		4		4	
0660-496	Industrial Engineering Design	4	4	5	3	5	3	4	4	3	3	5	5
0660-496	Industrial Engineering Design	4	4	5	3	5	3	4	4	3	3	5	5
	Weighted Average	**4.1**	**3.7**	**4.1**	**3.9**	**4.2**	**3.5**	**3.9**	**3.8**	**3.6**	**3.4**	**3.8**	**4.4**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0660-312	Industrial Engineering Labs	More comments can be provided by the TAs who are conducting the experiments.
0660-381	Data and Decision Analysis	Too many students were enrolled in the class. It has been stressed by the instructor not to increase the number of students more that 35. Note that the section was divided into two in the registration system (males and females). the sample was done for one of these sections anyway...
0660-454	Production Planning and Inventory Control	the students were active in this course. the students showed their interest in having more examples. accordingly, they were encouraged to have extra readings from the textbook and other references.

0660-481	Systems Simulation	the students needed more time and experiments to practice on Arena software....
0660-496	Industrial Engineering Design	The students in this section were excellent and achieved a great project task in several IE areas.
0660-496	Industrial Engineering Design	The students in this section were excellent and achieved a great project task in several IE areas.

Summer semester

Instructors: **3**

Courses: **3**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0660-325	Safety and Health for Engineers		H		H		H	H	H	H	H	H	H
0660-471	Engineering Management				H		H	H	H	H	H	H	H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0660-325	Safety and Health for Engineers		3		4		4	3	3	3	3	4	
0660-471	Engineering Management				4		3	3	4	4	4	3	4
	Weighted Average	**0**	**3**	**0**	**4**	**0**	**3.5**	**3**	**3.5**	**3.5**	**3.5**	**3.5**	**4**

The weighted average for an outcome is calculated by $\frac{\sum(performanœ \times relevance)}{\sum relevance}$

Mechanical Engineering Program

Fall semester

Instructors: **18**

Courses: **32**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-311	Theory of Machines	H		M		H		L		M		M	
0630-322	Engineering Thermodynamics II	H		H	L	H	L	L	M	L	L	M	
0630-331	Fluid Mechanics I	H		L		H			L	L		L	
0630-351	Mechanical Design I												
0630-353	Manufacturing Processes	L		M	M	H		M	L				M
0630-353	Manufacturing Processes	L		M	M	H		M	L				M
0630-353	Manufacturing Processes	L		M	M	H		M	L				M
0630-373	Mechanical Engineering Fundamentals Laboratory	H	H		M	L		H				M	
0630-415	Mechanical Vibrations	H		M		H			M	L	L	M	
0630-415	Mechanical Vibrations	H		M		H			M	L	L	M	M
0630-417	Control of Mechanical Systems	H		M	L	M		L		L		H	
0630-421	Heat Transfer	H		M		H		M				L	
0630-421	Heat Transfer	H		M		H		M				L	
0630-424	Air conditioning and Refrigeration	M		H		M		L	L		M	M	M
0630-424	Air conditioning and Refrigeration	M		H		M		L	L		M	M	M
0630-451	Mechanical Design II	H		H	L	H	L	M	L	M		M	
0630-474	Dynamics of Machines and Mechanical Vibrations Lab.	M	H	M	M	H	L	H				H	

0630-475	Thermal Science Lab. II	H	H	M	M	M	L	H			L	M	

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0630-241	Materials Science and Metallurgy	3	3	2	4	3	4		4	3	3	3	
0630-241	Materials Science and Metallurgy	4	3	3		4	3		3	3	3	3	
0630-241	Materials Science and Metallurgy	2	2	2		2	3		3	3	3	3	
0630-241	Materials Science and Metallurgy	2	2	2		2	3		3	3	3	3	
0630-241	Materials Science and Metallurgy	2	2	3		2	3		3	3	3	3	
0630-311	Theory of Machines	3		3		3		4		1		1	
0630-322	Engineering Thermodynamics II	5					4		3				
0630-331	Fluid Mechanics I	2		2		2			2	2			
0630-351	Mechanical Design I	3		3		2	3		3	3		3	
0630-353	Manufacturing Processes	4		4	4	4	3	4	3	4	4		3
0630-353	Manufacturing Processes	4		4	4	4	4	4	4		4		3
0630-353	Manufacturing Processes	3		3	3	2		2	2				3
0630-373	Mechanical Engineering Fundamentals Laboratory	3	4		5	4		4				3	
0630-415	Mechanical Vibrations	2		3		3			3	2	3	2	
0630-415	Mechanical Vibrations	2		3		2					4	2	
0630-417	Control of Mechanical Systems	4		4		3		3		3		4	
0630-421	Heat Transfer	3		3		3		4				4	
0630-421	Heat Transfer	3		3		3		3				3	
0630-424	Air conditioning and Refrigeration	4		4		4		4	4		4	5	4
0630-424	Air conditioning and Refrigeration	3		3		3		3	4		4	3	3
0630-451	Mechanical Design II	3		3	4	3	3	3	3	5		5	
0630-474	Dynamics of Machines and Mechanical Vibrations Lab.	4	4	3	5	4	4	4				5	
0630-475	Thermal Science Lab. II	3	3		3	3	3	3			3	3	
	Weighted Average	**3**	**3.2**	**3.3**	**4**	**3**	**3.3**	**3.5**	**3.1**	**2.8**	**3.4**	**3.3**	**3.2**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0630-241	Materials Science and Metallurgy	Average performance by the students. This is due to either their study habits, or poor background. I feel some students suffer in their final exam performance due to the very long exam period.
0630-241	Materials Science and Metallurgy	The performance of students was generally very good. I have a large number of excellent students who were eager to learn and ask questions about the subject. Many students did well in exams and quizzes. The number of students with poor performance is small. The instructor and TA provided review sessions before each exam and the students expressed their opinions that the review sessions were very helpful. The On-line Course System (OCS) was utilized to take on-line quiz on phase diagram and phase transformation (chapters 11/12). Also, the course website (OCS) was updated with many examples, animations and links to useful materials science websites.
0630-241	Materials Science and Metallurgy	Overall performance of the students was weak. The weakness was noted in the following: - using basic Calculator for solving Engineering problems; - Basic Chemistry; - English Language (speaking, writing and comprehension); - Geometry; - Reading Charts; especially log scales and related charts - Students still lack the basics of engineering sense and deal with the subject by memorizing the concepts without understanding it - Chemical Eng. students should be taking the course earlier and not when at the verge of graduating - Lab lack depths due to shortage of qualified engineers and technicians in the lab. - Lab Equipment are old and need updating - Small Class was helpfull in improving performance - E-mail was used to contact me in off-hours of the day was helpful
0630-241	Materials Science and Metallurgy	Overall performance of the students was weak. The weakness was noted in the following: - using basic Calculator for solving Engineering problems; - Basic Chemistry; - English Language (speaking, writing and comprehension); - Geometry; - Reading Charts; especially log scales and related charts - Students still lack the basics of engineering sense and deal with the subject by memorizing the concepts without understanding it - Chemical Eng. students should be taking the course earlier and not when at the verge of graduating - Lab lack depths due to shortage of qualified engineers and technicians in the lab. - Lab Equipment are old and need updating - Small Class was helpfull in improving performance - E-mail was used to contact me in off-hours of the day was helpful
0630-241	Materials Science and Metallurgy	In general, the performance of the students was barely satisfactory.

0630-331	Fluid Mechanics I	1. I taught fluid mechanics course for many years. This class had the worst performance ever; they did not show any interest in the subject. I had four problem solving sessions off the class-time, but the attendance rate was really low. I tried to involve the student in class discussion but they barely participated. 2. I used the online course system (OCS) to post HWs, Quizzes, PowerPoint presentation slides and announcements. I have created a discussion forum as well, so the students can post their question and provide a discussion space but they did not participate. 3. The homework is set to help the student to study on regular basis, in order to understand the course contents, and to prepare the student for quizzes and exams. The homework average is high but the quizzes and exams average are really low. Which indicates that the students are not doing the homework by themselves. 4. Although I emphasis on explaining the fluid phenomena and behavior in my lecture, I notice that the students are still focusing on problem solving without showing much of interest on physics. This was concluded based on tests; student might do well in exam on the problem solving part but when it comes to concept question they answer it poorly or do not answer at all. All they ask, are you going to ask us about this topic in exam, so they are taking the course to pass with a good grade but they are missing the objective and the value of taking the course, simply "LEARING and enjoying fluid mechanics" idea is not there!
0630-351	Mechanical Design I	Overall, the students were of the range from satisfactory to weak.
0630-353	Manufacturing Processes	In general, the majority of students showed very good performance in exams and quizzes. Few students did poor in exams and quizzes. The assignments had focused on long-life learning and communication skills related to manufacturing processes and product making (see assignments report). Two visits were made to local manufacturers (Coolex and Al-Adsani Plastics). Also, a visit was made to the local mechanical workshop in the College of Engineering and Petroleum. Finally, the instructor utilized OCS to provide lecture notes, assignments, practice problems, and tens of movies on different manufacturing processes.
0630-353	Manufacturing Processes	Most students worked hard in this section. They were diligent in following-up with material and keeping up with quizzes. Most participated in the factory tour and observed many of the contemporary manufacturing processes such as laser cutting and arc welding using robots.
0630-353	Manufacturing Processes	It was a very weak section of students.
0630-373	Mechanical Engineering Fundamentals Laboratory	The batch of students this semester were very good.
0630-415	Mechanical Vibrations	Students are weak in modeling and obtaining the equations of motion of mechanical systems. It is a result of the way they taught the system dynamics course. Also, they were weak in performing integrations and solving ODE’s.

0630-415	Mechanical Vibrations	student need more practice in math. student were careless in doing a matlab problems.
0630-417	Control of Mechanical Systems	- The low number of students in the class helped in answering all questions in class thoroughly. - The use of MATLAB throughout the course was essential in clarifying the mathematical concepts and validating the analytical work. - Visualizing via MATLAB is highly recommended to help students easily understand the control system design
0630-421	Heat Transfer	The students performed very well in the projects. Average performance in Quizzes and Exams.
0630-421	Heat Transfer	Students were very good in solving the computer assignments and using EES and Matlab. They were involved in class discussion with excellent questions. Some of the students, however, had difficulty handing HW and assignments in time. The design project reveals a lack of practical experience and connection to real engineering problems. Most of the students had difficulty writing their project report and expressing their comments in English for their assignments.
0630-424	Air conditioning and Refrigeration	I used the same way I taught this course before. Student usually like the subject because it relates to the practical side of education. I got them interested in professional societies such as ASHRAE. Student seemed to be interested in the course and I have seen more interactions. I felt content with this group. of course few did not respond as good as I want to. But the overall assessment was positive.
0630-451	Mechanical Design II	Most of the students failed to pass the course. These students are very poor in math, physics, and more importantly finding the final answer. Students seek marks without putting in mind the real value for the final answer. I believe the final answer should have high marks, and students should be educated to get the final answer right. Many students don't believe they can or will get the final answer. I had over 100 problems given to all students through tests and I received less than 10 correct answers.
0630-475	Thermal Science Lab. II	The solar experiment is not working as designed and should be replaced. Students have weak writing skills. Students are good at using EES to analyze the data.

Spring semester

Instructors: **16**

Courses: **24**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0630-208													
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-259	Introduction to Design	M		H	H	M	H	H	M	M	L	H	
0630-311	Theory of Machines	H		M		H		L		M		M	
0630-311	Theory of Machines	H		M		H		L		M		M	
0630-322	Engineering Thermodynamics II	H		H	L	H	L	L	M	L	L	M	M
0630-353	Manufacturing Processes	L		M	M	H		M	L				M
0630-353	Manufacturing Processes	L		M	M	H		M	L				M
0630-361	Project Planning and Management												M
0630-424	Air conditioning and Refrigeration	M		H		M		L	L		M	M	M
0630-429	Mechanical Aspects of Desalination Processes												
0630-451	Mechanical Design II	H		H	L	H	L	M	L	M		M	
0630-455	Computer-Aided Design	H		M	M	H	L	H		M	L	H	

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0630-208		3				3			3			3	
0630-241	Materials Science and Metallurgy	2	3	2	4	3	3		3	3	3	3	
0630-241	Materials Science and Metallurgy	2	2	2		2	3		3	3	3	3	
0630-241	Materials Science and Metallurgy	2	2	2		2	3		3	3	3	3	

0630-241	Materials Science and Metallurgy	2	2	3		2	3		3	2	2	3	
0630-259	Introduction to Design	3		4	3	4	3	3	5	4	3	5	
0630-311	Theory of Machines	2		2		3		2				3	
0630-311	Theory of Machines	3		3		3		3		1		1	
0630-322	Engineering Thermodynamics II												
0630-353	Manufacturing Processes	3		3	3	4	4	4	4		4		3
0630-353	Manufacturing Processes	4		4	4	4	3	4	3	4	4		3
0630-361	Project Planning and Management			4	4		5	4	4	4	4		3
0630-424	Air conditioning and Refrigeration	3		4		4		3	4		3	3	3
0630-429	Mechanical Aspects of Desalination Processes	5		4	5	5	4	4	4	5	4	4	
0630-451	Mechanical Design II	3		3	4	3	3	4	3	5		5	
0630-455	Computer-Aided Design	3		3	3	3	4	3		3	4	4	
	Weighted Average	**2.5**	**2.3**	**3.3**	**3.3**	**3.1**	**3.1**	**3.3**	**3.6**	**3.1**	**3**	**3.5**	**3**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0630-208		I started the course with 28 students. Four students withdrew from the course and three were absent most of the time including the final exam. Few students show interest in the subject, the majority were not interested. To quantify their interest in the subject, I offered extra hours for problem solving; only 2-5 out of 23 students attended the problem solving sessions. I also noticed that students from other departments were not happy to take this course in the mechanical engineering department. To my surprise some students repeat this course 2,3,and 4 times and they still don't understand the basic concepts. The failure rate in this course is alarming. We should put an effort to identify the root cause of this problem. As I mention in my last remarks in Spring of 2014/2015, we should add a feedback from the students to our evaluation of this course, I suggested we ask the student to rate their knowledge of various topics of the course at the beginning and at the conclusion of the course.
0630-241	Materials Science and Metallurgy	This ICEF includes two sections, 241/01 &51. Satisfactory performance. Half (13/26) of the students gave-up, with either W or FA. Of the remaining students, I believe only six students satisfactorily achieved the outcomes of the course. Every semester, I am trying my best to get students to improve their motivation and English with little success. Their attendance in class was irregular causing poor performance in tests. Half of

		them were poor in English with the consequence that they were not able to benefit from the textbook.
0630-241	Materials Science and Metallurgy	Overall performance of the students was weak. The weakness was noted in the following: - using basic Calculator for solving Engineering problems; - Basic Chemistry; - Inability to learn logarithmic scale on their own - English Language (speaking, writing and comprehension); - Geometry; - Reading Charts; especially log scales and related charts - Students still lack the basics of engineering sense and deal with the subject by memorizing the concepts without understanding it - Chemical Eng. students should be taking the course earlier and not when at the verge of graduating - Industrial engineering students are less motivated than others - Lab lack depths due to shortage of qualified engineers and technicians in the lab. - Lab Equipment are old and need updating - Small Class was helpfull in improving performance - E-mail was used to contact me in off-hours of the day was helpful
0630-241	Materials Science and Metallurgy	Overall performance of the students was weak. The weakness was noted in the following: - using basic Calculator for solving Engineering problems; - Basic Chemistry; - Inability to learn logarithmic scale on their own - English Language (speaking, writing and comprehension); - Geometry; - Reading Charts; especially log scales and related charts - Students still lack the basics of engineering sense and deal with the subject by memorizing the concepts without understanding it - Chemical Eng. students should be taking the course earlier and not when at the verge of graduating - Industrial engineering students are less motivated than others - Lab lack depths due to shortage of qualified engineers and technicians in the lab. - Lab Equipment are old and need updating - Small Class was helpfull in improving performance - E-mail was used to contact me in off-hours of the day was helpful
0630-241	Materials Science and Metallurgy	In general, the performance of the students was barely satisfactory.
0630-259	Introduction to Design	This class has been taught without a T.A. Many thanks to Dr. Majed Majeed for covering a 1-week tutorial on Technical Report Writing and to Dr. Jasem Baroon for delivering a 1-week tutorial on SolidWorks.
0630-311	Theory of Machines	students were weak in matlab programming.
0630-353	Manufacturing Processes	This section had a few students who were highly motivated in learning and some students who were not, this fact became apparent in the letter grading with a gap in B letter grades (5 in As, 2 in Bs, and 8 in Cs). The students who participated in the factory tour became even more motivated in this course and it led them to perform better. Language and weak math skills remain as the main obstacles to achieve better performance.
0630-353	Manufacturing Processes	In general, the majority of students had very good performance in exams and quizzes. Few students did poor in exams and quizzes. The two assignments focused on long-life learning and communication skills related to manufacturing processes and product making (see assignments report). Two visits were made to local manufacturers (Al-Nisf Switchgear Co. and Al-Qudhaibi Plastics Co.). Also, a visit was made to the local mechanical workshop in the College of Engineering and Petroleum. Finally, the instructor utilized OCS to provide

		lecture notes, on-line quiz, assignments, practice problems, and tens of movies on different manufacturing processes.
0630-361	Project Planning and Management	Most students did well in this class. They seemed to enjoy the information presented backed up with real-life examples. They learned to apply MS Project. Most students worked hard to achieve high grades in the quizzes and exams because many were Senior students in their last semester. Students had several opportunities to experience practical aspects by attending guest speaker seminars, including engineers from the Ministry of Public Works and from the Supreme Council for Planning and Development. A site visit to WorleyParsons was conducted. WP is currently the Project Management Contractor for Kuwait Oil Company. So students were exposed to Project Management in the oil sector.
0630-424	Air conditioning and Refrigeration	I had a small number of students in this course. I enjoyed it so much. with small number I got a change to do a lot and interact with the students. We had two visits to industries where we got to see and learn about their cooling system. My exams were common with Dr. Sorour section where we gave 2 exams this semester. They have preformed good in the class. My recommendation is to keep low number for student for AC course all the time.
0630-429	Mechanical Aspects of Desalination Processes	The class had students who were hardworking and above average.
0630-451	Mechanical Design II	Many students failed to pass the course. These students are very poor in math, physics, and more importantly finding the final answer. Students seek marks without putting in mind the real value of the final answer. I believe the final answer should have high marks, and students should be educated to get the final answer right. Many students don't believe they can or will get the final answer.
0630-455	Computer-Aided Design	This was a very small class. Therefore, no general conclusions can be drawn. Students achieved most of the outcomes. The design outcome, and validation part of problem solving could have been better. Written communication performance, which is measured through the project report was not satisfactory at the initial submission which was much improved after they are given a second chance to re-write the report .

Summer semester

Instructors: **11**

Courses: **13**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-241	Materials Science and Metallurgy	H	L			M	L		L	L	L	L	
0630-311	Theory of Machines	H		M		H		L		M		M	

0630-353	Manufacturing Processes	L		M	M	H		M	L				M
0630-373	Mechanical Engineering Fundamentals Laboratory	H	H		M	L		H				M	
0630-415	Mechanical Vibrations	H		M		H			M	L	L	M	
0630-424	Air conditioning and Refrigeration	M		H		M		L	L		M	M	M
0630-428	Power Plant Engineering	M		H	M	H	M	M	M	M	L	M	
0630-451	Mechanical Design II	H		H	L	H	L	M	L	M		M	
0630-475	Thermal Science Lab. II	H	H	M	M	M	L	H			L	M	L

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k	l
0630-241	Materials Science and Metallurgy	2	2	2		2	3		3	3	3	3	
0630-241	Materials Science and Metallurgy	4	3	3		4	4		3	3	3	3	
0630-311	Theory of Machines	2		2		3		2				3	
0630-353	Manufacturing Processes	4		4	4	4	3	4	3	4	4		3
0630-373	Mechanical Engineering Fundamentals Laboratory	4	4		5	4		4				4	
0630-415	Mechanical Vibrations	3		3		3			3	3	3	2	
0630-424	Air conditioning and Refrigeration	3		3		4		4	4		4	3	3
0630-428	Power Plant Engineering	3		3	3	3	3	2	3	3	3	3	
0630-451	Mechanical Design II	3		3	3	3	3	4	3	4		4	
0630-475	Thermal Science Lab. II	5	5	3	4	4		3				4	
	Weighted Average	**3.3**	**4**	**3**	**3.9**	**3.3**	**3.2**	**3.4**	**3.1**	**3.3**	**3.3**	**3.3**	**3**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0630-241	Materials Science and Metallurgy	Overall performance of the students was weak. Students Do better in the summer due to continuity of lectures. The weakness was noted in the following: - using basic Calculator for solving Engineering problems; - Basic Chemistry; - Inability to learn logarithmic scale on their own - English Language (speaking, writing and comprehension); - Geometry; - Reading Charts; especially log scales and related charts - Students still lack the basics of engineering sense and deal with the subject

		by memorizing the concepts without understanding it - Chemical Eng. students should be taking the course earlier and not when at the verge of graduating - Industrial engineering students are less motivated than others - Lab lack depths due to shortage of qualified engineers and technicians in the lab. - Lab Equipment are old and need updating - Small Class was helpfull in improving performance - E-mail was used to contact me in off-hours of the day was helpful
0630-241	Materials Science and Metallurgy	In general, the performance of the students was good, though the group was very small.
0630-311	Theory of Machines	students were weak in matlab programming.
0630-353	Manufacturing Processes	In general, several students had very good performance in exams and quizzes. Few students did poor in exams and quizzes. The assignment focused on long-life learning and communication skills related to manufacturing processes and product making (see assignment report). A visit was made to the local mechanical workshop in the College of Engineering and Petroleum. Finally, the instructor utilized OCS to provide lecture notes, on-line quiz, assignment, practice problems, and tens of movies on different manufacturing processes.
0630-373	Mechanical Engineering Fundamentals Laboratory	The batch of students this semester were very good.
0630-415	Mechanical Vibrations	- Enforcing attendance policy and actively helping the students through the project steps reduced their habit to see external freelancers and made them more confident to tackle problems. - Students have no interest in learning MATLAB and some of them have never used it before the course. Hopefully ENG307 will solve this issue.
0630-424	Air conditioning and Refrigeration	I had a large class originally and then some dropped and I ended up with 22. It was a good size class. We visited RAC plant and we had lots of time to cover ducting design in details. I felt student were interested in this course when we speak about Kuwait practice in HVAC. I enjoyed teaching this class so much. I got a change to do a lot of interaction with the students. I managed to give 3 exams and students preformed good in general in the class. My recommendation is to keep low number for student for AC course all the time. This is very applied course an students enjoy the application aspect of it.
0630-428	Power Plant Engineering	Students were very good in solving the computer assignments and using EES . They were involved in the class discussion with good questions. Some of the students, however, had difficulty handling HW and assignments in time. Most of the students had difficulty writing their project report and expressing their comments in English for their assignments.
0630-451	Mechanical Design II	The need to reach the final answer is almost missing. Most of the students try to get as many points as possible but never care about the final answer. This is not acceptable for engineering students where final answer is the most important part of any design. Most of the students are not good in programming. They don't feel the need to have good programming skills.

Petroleum Engineering Program

Fall semester

Instructors: **7**

Courses: **20**

R E L E V A N C E

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0650-221	Reservoir Rock Properties	M				M				L		L
0650-323	Phase Behavior of Reservoir Fluids	H			L	H	M		L			M
0650-324	Reservoir Engineering	H				H	L			M		M
0650-324	Reservoir Engineering	H				H	L			M		M
0650-333	PVT Laboratory	L	H		M		M	H				
0650-333	PVT Laboratory	L	H		M		M	H				
0650-333	PVT Laboratory	L	H		M		M	H				
0650-333	PVT Laboratory	L	H		M		M	H				
0650-341	Oil Well Drilling and Completion	M		L		M			M	M		
0650-342	Mud and Cement Laboratory	L	H		M		M	H				
0650-351	Petroleum Geology	L										M
0650-354	Well Logging	M	L	L	L	M	L	L	H	M	M	H
0650-411	Petroleum Production Engineering	H		H	M	H	L	H	M	L	L	H
0650-425	Natural Gas Reservoir Engineering	H				M		H	L	L		H
0650-432	Well Testing	H	H			M	H	M		M		H
0650-435	Production Equipment Design	H		H	M	H		H	L	H		M
0650-437	Numerical Methods in Petroleum Engineering	H				L		M		M		M
0650-449	Petroleum Economics	M			L	M	L	M	H	H	H	H
0650-485	Introduction to Geostatistics											
0650-496	Well Design	H	H	H	H	H	H	H	H	H	H	H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0650-221	Reservoir Rock Properties	2				3				2		3
0650-323	Phase Behavior of Reservoir Fluids	2			2	1	2		2			2
0650-324	Reservoir Engineering	3				3	3			4		3
0650-324	Reservoir Engineering											
0650-333	PVT Laboratory	4	4		4		4	4				5
0650-333	PVT Laboratory	3	3		3		4	3				5
0650-333	PVT Laboratory	4	3		1		4	4				5
0650-333	PVT Laboratory	4	4		1		4	4				5
0650-341	Oil Well Drilling and Completion	4		5		5			4	3		
0650-342	Mud and Cement Laboratory	3	5		5		3	5				
0650-351	Petroleum Geology	4	4	4	4	4		2	3		4	4
0650-354	Well Logging	3	3	3	3	3	3	3	3	3	3	3
0650-411	Petroleum Production Engineering	4		5	4	5	3	5	4	4	3	5
0650-425	Natural Gas Reservoir Engineering	3				3		3	3	3		3
0650-432	Well Testing	4	4			4						
0650-435	Production Equipment Design	4		4	4	4		3	3	4		4
0650-437	Numerical Methods in Petroleum Engineering	3				3		4		4		4
0650-449	Petroleum Economics	3	5	4	3	4	4	5	4	4	4	4
0650-485	Introduction to Geostatistics	3	3	3	3	3	3	3	3	3	3	3
0650-496	Well Design	5	5	5	5	5	4	5	5			5
	Weighted Average	**3.4**	**4**	**4.5**	**3.4**	**3.6**	**3.5**	**4**	**3.8**	**3.6**	**3.5**	**3.7**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0650-221	Reservoir Rock Properties	student are getting low grades in homeworks. text book is not available due to bookshop delay and ordering of books by previous instructors. Students need more exposure to units conversion.
0650-341	Oil Well Drilling and Completion	The course utilizes basic design element. Most student lacks using spreadsheet software which is needed in plotting and conducting basic regression analysis (rheological models).
0650-351	Petroleum Geology	Should introduce students to sedimentary basins in the physical geology talked by Department of GeologyGeology
0650-425	Natural Gas Reservoir Engineering	It has been notice that some students are registered in Natural Gas (PE 425) and have not taken neither Drilling (PE 341) not production (PE 411). Natural Gas deals mostly with gas well testing, calculations of pressure looses in tubing and pipelines, and nodal analysis. Therefore, I recommend that the major sheet and flow chart must be changed not to allow students to take Natural Gas before they pass Drilling at least if not drilling and production.
0650-432	Well Testing	There are no critical remarks most of the students have either taken either Production Engineering or Natural Gas or both, therefore it was easier to build well testing theory and applications.
0650-435	Production Equipment Design	The syllabus of the course should be revised to give more emphasis on upstream production equipment.
0650-449	Petroleum Economics	This course needs understanding of probability and statistics concept. I suggest that Probability (600- 304) course should be a prerequisite to petroleum economics PE 449.

Spring semester

Instructors: **5**

Courses: **13**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0650-324	Reservoir Engineering	H				H	L			M		M
0650-341	Oil Well Drilling and Completion	M		L		M			M	M		
0650-342	Mud and Cement Laboratory	L	H		M		M	H				
0650-342	Mud and Cement Laboratory	L	H		M		M	H				
0650-342	Mud and Cement Laboratory	L	H		M		M	H				
0650-342	Mud and Cement Laboratory	L	H		M		M	H				
0650-351	Petroleum Geology	L										M
0650-425	Natural Gas Reservoir Engineering	H				M		H	L	L		H
0650-432	Well Testing	H	H			M	H	M		M		H
0650-432	Well Testing	H	H			M	H	M		M		H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0650-324	Reservoir Engineering	5	5	4	4	5	4	4	4	4	4	4
0650-341	Oil Well Drilling and Completion	4		5		5			4	3		
0650-342	Mud and Cement Laboratory	3	5		5		3	5				
0650-342	Mud and Cement Laboratory	3	5		5		3	5				
0650-342	Mud and Cement Laboratory	3	5		5		3	5				
0650-342	Mud and Cement Laboratory	3	5		5		3	5				
0650-351	Petroleum Geology											
0650-425	Natural Gas Reservoir Engineering	3				3		4	3	3		3
0650-432	Well Testing	4	4			4	4					4
0650-432	Well Testing	3	3			3	4	3		4		3
	Weighted Average	**3.6**	**4.5**	**5**	**5**	**4.1**	**3.5**	**4.6**	**3.7**	**3.6**	**0**	**3.5**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0650-341	Oil Well Drilling and Completion	The course utilizes basic design element. Most student lacks using spreadsheet software which is needed in plotting and conducting basic regression analysis (rheological models).
0650-425	Natural Gas Reservoir Engineering	Many students have not taken Production (PE 411) before signing for Natural Gas (PE 425). Most students have shown weakness in phase behavior. Natural gas needs good back ground in phase behavior, reservoir engineering, and production in order to be able to integrate material balance calculation, IPR and tubing performance.
0650-432	Well Testing	no critical remarks other than softwares are not available.
0650-432	Well Testing	Students have to be more efficient in using Excell as a simple plotting and computation computer routine. The department should acquire well testing softwares such as PannSystem or Kappa. The use of these softwares are very important in this course since well tests interpretation is becoming automated. The department license for PannSystem software has expired and should be renewed.

Summer semester

Instructors: **3**

Courses: **3**

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0650-324	Reservoir Engineering	H				H	L			M		M
0650-425	Natural Gas Reservoir Engineering	H				M		H	L	L		H
0650-432	Well Testing	H	H			M	H	M		M		H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0650-324	Reservoir Engineering	5	5	4	4	5	4	4	4	4	4	4
0650-425	Natural Gas Reservoir Engineering	2				2		3	3	3		2
0650-432	Well Testing	3	4			3	4	3		4		3
	Weighted Average	**3.3**	**4**	**0**	**0**	**3.6**	**4**	**3**	**3**	**3.8**	**0**	**2.9**

The weighted average for an outcome is calculated by $\frac{\sum(performanœ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0650-425	Natural Gas Reservoir Engineering	I believe we have a serious problem in the fundamental courses of fluid mechanics, phase behavior and rock properties. Many students are not able to calculate the fluid properties. Surprisingly, some have taken (PE 411) engineering production and suppose to be comfortable when it comes to nodal analysis. It is my recommendation that Rock properties (221), fluid mechanics (241), and phase behavior should be screened.
0650-432	Well Testing	Students have to be more efficient in using Excell as a simple plotting and computation computer routine. The department should acquire well testing softwares such as PannSystem or Kappa. The use of these softwares are very important in this course since well tests interpretation is becoming automated. The department license for PannSystem software has expired and should be renewed.

Core Engineering Courses

Fall semester

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0600-200	Computer Programming for Engineers	M										
0600-200	Computer Programming for Engineers	M		L								
0600-200	Computer Programming for Engineers			L								
0600-200	Computer Programming for Engineers	H										
0600-202	Statics	M				M		M	M			
0600-202	Statics	M				M		M	M			
0600-202	Statics	M				M		M	M			
0600-202	Statics	M				M		M	M			
0600-203	Dynamics	H				H						
0600-204	Strength of Materials	H		M		M		L	L			
0600-204	Strength of Materials	H		M		M		L	L			
0600-205	Electrical Engineering Fundamentals	H				H						
0600-205	Electrical Engineering Fundamentals	H				H						
0600-208	Engineering Thermodynamics	H				H	L		M			L
0600-208	Engineering Thermodynamics	H				H	L		M			L
0600-208	Engineering Thermodynamics	H				H	L		M			L
0600-208	Engineering Thermodynamics	H				H	L		M			L
0600-209	Engineering Economy	H				H			H		H	H
0600-209	Engineering Economy	M		M		M			H	M	H	M
0600-209	Engineering Economy	H				H			H		H	H
0600-209	Engineering Economy	H				H			H		H	H
0600-209	Engineering Economy	H				H			H		H	H
0600-209	Engineering Economy	H				H			H		H	H
0600-304	Engineering Probability and Statistics	H				H			M	M	M	M
0600-304	Engineering Probability and Statistics	H				H			M	M	M	M
0600-304	Engineering Probability and Statistics	H				H			M	M	M	M

0600-304	Engineering Probability and Statistics	H	H			H			H		M	M
0600-308	Numerical Methods in Engineering	H				M						H
0600-308	Numerical Methods in Engineering	H				M						H
0600-308	Numerical Methods in Engineering											
0600-308	Numerical Methods in Engineering											
0600-308	Numerical Methods in Engineering	H				M						H
0600-308	Numerical Methods in Engineering	H				M						H
0600-308	Numerical Methods in Engineering	H				M						H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0600-200	Computer Programming for Engineers	4										
0600-200	Computer Programming for Engineers	4										
0600-200	Computer Programming for Engineers	4										
0600-202	Statics	4				3		2	2			
0600-202	Statics	4				3		2	3			
0600-202	Statics	4				3		2	3			
0600-202	Statics	5				4		3	5			
0600-203	Dynamics	3				3						
0600-204	Strength of Materials	3		3		3		3	3			
0600-204	Strength of Materials	4		3		3		3	3			
0600-205	Electrical Engineering Fundamentals	2				2						
0600-205	Electrical Engineering Fundamentals	4				4						
0600-208	Engineering Thermodynamics	5				4	3		4			5
0600-208	Engineering Thermodynamics	4				4	4		4			3
0600-208	Engineering Thermodynamics	2				2	3		3			2
0600-208	Engineering Thermodynamics	3				4	3		3			2
0600-209	Engineering Economy	5				4	4	5	4	5	5	
0600-209	Engineering Economy	5		4		4			5	4	4	5
0600-209	Engineering Economy	4				4			4		4	4
0600-209	Engineering Economy	3				3			3		3	3

0600-209	Engineering Economy	5				4	4	5	4	5	5	
0600-209	Engineering Economy	3				3			3		3	3
0600-304	Engineering Probability and Statistics	4				5			4	4	3	3
0600-304	Engineering Probability and Statistics	4				4			3	3	3	4
0600-304	Engineering Probability and Statistics	4				3			3	3	3	3
0600-304	Engineering Probability and Statistics	4	4			4			3		3	4
0600-308	Numerical Methods in Engineering	3	4	3	4	3	3	5	3	5	3	5
0600-308	Numerical Methods in Engineering	4				4						4
0600-308	Numerical Methods in Engineering	5	1	2	2	5	3	3	3	4	3	4
0600-308	Numerical Methods in Engineering	5	1	2	1	5	3	3	3	4	3	4
0600-308	Numerical Methods in Engineering	3				2						4
0600-308	Numerical Methods in Engineering	4				4						4
0600-308	Numerical Methods in Engineering	4				4						4
	Weighted Average	**3.8**	**4**	**3.3**	**0**	**3.5**	**3.3**	**2.4**	**3.5**	**3.5**	**3.7**	**3.8**

The weighted average for an outcome is calculated by $\frac{\sum(performanæ \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0600-200	Computer Programming for Engineers	For outcome a: This question helps the student to apply the knowledge of mathematics (basic calculus on finding the sum of array elements).
0600-200	Computer Programming for Engineers	Attached : Final Practical Exam
0600-202	Statics	1. As evident from the overall GPA, the performance of the class was 'weak'. 2. Problem sets were not too many. They were limited and not too lengthy to keep the interest level of the students high and prevent them from copying other student's solutions. Moreover, HWs emphasized the desired outcomes of this class (a,e); outcomes that will carry them through, in their later courses. 3. Homeworks were not collected from students to avoid copying, which is unfortunately wide-spread. Rather students were extra sessions outside class and the teacher by himself addresses and solves homework problems jointly with them. 4. It is to be expected from now on, that the coming students might be as weak or even weaker than this class owing to a fall in the general education standard in the High School system. More over, the students are getting more occupied with the smartphones, spending more time time on it and by far over their studies.

0600-202	Statics	(1)- Students have a very weak background in engineering graphics and to-scale sketching. This deficiency seems to be due to 100% use of AutoCad in the Engineering Graphics course. Students should be taught hand drawing and sketching as well. (2)- Student outcome 'h' seems to be irrelevant to this course as this is the very first course in which students are just transitioned from vector algebra and physics to engineering concepts. (3)- Widespread cheating in homework can also be limited by assigning problems with graphical solutions and to-scale diagrams. (4)- Student outcomes are actually evaluated in this course by taking average of student performance in selected problems from quizzes and exams for each outcome. This exercise was done only for those students who passed the course and is attached as a record.
0600-202	Statics	(1)- Students have a very weak background in engineering graphics and to-scale sketching. This deficiency seems to be due to 100% use of AutoCad in the Engineering Graphics course. Students should be taught hand drawing and sketching as well. (2)- Student outcome 'h' seems to be irrelevant to this course as this is the very first course in which students are just transitioned from vector algebra and physics to engineering concepts. (3)- Widespread cheating in homework can also be curbed by assigning problems with graphical solutions and to-scale diagrams. (4)- Student outcomes are actually evaluated in this course by taking average of student performance in selected problems from quizzes and exams for each outcome. This exercise was done only for those students who passed the course.
0600-202	Statics	- The overall assessment of the four outcomes this cycle is above satisfactory. No action required.
0600-203	Dynamics	Not bad group of students. Some of them have the interest to learn. Some of them are senior students from civil engineering department, so they didn’t put the expected effort.
0600-204	Strength of Materials	Class performance was not very satisfactory. This is because students did not solve enough problems. Additional problem solving sessions are needed. However, this requires one additonal tutorial hour per week to be fixed in the student schedule. Class time was 2 to 3:15 pm. This was not suitable since the students were tired after completing may classes.
0600-208	Engineering Thermodynamics	One of the worst ENG208 class I have ever seen since I started teaching this course. Most students were not even taking any notes during classes despite multiple attempts to change this behavior from my side. It seems they don't mind repeating the course just because they can. The 10-time course repetition policy must end or at least change so those students get filtered out in an early stage of their study in the college. My other ENG208 class in the same semester did remarkably better and they were given the same assignments and exams.
0600-208	Engineering Thermodynamics	1) Most of students do not read the textbook. 2) Senior students are still taking the course (late) [eg. Civil]. 3) Many students do not solve the computer assignments. 4) Students asked for English translation during their exams. 5) Students do not participate in the lecture. 6) Many students have freelancer TAs.

0600-209	Engineering Economy	I had a relatively strong group of students who were actively involved in the course. This section was not allocated a Teaching Assistant, so I overcame this deficiency by assigning practical homework problems where students had to seek information from local financial institutions and develop their own economy problems. This allowed the application of many of the principles presented in the text by using real-life examples.
0600-304	Engineering Probability and Statistics	None
0600-304	Engineering Probability and Statistics	Except those students who passed the course with a grade above C, overall class motivation was poor. A major problem is insufficient language skills which hinders understanding of the problems and cause students to imitate. On the other hand, those students who passed had a good understanding of the subject and achieved all course outcomes. There is a need to adopt a different textbook. The current book has some typos and errors, and sometimes confuses students especially in Hypothesis testing. There is also a need to acquire and adopt a software such as Minitab. With the use of Minitab and a more efficient textbook, it is possible to cover more material and include some introduction to regression analysis as well.
0600-304	Engineering Probability and Statistics	None
0600-308	Numerical Methods in Engineering	Having not taught the course for years, I realized that students are incompetent in using calculators and make silly mistakes. They, however, have shown a great interest in the course the topics covered. They all tried their best in attempting some challenging bonus questions I assign during class-time.

Spring semester

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0600-200	Computer Programming for Engineers	M										
0600-200	Computer Programming for Engineers	M										
0600-202	Statics	M				M		M	M			
0600-203	Dynamics	H				H						
0600-203	Dynamics	H				H						
0600-204	Strength of Materials	H		M		M		L	L			
0600-208	Engineering Thermodynamics	H				H	L		M			L
0600-208	Engineering Thermodynamics	H				H	L		M			L

0600-208	Engineering Thermodynamics	H				H	L		M			L
0600-208	Engineering Thermodynamics	H				H	L		M			L
0600-209	Engineering Economy	H							H		M	M
0600-209	Engineering Economy	H							H		M	M
0600-209	Engineering Economy	M		M		M			H	M	H	M
0600-209	Engineering Economy	M							M		M	M
0600-209	Engineering Economy	H				H			H		H	H
0600-209	Engineering Economy	H				H			H		H	H
0600-209	Engineering Economy	H				H			H		H	H
0600-304	Engineering Probability and Statistics	H	H			H			M		M	H
0600-304	Engineering Probability and Statistics	H				H			M	M	M	M
0600-304	Engineering Probability and Statistics	H				L			L		L	
0600-304	Engineering Probability and Statistics	M				M						
0600-304	Engineering Probability and Statistics	H				H			M	M	M	M
0600-304	Engineering Probability and Statistics	M				M						
0600-304	Engineering Probability and Statistics	M				M						
0600-308	Numerical Methods in Engineering	H				M						H
0600-308	Numerical Methods in Engineering	H				H			H			H
0600-308	Numerical Methods in Engineering	H				M						H
0600-308	Numerical Methods in Engineering	H				M						H

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0600-200	Computer Programming for Engineers	3										
0600-200	Computer Programming for Engineers	3										
0600-202	Statics	3				3		3	3			
0600-203	Dynamics	2				2						
0600-203	Dynamics	2				3						
0600-204	Strength of Materials	3		2		2		2	3			
0600-208	Engineering Thermodynamics	3				4	3		3			2

0600-208	Engineering Thermodynamics	2				2	3		2			2
0600-208	Engineering Thermodynamics	4				4	4		5			3
0600-208	Engineering Thermodynamics	4				4	4		5			3
0600-209	Engineering Economy	5							5		4	4
0600-209	Engineering Economy	5							5		4	4
0600-209	Engineering Economy	3		2		3	3	3	2	3	3	4
0600-209	Engineering Economy	3				4			3		4	4
0600-209	Engineering Economy	3				3			3		3	3
0600-209	Engineering Economy	3				3			3		3	3
0600-209	Engineering Economy	4				4			4		4	4
0600-304	Engineering Probability and Statistics	3	4			4			3		5	4
0600-304	Engineering Probability and Statistics	5				5			5	4	4	5
0600-304	Engineering Probability and Statistics	4				4			3		3	
0600-304	Engineering Probability and Statistics	4				5						
0600-304	Engineering Probability and Statistics	4				4			3	3	4	3
0600-304	Engineering Probability and Statistics	2				3						
0600-304	Engineering Probability and Statistics	2				3						
0600-308	Numerical Methods in Engineering	4				3						4
0600-308	Numerical Methods in Engineering	5				4			3			5
0600-308	Numerical Methods in Engineering	5	1	2	2	5	3	3	3	4	3	4
0600-308	Numerical Methods in Engineering	4				4						3
	Weighted Average	**3.5**	**4**	**2**	**0**	**3.5**	**3.5**	**2.7**	**3.5**	**3.3**	**3.7**	**3.7**

The weighted average for an outcome is calculated by $\frac{\sum(performance \times relevance)}{\sum relevance}$

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0600-200	Computer Programming for Engineers	1
0600-204	Strength of Materials	Scheduled tutorial by TA every week must be done for all core courses especially (statics, strength of materials, ..). Scheduled Tutorials must be arranged and considered among the duties of the teaching assistants. The students do not have

		desire to study. They are looking for easy pass with high grade from the course without doing enough effort. Most students in the course do not know the basic principles of the pre-requisite course (ENG 202- statics). I do not know how these students passed the statics course.
0600-208	Engineering Thermodynamics	
0600-208	Engineering Thermodynamics	Overall, the students were of the range from average to weak. They need to read their textbooks, and build up their basics.
0600-209	Engineering Economy	I have taught two sections of Engineering Economy this semester (6A and 6AD) in the same class. I am reporting the results of the two sections even though they had completely different results. Section 6A had 15 students: 2 F, 2 FA, 3 W, 2 D and the grades ranges between B to D. This is due to their irregular class attendance and poor studying skills causing poor performance in tests and quizzes. However, the other section (6AD) performance is much better and the average was B- where most of the outcomes were achieved.
0600-209	Engineering Economy	I have taught two sections of Engineering Economy this semester (6A and 6AD) in the same class. I am reporting the results of the two sections even though they had completely different results. Section 6A had 15 students: 2 F, 2 FA, 3 W, 2 D and the grades ranges between B to D. This is due to their irregular class attendance and poor studying skills causing poor performance in tests and quizzes. However, the other section (6AD) performance is much better and the average was B- where most of the outcomes were achieved.
0600-304	Engineering Probability and Statistics	Excellent group of students.
0600-304	Engineering Probability and Statistics	There should be a practical application to the usage of statistical software for this course, i.e. a computer tutorial labs in which students should have on hand experience on the application of basic concepts of this course.
0600-304	Engineering Probability and Statistics	Students are good in using specialized software and engineering tools related to the course, i.e., programmable hand-held calculator and statistics software (MINITAB); however, most of them have problems in English communication especially reading comprehension, which is very essential in this course to interpret the problems and formulate the solution.
0600-304	Engineering Probability and Statistics	Students are good in using specialized software and engineering tools related to the course, i.e., programmable hand-held calculator and statistics software (MINITAB); however, most of them have problems in English communication especially reading comprehension, which is very essential in this course to interpret the problems and formulate the solution.
0600-308	Numerical Methods in Engineering	We suggest that students take Matlab before taking the course.

Summer semester

RELEVANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0600-202	Statics	M				M		M	M			
0600-203	Dynamics	H				H						
0600-209	Engineering Economy	H				H			H		H	H
0600-304	Engineering Probability and Statistics	H				H			M	M	M	M
0600-304	Engineering Probability and Statistics	H				H			M	M	M	M

PERFORMANCE

Course Number	Course Name	a	b	c	d	e	f	g	h	i	j	k
0600-202	Statics	3				3		3	3			
0600-203	Dynamics	2				2						
0600-209	Engineering Economy	2							2			
0600-304	Engineering Probability and Statistics	5				5			4	3	4	5
0600-304	Engineering Probability and Statistics	4				3			3	3	3	5
	Weighted Average	**3.2**	**0**	**0**	**0**	**3.3**	**0**	**3**	**2.9**	**3**	**3.5**	**5**

Remarks and Suggestions

Course Number	Course Name	Remarks and Suggestions
0600-304	Engineering Probability and Statistics	The textbook need to be revised.
0600-304	Engineering Probability and Statistics	None

Instructor Class Evaluation Form

Kuwait University

College of Engineering & Petroleum

Instructor Class Evaluation Form

Course Number and Title:

Instructor:

Semester:

Number of times that you taught this course at KU:

EVALUATION METHOD	**GRADING SYSTEM**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
TOTAL	*100 %*

	GRADE DISTRIBUTION													
	A	A–	B+	B	B–	C+	C	C–	D+	D	F *or* FA	Sum	I	W
Weight (W)	4.0	3.6	3.3	3.0	2.6	2.3	2.0	1.6	1.3	1.0	0.0	–	–	–
No. of Students (N)												**ΣN =**		
N*W												**Σ(W*N) =**		

CLASS GPA = Σ (W* N) / Σ N = _____

CLASS GPA without (F or FA) = _____

Program Outcomes	**Relevance**	**Performance**		

	Not Relevant	Somewhat	Moderately	High Relevant	Very Weak	Weak	Satisfactory	Very Good	Excellent	**Explanation Activities and Practices**	**Interpretation & Evidence**
1. Apply mathematics, science, and engineering	☐	☐	☐	☐	☐	☐	☐	☐	☐		
2. Design and conduct experiments and analyze and interpret data	☐	☐	☐	☐	☐	☐	☐	☐	☐		
3. Design a system, a component or a process	☐	☐	☐	☐	☐	☐	☐	☐	☐		
4. Function as an effective team member	☐	☐	☐	☐	☐	☐	☐	☐	☐		
5. Identify, formulate, and solve engineering problems	☐	☐	☐	☐	☐	☐	☐	☐	☐		
6. Understand professional & ethical responsibilities	☐	☐	☐	☐	☐	☐	☐	☐	☐		
7. Communicate effectively	☐	☐	☐	☐	☐	☐	☐	☐	☐		
8. Understand the impact of engineering solutions	☐	☐	☐	☐	☐	☐	☐	☐	☐		
9. Recognize the need for life-long learning	☐	☐	☐	☐	☐	☐	☐	☐	☐		
10. Know the contemporary issues	☐	☐	☐	☐	☐	☐	☐	☐	☐		
11. Use the techniques, skills and modern engineering tools for engineering practice	☐	☐	☐	☐	☐	☐	☐	☐	☐		
12. An ability to assume responsibility at the entry level in the areas of specialization that are important to Kuwait and the region	☐	☐	☐	☐	☐	☐	☐	☐	☐		

Remarks and Suggestions:

_____

_____

_____

Instructions for Course Assessment

Kuwait University
College of Engineering and petroleum
Office of Academic Assessment

Instructions for Course Assessment

Introduction

All instructors at the college should carry out course assessment and submit a course assessment file to the departmental assessment coordinators at the end of the term. In the following some guidelines on how to prepare an assessment file are given:

Objectives of Course Assessment

- To obtain direct measurements of student performance
- To assure that students are acquiring the required outcomes
- To assure that learning experiences are consistent with the outcomes
- To establish the required feedback loops

The items to be included in the course assessment file

- A hardcopy of completed instructor class evaluation form (ICEF) submitted online.
- A copy of the list of final grades
- Course syllabus including the following information as a minimum
  - Instructor contact details and office hours
  - Textbook and references
  - Tentative course outline
  - Dates of mid-term and final exams
  - Grading policy
- A list of course outcomes and their relationship with the college or program outcomes (Course description and classification)
- A copy of final exam and major term project(s)
- Summary data and analysis from various assessment tools (e.g., oral and written report evaluation, teamwork, self evaluations)
- Samples of student works supporting the ICEF (e.g., key assignments, homework, exams, project reports, essays etc.)
- Any other supporting material demonstrating student achievement (e.g., sample class portfolios, video recordings, etc.)

Instructor Class Evaluation Form

The main assessment tool used for the course assessment is the Instructor Class Evaluation Form. This form reports the grade distribution as well as the assessment of program student outcomes served by the course. First, the instructors are asked to indicate the level of importance of each outcome as it relates to the course. Normally, this rating should have been already assigned by the Teaching Area Group using the following guidelines:

H (highly relevant (3)): Demonstrating this outcome is critical for the students to perform successfully; or the students may benefit significantly from this course toward the outcome (formal instruction, practice, assessment).

M (Moderately relevant (2)): Demonstrating this outcome has considerable impact on the overall performance of the student, or the students may benefit moderately from this course toward the outcome (informal instruction, practice, and assessment).

L (Somewhat relevant (1)): Demonstrating this outcome has only minor impact on the overall performance of the student. However, there are opportunities to observe this outcome (practice and assessment).

The instructors then evaluate student performance relative to what is normally expected from them at their level according to the following scale:

- Students' performance was very weak (1)
- Students' performance was weak (2)
- Students' performance was satisfactory (3)
- Students' performance very good (4)
- Students' performance excellent (5)

The best method of evaluation of the student achievement is to assess individual students relative to the outcomes. Then, an average rating can be obtained for the whole class. The rating should be justified by referring to specific student works or assessment results.

The instructors are also asked to provide feedback on the course content and outcomes, instructional and assessment methods. They also comment on the achievement of program outcomes and indicate any deficiencies observed.

Assessment Methods

The assessment methods include but not limited to the following:

- Performance Appraisals (e.g., written and oral presentations, teamwork, lab experiments, artwork, etc.)
- Surveys (Online tools, or custom designed forms seeking student perception of learning gains, or their opinions on certain aspects)
- Traditional assessment methods (Exams, homework, project, etc.)

Assessment Tools

The following is a list of available assessment instruments to be used in course assessment. Instructors are encouraged to use standard tools as much as possible to facilitate analysis. However, these tools can be modified to suit a specific course, or additional tools can be adopted.

- Written report evaluation form or rubric
- Oral presentation evaluation form or rubric
- Lab report evaluation form or rubric
- Teamwork evaluation form or rubric
- Term Project evaluation form or rubric
- Final Exam evaluation form or rubric

The instructors are encouraged to submit summary statistical data in addition to the copies of the completed forms.

APPENDIX C:

Exit Survey Report for the Academic year 2016-2017

November 2017

Introduction:

This report presents the College of Engineering and Petroleum Exit Survey Results for the Academic year 2016-2017. The survey was prepared, conducted and analyzed by the Office of Academic Assessment (OAA).

The exit survey form was provided to students online. Completing the exit survey is considered as a requirement for graduation. After submitting the survey, each student prints a confirmation page, which is given to his/her department to complete the graduation process. Most departments cooperate and this greatly improves the participation rates. Also, graduating students presenting their capstone projects on engineering design day must provide proof of completing the survey to the Engineering Training and of Alumni Center (ETAC).

College Mission & Vision Statements

Mission

- To provide students with quality engineering education
- To advance and disseminate knowledge
- To lead the society in enhancing its welfare

Vision

To become the leading College of engineering in the Middle East recognized for its outstanding education, research and outreach programs and for the quality, character and integrity of its graduates.

College Educational Objectives (Goals)

- To create a dynamic academic environment where faculty, students, and staff cooperate in preparing individuals for successful careers.
- To keep pace with scientific and technological progress in engineering, and to contribute to its advancement to address the immediate and long-term needs of the society.
- To provide outreach programs that meet continuing education and training needs of the country and the region.

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

The exit survey form contains four parts covering different aspects that the College of Engineering and Petroleum consider important for students to assess. The first part is about the assessment of engineering student skills where the first 15 questions are common among all departments, and the rest are customized by each program. The second part is about the assessment of the learning environment. The third part covers the assessment of support services. The fourth part is a general assessment that includes three open ended questions.

A total of **383** students participated in the exit survey during the academic year 2016-2017. Table 1 shows the number of students participated in the survey according to program and gender.

Table 1 Exit survey participation breakdown

Program	Total Responses	Gender	Response	Percentage
CHEMICAL	38	Male	23	61%
		Female	15	39%
CIVIL	79	Male	13	16%
		Female	65	82%
COMPUTER	46	Male	16	35%
		Female	30	65%
ELECTRICAL	121	Male	32	26%
		Female	81	67%
IMS	34	Male	7	21%
		Female	27	79%
MECHANICAL	28	Male	17	61%
		Female	7	25%
PETROLEUM	37	Male	15	41%
		Female	22	59%
TOTAL	383	Male	123	32%
		Female	247	64%

Survey Results:

Table 2 shows students' intentions for their future plans. Most of the students (68%) expect to work for the government, 53% for the private sector, 26% of the students are planning or at least thinking of joining a graduate program, and 30% start their own business.

Table 3 shows students' feedback for the first group of questions in the exit survey, which is about the students' assessment for the outcomes acquired at Kuwait University. Figure 1 shows the average rating and satisfaction index for this group of questions. The table also shows the average rating and the satisfaction index out of 5 and as percentage for each item which is the percentage of the students who evaluated themselves as well prepared and very well prepared. An index value lower than 50 % may be considered to indicate dissatisfaction. As it can be seen the students are satisfied by the outcomes acquired at the college and university.

Table 4 shows students' feedback for the second group of questions about their level of satisfaction for the learning Environment at Kuwait University. Figures 2 and 3 show the average rating and satisfaction index for this group of questions. Looking at the results, we can see that students are generally not satisfied with:

- Quality of instruction and support for learning provided by the faculty members in: science, computers.
- Quality of the facilities: classroom, science laboratories, - engineering laboratories, computing facilities

Table 5 shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. Figure 4 shows the average rating and satisfaction index for this group of questions. The table also shows the amount of interaction they had with each item. As it can be seen the students are generally not satisfied with:

- Other Services: food services, parking, recreation and athletics.

Tables 6-8 show the differences among departments for each of the three groups of questions mentioned above. Figures 5-7 show the average rating for each of the three groups of questions.

Table 2 Students Future Plans

Plans	N	%
Intend to work in the government sector.	**259**	**68%**
Intend to work in the private sector.	**202**	**53%**
Intend to go to graduate school.	**98**	**26%**
Intend to start my own business	**114**	**30%**
Intend to do other things	**20**	**5%**
Studying Master		
Studying Master		

Petroleum sector
continue master
internship
take master degree
Get a master degree
whatever the future may show that piques my interest
to live healthy life
Study master
Study master
Projects

Table 3 Assessment of the outcomes acquired at Kuwait University – Engineering programs

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	136	130	95	6	1	15	4.1	**3.6**
		36%	34%	25%	2%	0%	4%	82%	**72%**
2	Design and conduct experiments, as well as to analyze and interpret data.	99	144	103	21	1	15	3.9	**3.3**
		26%	38%	27%	5%	0%	4%	78%	**66%**
3	Design a system, component, or process to meet desired needs.	102	144	103	18	1	15	3.9	**3.3**
		27%	38%	27%	5%	0%	4%	78%	**66%**
4	Function effectively in teams.	146	120	86	11	5	15	4.1	**3.6**
		38%	31%	22%	3%	1%	4%	82%	**72%**
5	Identify, formulate, and solve engineering problems.	120	137	94	16	1	15	4	**3.5**
		31%	36%	25%	4%	0%	4%	80%	**70%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	149	115	87	14	2	16	4.1	**3.6**
		39%	30%	23%	4%	1%	4%	82%	**72%**
7	Communicate effectively (written reports).	126	135	80	24	2	16	4	**3.6**
		33%	35%	21%	6%	1%	4%	80%	**72%**
8	Communicate effectively (oral presentations).	113	127	101	24	4	14	3.9	**3.3**

		30%	33%	26%	6%	1%	4%	78%	**66%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	134	125	85	20	2	17	4	**3.5**
		35%	33%	22%	5%	1%	4%	80%	**70%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self-learning, membership in professional societies).	110	127	104	24	3	15	3.9	**3.2**
		29%	33%	27%	6%	1%	4%	78%	**64%**
11	Be aware of contemporary issues (e.g. economics of engineering, environmental issues, etc.)	107	115	114	27	3	17	3.8	**3**
		28%	30%	30%	7%	1%	4%	76%	**60%**
12	Ability to use computing technology in communications.	116	126	106	16	2	17	3.9	**3.3**
		30%	33%	28%	4%	1%	4%	78%	**66%**
13	Ability to use computing technology in engineering analysis/design.	115	127	104	20	2	15	3.9	**3.3**
		30%	33%	27%	5%	1%	4%	78%	**66%**
14	Ability to use state of the art techniques, and tools in engineering practice.	84	127	115	34	3	20	3.7	**2.9**
		22%	33%	30%	9%	1%	5%	74%	**58%**
15	Apply the knowledge of probability and statistics.	82	125	120	34	5	17	3.7	**2.8**
		21%	33%	31%	9%	1%	4%	74%	**56%**

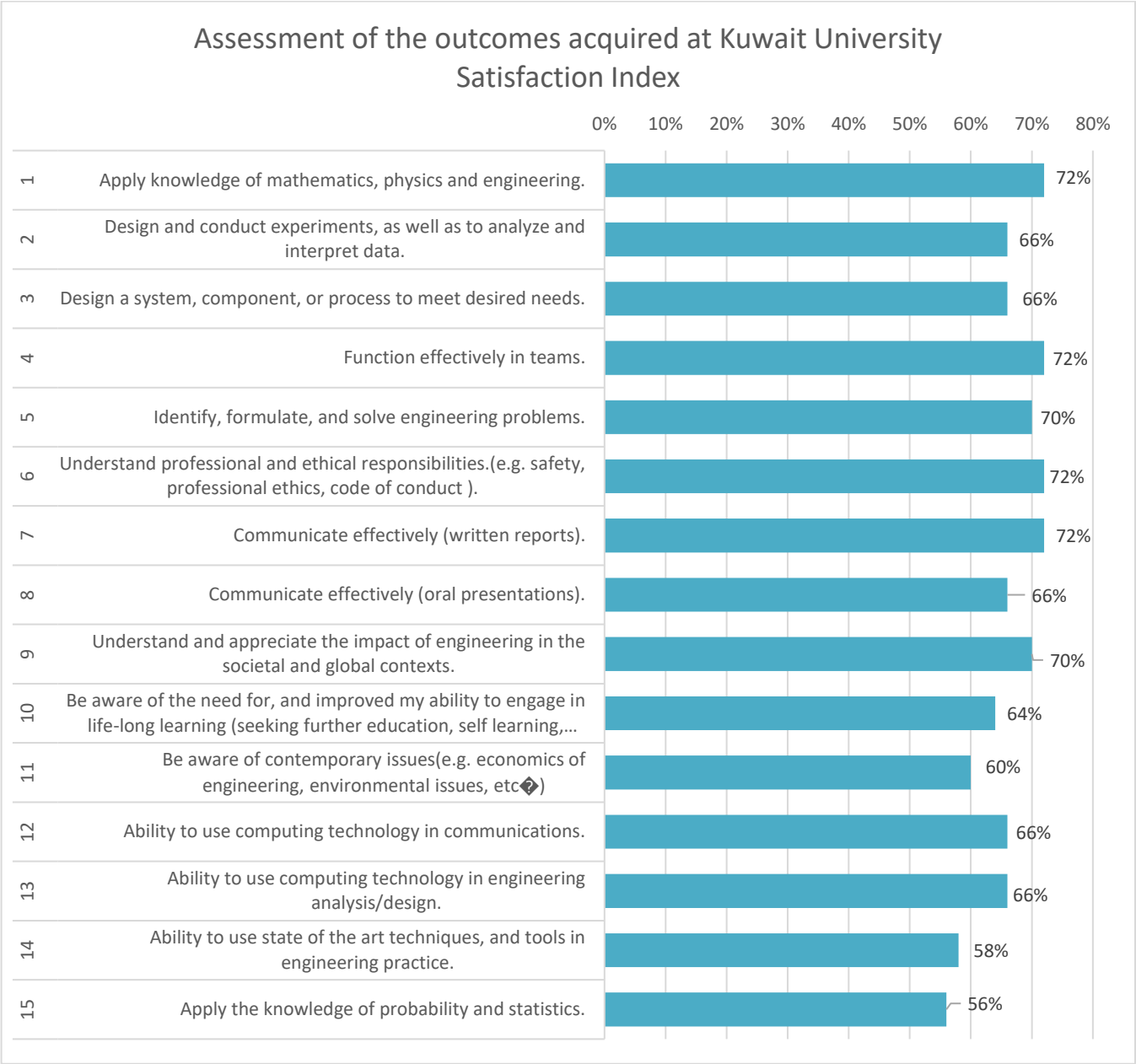

Figure 1 Assessment of the outcomes acquired at Kuwait University

Table 4 Level of satisfaction for the learning Environment at Kuwait University - Engineering programs

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	90	75	120	44	37	17	3.4	**2.3**
		23%	20%	31%	11%	10%	4%	68%	**46%**
2	- Computers (Programming and usage of software packages)	70	101	130	50	17	15	3.4	**2.3**
		18%	26%	34%	13%	4%	4%	68%	**46%**
3	- Humanities and Social sciences	80	101	123	41	13	25	3.5	**2.5**
		21%	26%	32%	11%	3%	7%	70%	**50%**
4	- General Engineering	99	127	107	26	8	16	3.8	**3.1**
		26%	33%	28%	7%	2%	4%	76%	**62%**
5	- Engineering within major	132	108	89	27	9	18	3.9	**3.3**
		34%	28%	23%	7%	2%	5%	78%	**66%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		91	108	124	33	11	16	3.6	**2.7**
		24%	28%	32%	9%	3%	4%	72%	**54%**
C. Quality of advice by the staff with respect to:									
7	- Academic planning	88	112	121	30	8	24	3.7	**2.8**
		23%	29%	32%	8%	2%	6%	74%	**56%**
8	- Career planning	81	103	117	39	12	31	3.6	**2.6**
		21%	27%	31%	10%	3%	8%	72%	**52%**
D. Equity of treatment by:									
9	- Academic administrators	83	108	127	32	10	23	3.6	**2.7**
		22%	28%	33%	8%	3%	6%	72%	**54%**
10	- Faculty	90	112	110	40	14	17	3.6	**2.8**
		23%	29%	29%	10%	4%	4%	72%	**56%**
11	- Teaching assistants and engineers	103	102	119	33	10	16	3.7	**2.8**

		27%	27%	31%	9%	3%	4%	74%	**56%**
12	- Fellow students	92	104	131	33	5	18	3.7	**2.7**
		24%	27%	34%	9%	1%	5%	74%	**54%**
E. Quality of the facilities:									
13	- Classrooms	57	65	113	69	62	17	3	**1.7**
		15%	17%	30%	18%	16%	4%	60%	**34%**
14	- Science laboratories	54	75	116	71	49	18	3	**1.8**
		14%	20%	30%	19%	13%	5%	60%	**36%**
15	- Engineering Laboratories	59	76	119	63	49	17	3.1	**1.8**
		15%	20%	31%	16%	13%	4%	62%	**36%**
16	- Computing facilities	58	79	104	82	43	17	3.1	**1.9**
		15%	21%	27%	21%	11%	4%	62%	**38%**
17	- Libraries	79	102	124	34	25	19	3.5	**2.5**
		21%	27%	32%	9%	7%	5%	70%	**50%**

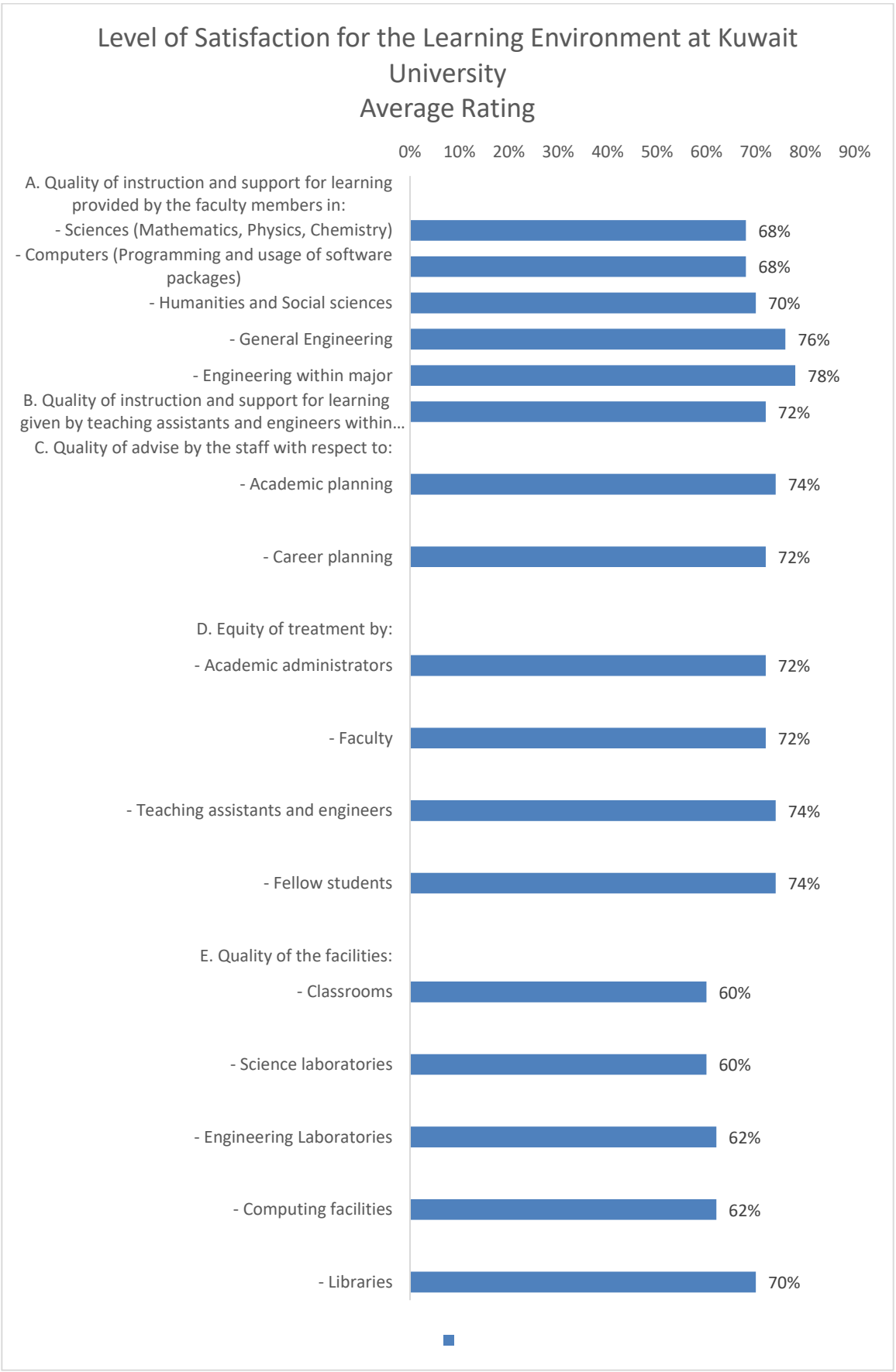

Figure 2 Level of satisfaction for the learning Environment at Kuwait University

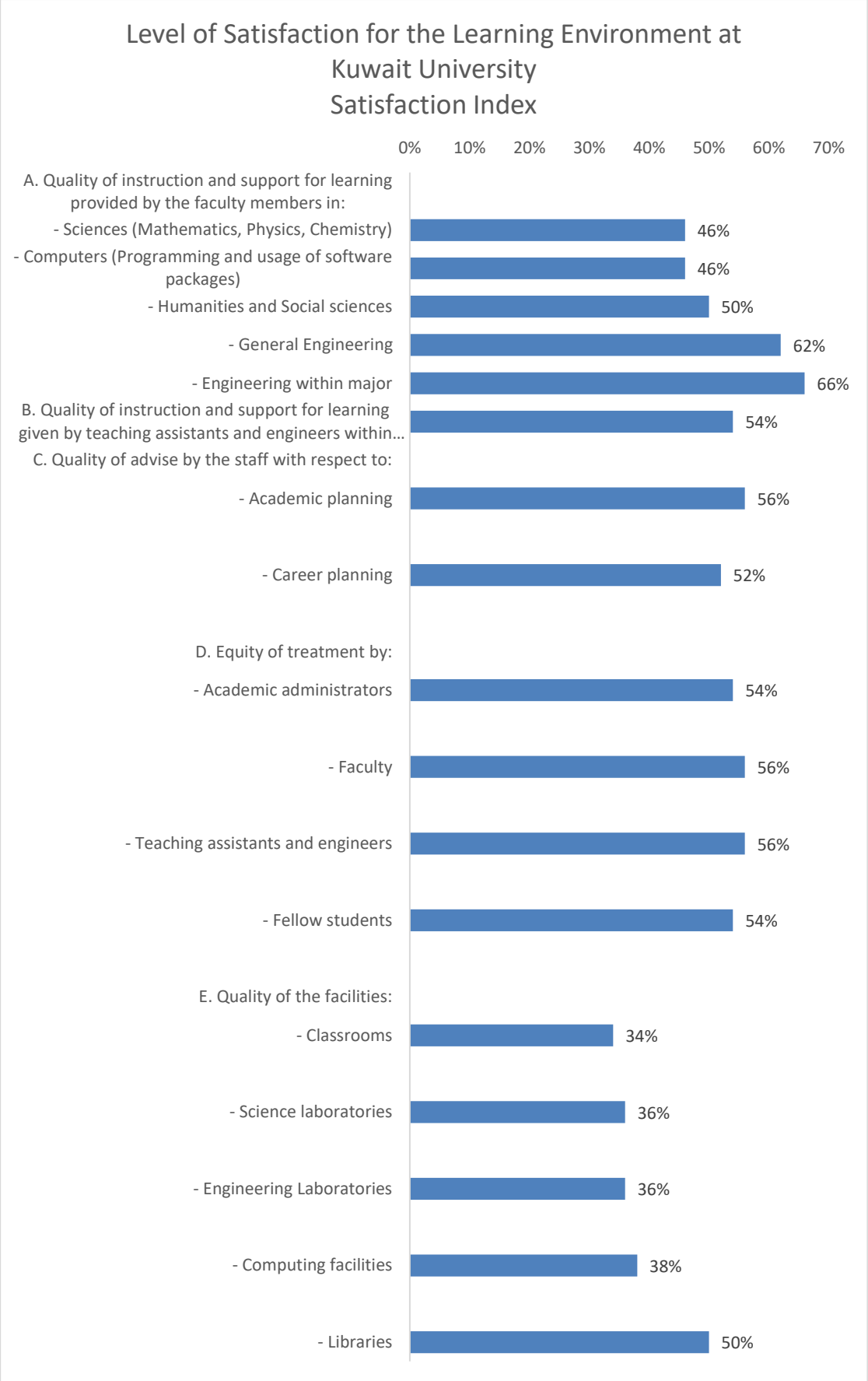

Figure 3 Level of satisfaction for the learning Environment at Kuwait University

Table 5 Assessment of the Support Services at Kuwait University – Engineering programs

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	68	143	78	39	23	32	3.6	**3**	146	181	43
		18%	37%	20%	10%	6%	8%	72%	**60%**	38%	47%	11%
2	Training office	82	139	84	14	7	57	3.8	**3.4**	102	203	65
		21%	36%	22%	4%	2%	15%	76%	**68%**	27%	53%	17%
3	Libraries	79	152	78	33	7	34	3.8	**3.3**	123	197	50
		21%	40%	20%	9%	2%	9%	76%	**66%**	32%	51%	13%
4	Bookstores	68	146	88	37	14	30	3.6	**3**	126	188	56
		18%	38%	23%	10%	4%	8%	72%	**60%**	33%	49%	15%
B. Administrative Offices:												
5	Students affairs office in your department	72	148	85	30	9	39	3.7	**3.2**	117	196	57
		19%	39%	22%	8%	2%	10%	74%	**64%**	31%	51%	15%
6	Administrative offices in the college	71	148	81	35	11	37	3.7	**3.2**	97	215	58
		19%	39%	21%	9%	3%	10%	74%	**64%**	25%	56%	15%
C. Other Services:												
7	Health services	65	124	79	34	19	62	3.6	**2.9**	94	186	90
		17%	32%	21%	9%	5%	16%	72%	**58%**	25%	49%	23%
8	Food services	51	115	108	41	39	29	3.3	**2.3**	145	188	37
		13%	30%	28%	11%	10%	8%	66%	**46%**	38%	49%	10%
9	Parking	29	61	32	65	159	37	2.2	**1.3**	146	161	63
		8%	16%	8%	17%	42%	10%	44%	**26%**	38%	42%	16%
10	Recreation and athletics	52	85	71	51	51	73	3.1	**2.2**	98	180	92
		14%	22%	19%	13%	13%	19%	62%	**44%**	26%	47%	24%
11	Others	42	67	40	29	24	181	3.4	**2.7**	86	141	72
		11%	17%	10%	8%	6%	47%	68%	**54%**	22%	37%	19%

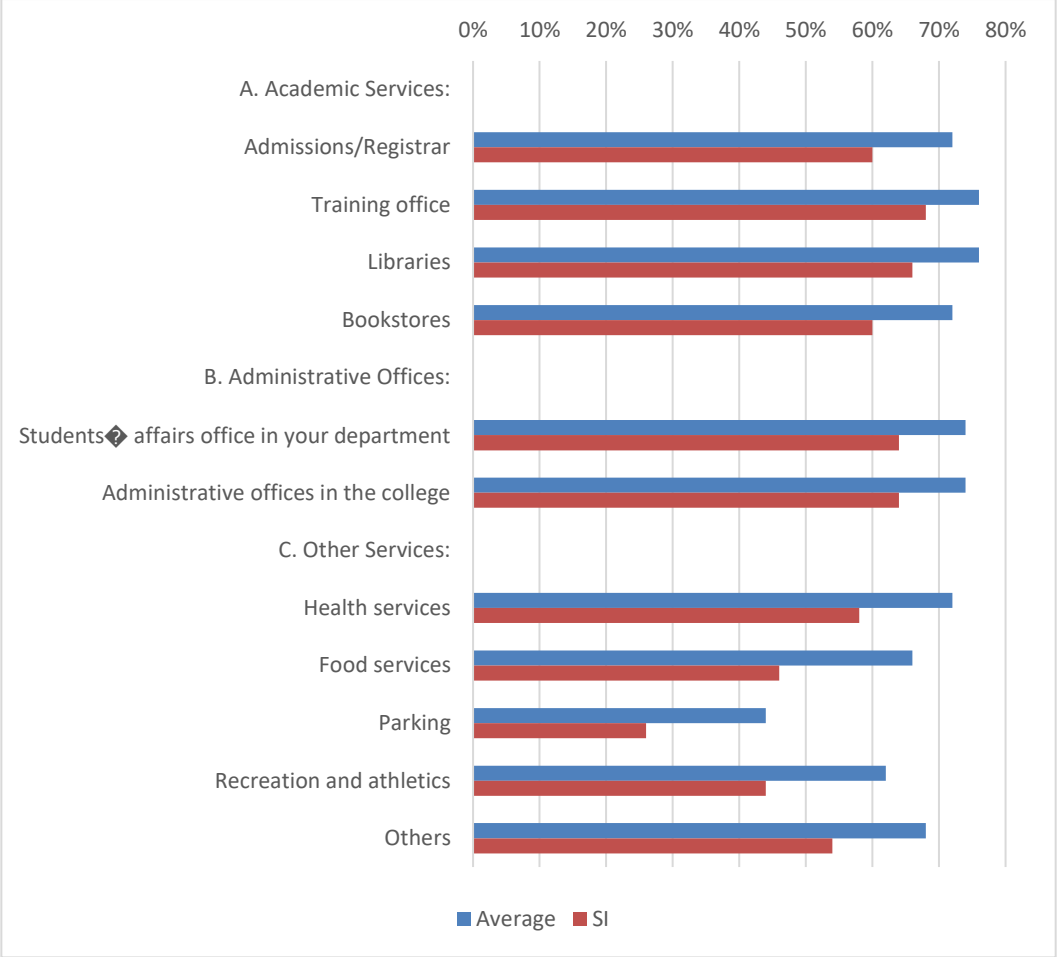

Figure 4 Assessment of the Support Services at Kuwait University

Table 6 Differences among engineering departments – outcomes

#	Outcomes		chemical	civil	computer	electrical	ims	mechanical	petroleum	College
1	Apply knowledge of mathematics, physics and engineering.	Average Rating	88%	82%	72%	82%	82%	80%	84%	82%
		Satisfaction Index	86%	70%	52%	76%	74%	70%	76%	72%
2	Design and conduct experiments, as well as to analyze and interpret data.	Average Rating	84%	78%	70%	78%	76%	70%	80%	78%
		Satisfaction Index	76%	70%	48%	68%	70%	42%	72%	66%
3	Design a system, component, or process to meet desired needs.	Average Rating	82%	78%	72%	78%	78%	78%	80%	78%
		Satisfaction Index	74%	66%	58%	66%	70%	76%	64%	66%
4	Function effectively in teams.	Average Rating	88%	80%	80%	80%	80%	80%	80%	82%
		Satisfaction Index	86%	72%	72%	72%	62%	76%	70%	72%
5	Identify, formulate, and solve engineering problems.	Average Rating	84%	78%	74%	80%	80%	78%	86%	80%
		Satisfaction Index	78%	66%	54%	74%	66%	66%	82%	70%
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	Average Rating	84%	82%	82%	78%	82%	80%	88%	82%
		Satisfaction Index	76%	74%	66%	68%	80%	58%	84%	72%
7	Communicate effectively (written reports).	Average Rating	86%	80%	78%	78%	84%	74%	82%	80%
		Satisfaction Index	82%	72%	72%	70%	74%	54%	72%	72%
8	Communicate effectively (oral presentations).	Average Rating	82%	76%	74%	76%	82%	76%	78%	78%
		Satisfaction Index	76%	64%	52%	64%	82%	62%	60%	66%
9	Understand and appreciate the impact of engineering in the	Average Rating	84%	80%	78%	80%	78%	78%	86%	80%
		Satisfaction Index	76%	66%	70%	72%	58%	70%	84%	70%

	societal and global contexts.									
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	Average Rating	82%	78%	70%	78%	74%	78%	82%	78%
		Satisfaction Index	76%	70%	46%	64%	50%	70%	76%	64%
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	Average Rating	86%	78%	64%	76%	74%	76%	84%	76%
		Satisfaction Index	78%	66%	26%	62%	48%	66%	76%	60%
12	Ability to use computing technology in communications.	Average Rating	84%	76%	78%	78%	76%	78%	84%	78%
		Satisfaction Index	78%	62%	56%	68%	52%	58%	84%	66%
13	Ability to use computing technology in engineering analysis/design.	Average Rating	84%	74%	74%	78%	78%	78%	86%	78%
		Satisfaction Index	78%	58%	56%	70%	56%	58%	82%	66%
14	Ability to use state of the art techniques, and tools in engineering practice.	Average Rating	82%	70%	66%	74%	76%	72%	82%	74%
		Satisfaction Index	76%	52%	40%	62%	48%	52%	76%	58%
15	Apply the knowledge of probability and statistics.	Average Rating	82%	74%	64%	72%	82%	64%	80%	74%
		Satisfaction Index	68%	58%	32%	54%	82%	34%	68%	56%

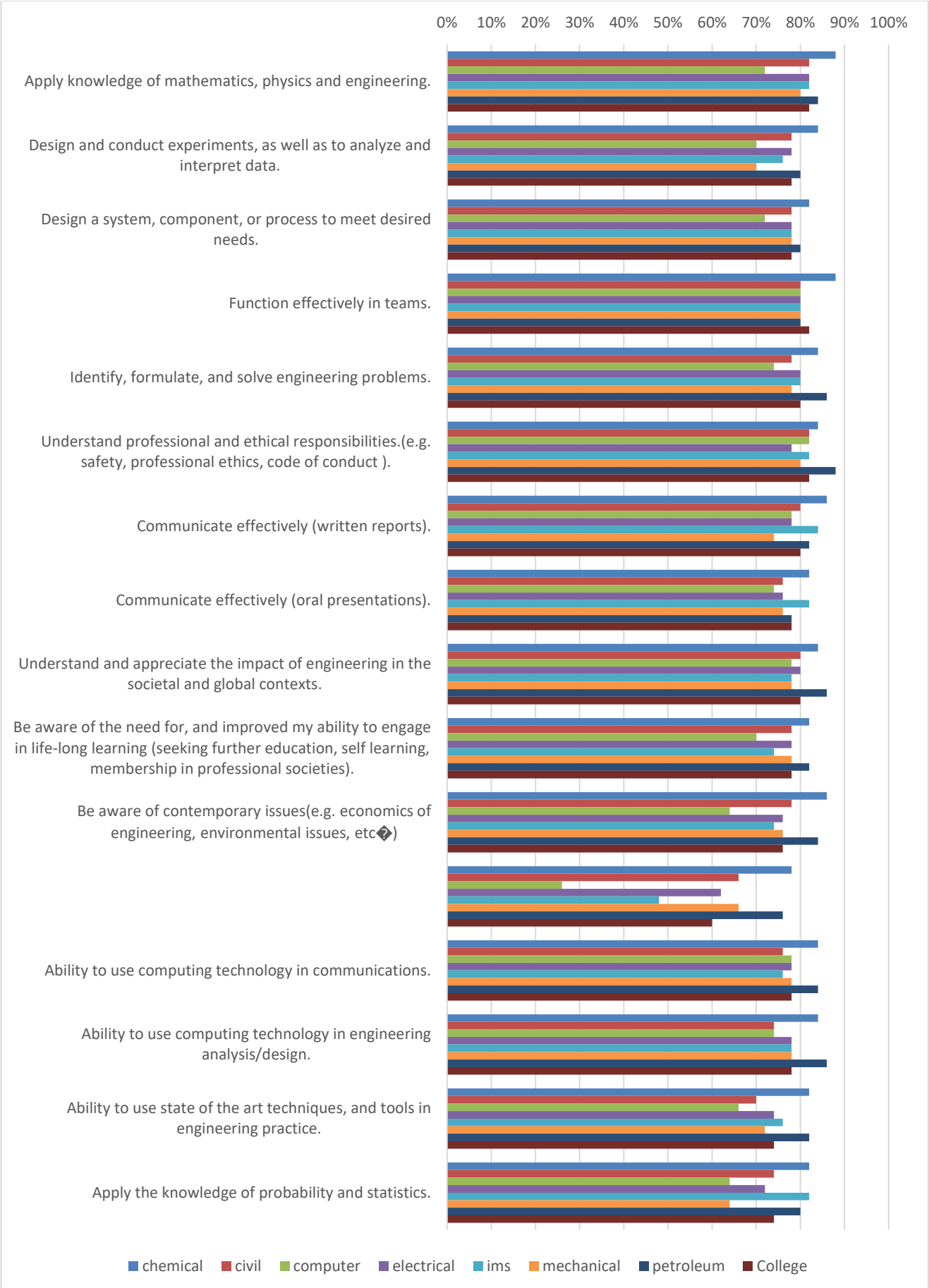

Figure 5 Differences among engineering departments – outcomes

Table 7 Differences among departments – Learning environment

#	Outcomes		chemical	civil	computer	electrical	ims	mechanical	petroleum	College
A. Quality of instruction and support for learning provided by the faculty members in:										
1	- Sciences (Mathematics, Physics, Chemistry)	Average Rating	78%	70%	46%	72%	68%	56%	70%	68%
		Satisfaction Index	64%	56%	8%	52%	38%	30%	46%	46%
2	- Computers (Programming and usage of software packages)	Average Rating	72%	64%	70%	70%	68%	54%	76%	68%
		Satisfaction Index	54%	44%	50%	48%	38%	26%	60%	46%
3	- Humanities and Social sciences	Average Rating	76%	72%	60%	74%	70%	60%	76%	70%
		Satisfaction Index	58%	52%	36%	56%	44%	34%	56%	50%
4	- General Engineering	Average Rating	82%	76%	64%	76%	72%	66%	84%	76%
		Satisfaction Index	74%	70%	44%	62%	44%	50%	72%	62%
5	- Engineering within major	Average Rating	84%	80%	72%	80%	72%	64%	86%	78%
		Satisfaction Index	74%	70%	52%	68%	56%	50%	76%	66%
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		Average Rating	82%	72%	66%	74%	68%	68%	76%	72%
		Satisfaction Index	72%	56%	44%	54%	48%	42%	58%	54%
C. Quality of advice by the staff with respect to:										
7	- Academic planning	Average Rating	80%	76%	66%	74%	72%	66%	74%	74%
		Satisfaction Index	64%	66%	34%	62%	44%	44%	54%	56%
8	- Career planning	Average Rating	78%	72%	64%	72%	74%	64%	76%	72%
		Satisfaction Index	64%	56%	38%	54%	48%	40%	56%	52%
D. Equity of treatment by:										

9	- Academic administrators	Average Rating	78%	72%	68%	74%	72%	62%	76%	72%
		Satisfaction Index	64%	58%	42%	54%	44%	34%	60%	54%
10	- Faculty	Average Rating	78%	72%	72%	72%	68%	62%	78%	72%
		Satisfaction Index	66%	60%	50%	52%	48%	46%	64%	56%
11	- Teaching assistants and engineers	Average Rating	82%	72%	70%	74%	70%	70%	78%	74%
		Satisfaction Index	72%	56%	48%	58%	42%	50%	62%	56%
12	- Fellow students	Average Rating	80%	72%	72%	74%	66%	72%	78%	74%
		Satisfaction Index	66%	54%	52%	54%	30%	52%	62%	54%
E. Quality of the facilities:										
13	- Classrooms	Average Rating	70%	62%	52%	60%	50%	50%	62%	60%
		Satisfaction Index	54%	36%	22%	36%	14%	12%	40%	34%
14	- Science laboratories	Average Rating	66%	62%	52%	64%	62%	46%	68%	60%
		Satisfaction Index	48%	36%	26%	38%	26%	14%	48%	36%
15	- Engineering Laboratories	Average Rating	70%	64%	52%	64%	66%	36%	68%	62%
		Satisfaction Index	50%	36%	24%	44%	30%	4%	46%	36%
16	- Computing facilities	Average Rating	70%	60%	56%	66%	60%	40%	68%	62%
		Satisfaction Index	52%	34%	26%	46%	28%	8%	46%	38%
17	- Libraries	Average Rating	74%	70%	70%	72%	66%	58%	72%	70%
		Satisfaction Index	60%	54%	48%	52%	32%	30%	56%	50%

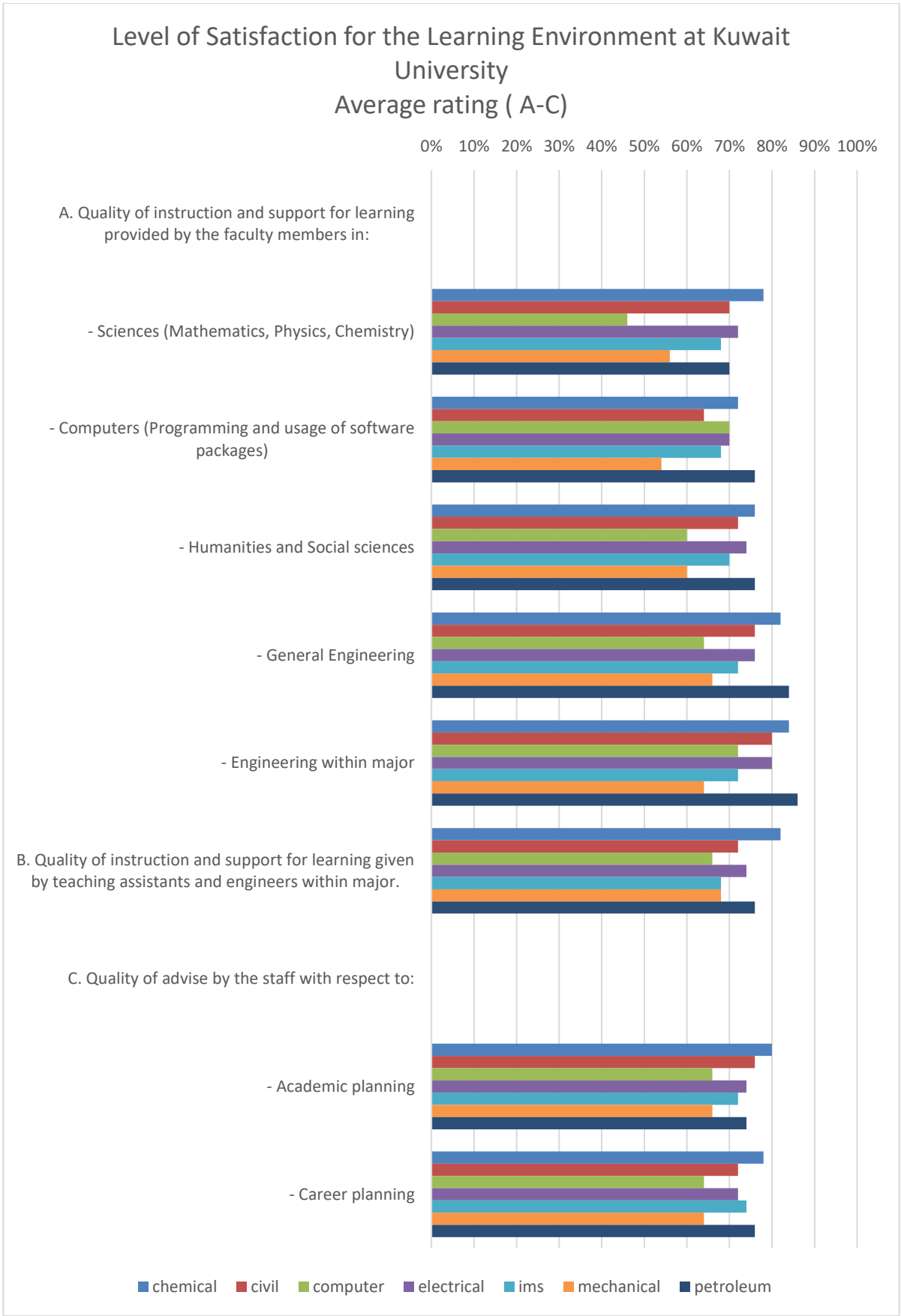

Figure 6 Differences among departments – Learning environment

Cont. Figure 6 Differences among departments – Learning environment

Table 8 Differences among departments – Support Services

#	Outcomes		chemical	civil	computer	electrical	ims	mechanical	petroleum	College
A. Academic Services:										
1	Admissions/Registrar	Average Rating	82%	72%	68%	70%	68%	62%	76%	72%
		Satisfaction Index	80%	64%	52%	56%	56%	40%	72%	60%
2	Training office	Average Rating	82%	78%	72%	78%	76%	66%	78%	76%
		Satisfaction Index	80%	72%	50%	74%	56%	46%	68%	68%
3	Libraries	Average Rating	78%	74%	76%	76%	72%	68%	80%	76%
		Satisfaction Index	66%	68%	66%	64%	66%	46%	80%	66%
4	Bookstores	Average Rating	76%	72%	68%	76%	66%	60%	78%	72%
		Satisfaction Index	64%	68%	48%	68%	42%	30%	70%	60%
B. Administrative Offices:										
5	Students affairs office in your department	Average Rating	78%	74%	72%	76%	74%	60%	78%	74%
		Satisfaction Index	64%	64%	70%	68%	56%	32%	68%	64%
6	Administrative offices in the college	Average Rating	76%	72%	74%	74%	70%	62%	78%	74%
		Satisfaction Index	70%	60%	68%	66%	52%	44%	70%	64%
C. Other Services:										
7	Health services	Average Rating	80%	68%	68%	72%	70%	62%	78%	72%
		Satisfaction Index	70%	52%	50%	64%	56%	40%	68%	58%

8	Food services	Average Rating	66%	66%	60%	66%	64%	48%	78%	66%
		Satisfaction Index	50%	52%	36%	48%	40%	22%	64%	46%
9	Parking	Average Rating	48%	50%	32%	46%	50%	26%	50%	44%
		Satisfaction Index	28%	32%	12%	28%	26%	4%	38%	26%
10	Recreation and athletics	Average Rating	64%	62%	54%	66%	64%	46%	70%	62%
		Satisfaction Index	42%	50%	28%	50%	36%	24%	56%	44%
11	Others	Average Rating	66%	62%	66%	76%	56%	52%	82%	68%
		Satisfaction Index	48%	42%	54%	70%	42%	28%	70%	54%

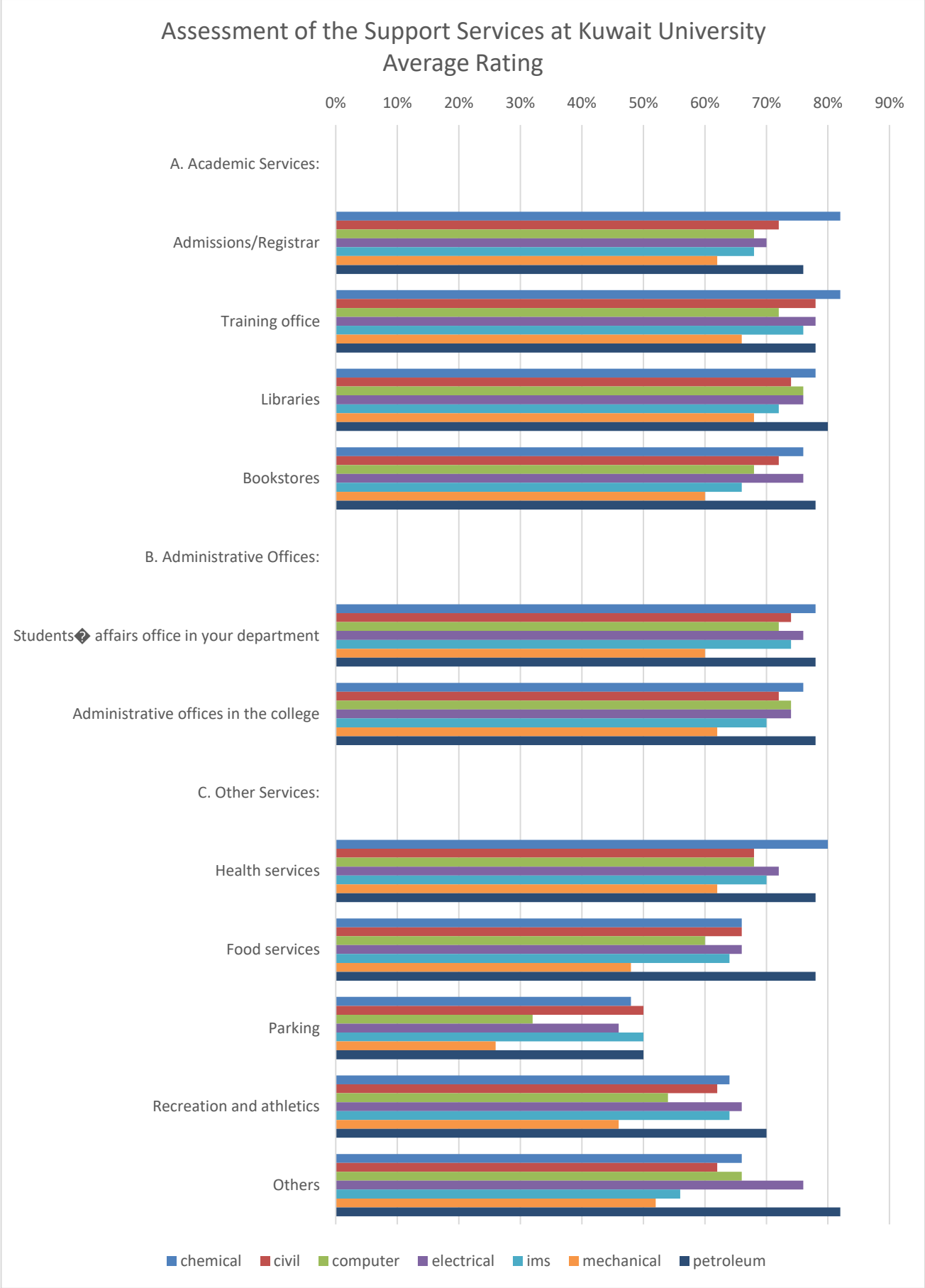

Figure 7 Differences among departments – Support Services

Exit Survey Form

Kuwait University

College of Engineering & Petroleum

Office of Academic Assessment

EXIT SURVEY FORM

P.O. Box 5969, Safat 13060, Kuwait http://www.eng.kuniv.edu/oaa/ *Tel: 4811188-5868, Fax: 4811772*

The faculty and students of Kuwait University are dedicated to the continuous improvement of undergraduate engineering programs. The information that you provide through this survey will be very helpful in this process. We appreciate your help in filling out this survey. Thank you for your cooperation and support.

Engineering major**:**

☐ Civil ☐ Chemical ☐ Computer ☐ Electrical

☐ Petroleum ☐ Mechanical ☐ Industrial & Management Systems

Name (optional):_____ Gender: ☐ M ☐ F

Year of Graduation: _____

Overall GPA: _____

Future plans (check all that apply)

☐ I intend to work in the government sector.

☐ I intend to work in the private sector.

☐ I intend to go to graduate school.

☐ I intend to start my own business.

☐ I intend to do other things (please specify): _____

Please fill in the tables in the next pages concerning the skills, abilities and attributes that you have acquired while studying Engineering at Kuwait University.

1. Assessment of Abilities, Skills and Attributes Acquired at Kuwait University.

Please rate each of the following skills, abilities or attributes in terms of how well your education at Kuwait University prepared you for them.

Skills, abilities, and attributes	*Level of preparation*					
	Very well prepared	*Well prepared*	*Prepared*	*Somewhat prepared*	*Not prepared*	*Can't evaluate*
1. Apply knowledge of mathematics, physics and engineering.	☐	☐	☐	☐	☐	☐
2. Design and conduct experiments, as well as to analyze and interpret data.	☐	☐	☐	☐	☐	☐
3. Design a system, component, or process to meet desired needs.	☐	☐	☐	☐	☐	☐
4. Function effectively in teams.	☐	☐	☐	☐	☐	☐
5. Identify, formulate, and solve engineering problems.	☐	☐	☐	☐	☐	☐
6. Understand professional and ethical responsibilities. ***(e.g. safety, professional ethics, code of conduct).***	☐	☐	☐	☐	☐	☐
7. Communicate effectively (written reports).	☐	☐	☐	☐	☐	☐
8. Communicate effectively (oral presentations).	☐	☐	☐	☐	☐	☐
9. Understand and appreciate the impact of engineering in the societal and global contexts.	☐	☐	☐	☐	☐	☐
10. Be aware of the need for, and improved my ability to engage in life-long learning ***(seeking further education, self learning, membership in professional societies)***.	☐	☐	☐	☐	☐	☐
11. Be aware of contemporary issues ***(e.g. economics of engineering, environmental issues, etc…)***	☐	☐	☐	☐	☐	☐

12. Ability to use computing technology in communications. ☐ ☐ ☐ ☐ ☐ ☐

13. Ability to use computing technology in engineering analysis/design ☐ ☐ ☐ ☐ ☐ ☐

14. Ability to use state of the art techniques, and tools in engineering practice. ☐ ☐ ☐ ☐ ☐ ☐

15. Apply the knowledge of probability and statistics. ☐ ☐ ☐ ☐ ☐ ☐

2. Assessment of the Learning Environment at Kuwait University

Please indicate your satisfaction with each of the following aspects of your experience at Kuwait University.

	Level of satisfaction					
	Extremely satisfied	*Very satisfied*	*Satisfied*	*Somewhat satisfied*	*Not satisfied*	*Can't evaluate*
A. Quality of instruction and support for learning provided by the faculty members in:						
- Sciences (Mathematics, Physics, Chemistry)	☐	☐	☐	☐	☐	☐
- Computers (Programming and usage of software packages)	☐	☐	☐	☐	☐	☐
- Humanities and Social sciences	☐	☐	☐	☐	☐	☐
- General Engineering,	☐	☐	☐	☐	☐	☐
- Engineering within major	☐	☐	☐	☐	☐	☐
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.	☐	☐	☐	☐	☐	☐
C. Quality of advice by the staff with respect to:						

- Academic planning ☐ ☐ ☐ ☐ ☐ ☐

- Career planning ☐ ☐ ☐ ☐ ☐ ☐

D. Equity of treatment by:

- Academic administrators ☐ ☐ ☐ ☐ ☐ ☐

- Faculty ☐ ☐ ☐ ☐ ☐ ☐

- Teaching assistants and engineers ☐ ☐ ☐ ☐ ☐ ☐

- Fellow students ☐ ☐ ☐ ☐ ☐ ☐

E. Quality of the facilities:

- Classrooms ☐ ☐ ☐ ☐ ☐ ☐

- Science laboratories ☐ ☐ ☐ ☐ ☐ ☐

- Engineering Laboratories ☐ ☐ ☐ ☐ ☐ ☐

- Computing facilities ☐ ☐ ☐ ☐ ☐ ☐

- Libraries ☐ ☐ ☐ ☐ ☐ ☐

3. Assessment of Support Services

Please rate the quality of services provided by the listed offices. In addition, please indicate the amount of interaction that you had with each office.

	Quality of services						*Amount of interaction*		
	Very good	*Good*	*Adequate*	*Poor*	*Very poor*	*No opinion*	*Much*	*Some*	*Little or none*
A. Academic Services:									
Admissions/Registrar	☐	☐	☐	☐	☐	☐	☐	☐	☐
Training office	☐	☐	☐	☐	☐	☐	☐	☐	☐

Libraries	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Bookstores	☐	☐	☐	☐	☐	☐	☐	☐	☐		

B. Administrative Offices:

Students' affairs office in your department	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Administrative offices in the college	☐	☐	☐	☐	☐	☐	☐	☐	☐		

C. Other Services:

Health services	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Food services	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Parking	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Recreation and athletics	☐	☐	☐	☐	☐	☐	☐	☐	☐		
Others (specify) _____	☐	☐	☐	☐	☐	☐	☐	☐	☐		

4. General Assessment

Please answer the following questions:

A. Please list some very important skills that you think you had learned in the engineering program.

_____

_____

_____

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

_____

_____

_____

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary).

_____

_____

_____

Chemical Engineering Program
Exit Survey Results

For the Academic year 2016-2017

CHEMICAL ENGINEERING VISION & MISSION

Mission

The Mission Statement of the Chemical Engineering Department is to produce chemical engineers capable of meeting the technological and societal needs of Kuwait and the Gulf region.

This mission is fulfilled by providing a broad curriculum in the basic sciences, process systems and design, unit operations, and in modern experimental and computing techniques. The program strives for academic excellence through continual assessment of the outcomes. The focus is on petroleum and petrochemical technology, environmental engineering, and water technology.

Vision

The Chemical Engineering Department strives for regional and international recognition in teaching, research and community service. It enriches the standard of engineering education, continually enhances the quality and competence of graduated students, and stimulates outstanding research activities that contribute to the advancement of the chemical engineering profession and the development of local and regional industry.

EDUCATIONAL OBJECTIVES AND STUDENT OUTCOMES

Educational Objectives:

Graduates of the Undergraduate Program in Chemical Engineering will

1. be productive in their chosen careers in the public and private sectors; especially in the fields of oil refining, petrochemicals, and water;
2. advance in responsibility and leadership in their careers and engage in ongoing professional development by successfully pursuing graduate studies and/or other learning activities; and
3. contribute to the welfare of society by directing their skills and technical expertise toward addressing the needs of the community and the environment

Student Outcomes

The Chemical Engineering Program provides an integrated curriculum enabling students to develop skills and attitudes that are essential to their future successful career. The Program will ensure that its engineers can demonstrate the following capabilities:

a. Apply basic mathematics and science to solve engineering problems.
b. Design and conduct laboratory experiments, and interpret results.
c. Design and analyze chemical processes.
d. Participate effectively in teamwork.
e. Identify, formulate, and solve engineering problems.
f. Recognize and conform to highest professional and ethical standards.
g. Communicate effectively in oral and written form.

h. Recognize the impact of engineering solutions on the society and the —environment.
i. Recognize the need for life-long learning.
j. Awareness of contemporary social, economic and political issues.
k. Proficiency in utilizing modern engineering tools.
l. Competence in tackling chemical/process engineering problems that are important to Kuwait and regional industries.

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

*** Major: Chemical Engineering**

*** Number of Students participated in the survey:**

38	**Male**	**23**	**61%**
	Female	**15**	**39%**

Survey Results:

*** Students' Future plans:**

No. of students who:

Plans	N	%
Intend to work in the government sector.	**29**	**76%**
Intend to work in the private sector.	**30**	**79%**
Intend to go to graduate school.	**19**	**50%**
Intend to start my own business	**19**	**50%**
Intend to do other things	**0**	**0%**

* **Table 1** shows students' feedback for the first group of question in the exit survey which is about the students' assessment for the outcomes acquired at Kuwait University. The table also shows the average score and the satisfaction index out of 5 and as percentage for each item.

* **Table 2** shows students' feedback for the second group of question about their level of satisfaction for the learning Environment at Kuwait University.

* **Table 3** shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. The table also shows the amount of interaction they had with each item.

Table1 Assessment of the outcomes acquired at Kuwait University

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	21	12	5	0	0	0	4.4	**4.3**
		55%	32%	13%	0%	0%	0%	88%	**86%**
2	Design and conduct experiments, as well as to analyze and interpret data.	15	14	9	0	0	0	4.2	**3.8**
		39%	37%	24%	0%	0%	0%	84%	**76%**
3	Design a system, component, or process to meet desired needs.	14	14	10	0	0	0	4.1	**3.7**
		37%	37%	26%	0%	0%	0%	82%	**74%**
4	Function effectively in teams.	21	12	5	0	0	0	4.4	**4.3**
		55%	32%	13%	0%	0%	0%	88%	**86%**
5	Identify, formulate, and solve engineering problems.	18	12	7	1	0	0	4.2	**3.9**
		47%	32%	18%	3%	0%	0%	84%	**78%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	18	11	8	1	0	0	4.2	**3.8**
		47%	29%	21%	3%	0%	0%	84%	**76%**
7	Communicate effectively (written reports).	18	13	7	0	0	0	4.3	**4.1**
		47%	34%	18%	0%	0%	0%	86%	**82%**
8	Communicate effectively (oral presentations).	15	14	7	2	0	0	4.1	**3.8**
		39%	37%	18%	5%	0%	0%	82%	**76%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	19	9	7	2	0	1	4.2	**3.8**
		50%	24%	18%	5%	0%	3%	84%	**76%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	15	14	8	1	0	0	4.1	**3.8**
		39%	37%	21%	3%	0%	0%	82%	**76%**
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	20	10	7	1	0	0	4.3	**3.9**
		53%	26%	18%	3%	0%	0%	86%	**78%**
12	Ability to use computing technology in communications.	16	14	8	0	0	0	4.2	**3.9**
		42%	37%	21%	0%	0%	0%	84%	**78%**
13	Ability to use computing technology in engineering analysis/design.	16	14	8	0	0	0	4.2	**3.9**
		42%	37%	21%	0%	0%	0%	84%	**78%**

14	Ability to use state of the art techniques, and tools in engineering practice.	15	14	8	1	0	0	4.1	**3.8**
		39%	37%	21%	3%	0%	0%	82%	**76%**
15	Apply the knowledge of probability and statistics.	16	10	11	1	0	0	4.1	**3.4**
		42%	26%	29%	3%	0%	0%	82%	**68%**
16	Competence in tackling Chemical/process engineering problems that are important to local and regional industries.	19	13	6	0	0	0	4.3	**4.2**
		50%	34%	16%	0%	0%	0%	86%	**84%**

Table2 Level of satisfaction for the learning Environment at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	18	6	9	2	3	0	3.9	**3.2**
		47%	16%	24%	5%	8%	0%	78%	**64%**
2	- Computers (Programming and usage of software packages)	10	10	10	6	1	1	3.6	**2.7**
		26%	26%	26%	16%	3%	3%	72%	**54%**
3	- Humanities and Social sciences	11	11	12	4	0	0	3.8	**2.9**
		29%	29%	32%	11%	0%	0%	76%	**58%**
4	- General Engineering	14	14	9	1	0	0	4.1	**3.7**
		37%	37%	24%	3%	0%	0%	82%	**74%**
5	- Engineering within major	18	10	9	1	0	0	4.2	**3.7**
		47%	26%	24%	3%	0%	0%	84%	**74%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		14	13	10	1	0	0	4.1	**3.6**
		37%	34%	26%	3%	0%	0%	82%	**72%**
C. Quality of advice by the staff with respect to:									
7	- Academic planning	16	8	11	2	0	1	4	**3.2**
		42%	21%	29%	5%	0%	3%	80%	**64%**
8	- Career planning	13	11	11	2	0	1	3.9	**3.2**
		34%	29%	29%	5%	0%	3%	78%	**64%**
D. Equity of treatment by:									
9	- Academic administrators	12	12	12	2	0	0	3.9	**3.2**
		32%	32%	32%	5%	0%	0%	78%	**64%**
10	- Faculty	12	13	10	3	0	0	3.9	**3.3**
		32%	34%	26%	8%	0%	0%	78%	**66%**
11	- Teaching assistants and engineers	15	12	10	1	0	0	4.1	**3.6**
		39%	32%	26%	3%	0%	0%	82%	**72%**
12	- Fellow students	15	10	12	0	1	0	4	**3.3**
		39%	26%	32%	0%	3%	0%	80%	**66%**
E. Quality of the facilities:									

13	- Classrooms	12	8	9	4	4	1	3.5	**2.7**
		32%	21%	24%	11%	11%	3%	70%	**54%**
14	- Science laboratories	8	10	11	5	4	0	3.3	**2.4**
		21%	26%	29%	13%	11%	0%	66%	**48%**
15	- Engineering Laboratories	11	8	12	3	4	0	3.5	**2.5**
		29%	21%	32%	8%	11%	0%	70%	**50%**
16	- Computing facilities	12	8	8	6	4	0	3.5	**2.6**
		32%	21%	21%	16%	11%	0%	70%	**52%**
17	- Libraries	13	10	8	5	2	0	3.7	**3**
		34%	26%	21%	13%	5%	0%	74%	**60%**

Table3 Assessment of the Support Services at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	14	14	5	2	0	3	4.1	**4**	17	17	4
		37%	37%	13%	5%	0%	8%	82%	**80%**	45%	45%	11%
2	Training office	11	16	6	1	0	4	4.1	**4**	15	19	4
		29%	42%	16%	3%	0%	11%	82%	**80%**	39%	50%	11%
3	Libraries	10	13	10	2	0	3	3.9	**3.3**	14	19	5
		26%	34%	26%	5%	0%	8%	78%	**66%**	37%	50%	13%
4	Bookstores	10	14	9	3	1	1	3.8	**3.2**	15	21	2
		26%	37%	24%	8%	3%	3%	76%	**64%**	39%	55%	5%
B. Administrative Offices:												
5	Students affairs office in your department	12	12	10	2	1	1	3.9	**3.2**	18	16	4
		32%	32%	26%	5%	3%	3%	78%	**64%**	47%	42%	11%
6	Administrative offices in the college	11	15	6	4	1	1	3.8	**3.5**	12	20	6
		29%	39%	16%	11%	3%	3%	76%	**70%**	32%	53%	16%
C. Other Services:												
7	Health services	16	7	5	4	1	5	4	**3.5**	10	17	11
		42%	18%	13%	11%	3%	13%	80%	**70%**	26%	45%	29%
8	Food services	9	9	8	5	5	2	3.3	**2.5**	12	21	5
		24%	24%	21%	13%	13%	5%	66%	**50%**	32%	55%	13%
9	Parking	6	4	3	7	16	2	2.4	**1.4**	14	17	7
		16%	11%	8%	18%	42%	5%	48%	**28%**	37%	45%	18%
10	Recreation and athletics	7	6	7	7	4	7	3.2	**2.1**	7	20	11
		18%	16%	18%	18%	11%	18%	64%	**42%**	18%	53%	29%
11	Others	6	5	5	3	4	15	3.3	**2.4**	9	13	8
		16%	13%	13%	8%	11%	39%	66%	**48%**	24%	34%	21%

* Open-ended questions

A. Please list some very important skills that you think you had learned in the engineering program.

Function effectively in teams
Team work and patience
Equipment design
Apply knowledge of mathematics, physics and engineering 2. Design and conduct experiments, as well as to analyze and interpret data.
how to deal with a problem and how to find the solution step by step
knowledge
how to think like engineer to solve any problem
skills in computer programs in general
Team work and communication skills including oral presentation and on the spot improvisation
Computer programs like hysis .
Computer skills, Presentation skills, and oral speech
computer programs
reading
group working
Some communication skills
Thinking
Communication with other students Trusting others
knowledge
Engineering knowledge Presentation
How to be a good engineer, Time management ,public speaking ,and Team work skills
Teamwork Leadership
Thinking, reading, evaluating.
Hard work, patient
The ability of analyzing problems

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

Computing technology
How to appreciate others work in KU from faculty members
Skills that must be taken by going to the stations and Taking the information from staff
Group work
training course because it is an elective course
Confidence at the oral
To apply what I learned in the real physical world
Time with family and friends (social)
More communication skills
Social life
Learning what my major helps in the petroleum industry
computer programs
Work experience and how to manage the plant, Career advices
Adaptability
Practical working.

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary):

going to the stations that specialist for every major
To connect theory to real life applications
more time to study for finals!
More time to study and better teaching skills
a must course in each of the engineering courses that apply the communication skills
more time to study
The doctors of the major should invest more time communicating with the students and teaching them every step of the way
More parking
more classes
Career advices and applying our study in the practical life
Making the field training mandatory.

Civil Engineering Program
Exit Survey Results

For the Academic year 2016-2017

CIVIL ENGINEERING MISSION & VISION

The mission and vision of the Civil Engineering Department are consistent with that of Kuwait University. They have been developed with input from all constituencies (e.g. faculty, students and employers).

Mission

The mission of the CE program is to serve the people of the State of Kuwait by providing a broad and high-quality education to its students for a successful professional career, to conduct strong basic and applied research for national needs, and to serve the industry, Civil Engineering profession, and community at large through innovative solutions, dissemination of knowledge, and advancement of Civil Engineering in major areas of the profession

Vision

The vision of the CE program is to establish an outstanding program of regional and international reputation for providing a quality engineering education, excellent research and services to the profession and the community; to produce top-quality civil engineers; and to employ principles of continual quality improvement to enhance its program.

EDUCATIONAL OBJECTIVES AND STUDENT OUTCOMES

Educational Objectives:

The graduates of the CE program will:

1. Engage in productive careers in a broad range of civil engineering areas in public and private sectors in Kuwait, or successfully pursue advanced studies and careers in academia or in other research environments;
2. Advance in responsibility and leadership in their careers and engage in continuous professional development to respond to rapidly evolving technological and social challenges; and
3. Contribute to the welfare of the society and the development of the profession through responsible practice of engineering and involvement in professional organizations.

Student Outcomes

Graduates of the Civil Engineering program shall demonstrate:

a. Ability to apply knowledge of mathematics, basic sciences and engineering in modeling and analyzing engineering systems.
b. Ability to design and conduct experiments, and to analyze and interpret data.
c. Ability to design a system, component, or process to meet desired needs within realistic constraints in recognized major civil engineering areas.
d. Ability to function as members or managers on multidisciplinary teams.
e. Ability to identify, formulate and solve engineering problems.
f. Understanding of professional and ethical responsibility.
g. Ability to communicate effectively.

h. Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.
i. Recognition of the need for, and an ability to engage in life-long learning.
j. Awareness of emerging technologies in local and global context, and involvement in discussions of contemporary issues related to society.
k. Ability to utilize state-of-the-art hardware and software tools for problem solving and design that are necessary for engineering practice.

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

*** Major: Civil Engineering**

*** Number of Students participated in the survey:**

79	**Male**	**13**	**16%**
	Female	**65**	**82%**

Survey Results:

*** Students' Future plans:**

No. of students who:

Plans	N	%
Intend to work in the government sector.	**54**	**68%**
Intend to work in the private sector.	**39**	**49%**
Intend to go to graduate school.	**26**	**33%**
Intend to start my own business	**28**	**35%**
Intend to do other things	**9**	**11%**
continue master		
take master digree		
Get a master degree		

* **Table 1** shows students' feedback for the first group of question in the exit survey which is about the students' assessment for the outcomes acquired at Kuwait University. The table also shows the average score and the satisfaction index out of 5 and as percentage for each item.

* **Table 2** shows students' feedback for the second group of question about their level of satisfaction for the learning Environment at Kuwait University.

* **Table 3** shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. The table also shows the amount of interaction they had with each item.

Table1 Assessment of the outcomes acquired at Kuwait University

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	31	23	22	1	1	1	4.1	**3.5**
		39%	29%	28%	1%	1%	1%	82%	**70%**
2	Design and conduct experiments, as well as to analyze and interpret data.	21	33	17	6	0	2	3.9	**3.5**
		27%	42%	22%	8%	0%	3%	78%	**70%**
3	Design a system, component, or process to meet desired needs.	20	31	22	4	0	2	3.9	**3.3**
		25%	39%	28%	5%	0%	3%	78%	**66%**
4	Function effectively in teams.	29	27	19	2	1	1	4	**3.6**
		37%	34%	24%	3%	1%	1%	80%	**72%**
5	Identify, formulate, and solve engineering problems.	26	25	24	2	1	1	3.9	**3.3**
		33%	32%	30%	3%	1%	1%	78%	**66%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	30	28	19	1	0	1	4.1	**3.7**
		38%	35%	24%	1%	0%	1%	82%	**74%**
7	Communicate effectively (written reports).	26	30	16	5	1	1	4	**3.6**
		33%	38%	20%	6%	1%	1%	80%	**72%**
8	Communicate effectively (oral presentations).	21	29	22	4	2	1	3.8	**3.2**
		27%	37%	28%	5%	3%	1%	76%	**64%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	27	25	22	4	0	1	4	**3.3**
		34%	32%	28%	5%	0%	1%	80%	**66%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	20	34	17	7	0	1	3.9	**3.5**
		25%	43%	22%	9%	0%	1%	78%	**70%**
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	19	33	22	4	0	1	3.9	**3.3**
		24%	42%	28%	5%	0%	1%	78%	**66%**
12	Ability to use computing technology in communications.	18	30	24	4	1	2	3.8	**3.1**
		23%	38%	30%	5%	1%	3%	76%	**62%**
13	Ability to use computing technology in engineering analysis/design.	18	27	26	7	0	1	3.7	**2.9**
		23%	34%	33%	9%	0%	1%	74%	**58%**
14		12	28	28	8	1	2	3.5	**2.6**

	Ability to use state of the art techniques, and tools in engineering practice.	15%	35%	35%	10%	1%	3%	70%	**52%**
15	Apply the knowledge of probability and statistics.	11	33	28	3	1	3	3.7	**2.9**
		14%	42%	35%	4%	1%	4%	74%	**58%**
16	Proficiency in design at the entry level and recognition of professional practice issues in recognized major areas of civil engineering.	14	33	22	5	2	3	3.7	**3.1**
		18%	42%	28%	6%	3%	4%	74%	**62%**

Table2 Level of satisfaction for the learning Environment at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	17	26	22	6	6	2	3.5	**2.8**
		22%	33%	28%	8%	8%	3%	70%	**56%**
2	- Computers (Programming and usage of software packages)	12	22	23	15	6	1	3.2	**2.2**
		15%	28%	29%	19%	8%	1%	64%	**44%**
3	- Humanities and Social sciences	18	22	24	11	2	2	3.6	**2.6**
		23%	28%	30%	14%	3%	3%	72%	**52%**
4	- General Engineering	21	34	14	8	1	1	3.8	**3.5**
		27%	43%	18%	10%	1%	1%	76%	**70%**
5	- Engineering within major	29	25	17	4	2	2	4	**3.5**
		37%	32%	22%	5%	3%	3%	80%	**70%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		17	27	26	5	3	1	3.6	**2.8**
		22%	34%	33%	6%	4%	1%	72%	**56%**
C. Quality of advice by the staff with respect to:									
7	- Academic planning	19	30	19	6	1	4	3.8	**3.3**
		24%	38%	24%	8%	1%	5%	76%	**66%**
8	- Career planning	15	27	23	7	3	4	3.6	**2.8**
		19%	34%	29%	9%	4%	5%	72%	**56%**
D. Equity of treatment by:									
9	- Academic administrators	14	30	21	8	2	4	3.6	**2.9**
		18%	38%	27%	10%	3%	5%	72%	**58%**
10	- Faculty	16	29	20	8	3	3	3.6	**3**
		20%	37%	25%	10%	4%	4%	72%	**60%**
11	- Teaching assistants and engineers	18	25	21	9	3	3	3.6	**2.8**
		23%	32%	27%	11%	4%	4%	72%	**56%**
12	- Fellow students	16	26	24	10	1	2	3.6	**2.7**
		20%	33%	30%	13%	1%	3%	72%	**54%**
E. Quality of the facilities:									

13	- Classrooms	12	16	25	16	8	2	3.1	**1.8**
		15%	20%	32%	20%	10%	3%	62%	**36%**
14	- Science laboratories	11	16	24	19	7	2	3.1	**1.8**
		14%	20%	30%	24%	9%	3%	62%	**36%**
15	- Engineering Laboratories	11	17	28	15	6	2	3.2	**1.8**
		14%	22%	35%	19%	8%	3%	64%	**36%**
16	- Computing facilities	11	15	27	15	10	1	3	**1.7**
		14%	19%	34%	19%	13%	1%	60%	**34%**
17	- Libraries	14	28	22	9	5	1	3.5	**2.7**
		18%	35%	28%	11%	6%	1%	70%	**54%**

Table3 Assessment of the Support Services at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	11	35	14	8	4	7	3.6	**3.2**	32	39	7
		14%	44%	18%	10%	5%	9%	72%	**64%**	41%	49%	9%
2	Training office	15	33	15	3	0	13	3.9	**3.6**	17	48	13
		19%	42%	19%	4%	0%	16%	78%	**72%**	22%	61%	16%
3	Libraries	12	39	14	6	3	5	3.7	**3.4**	25	44	9
		15%	49%	18%	8%	4%	6%	74%	**68%**	32%	56%	11%
4	Bookstores	10	40	13	6	4	6	3.6	**3.4**	27	40	11
		13%	51%	16%	8%	5%	8%	72%	**68%**	34%	51%	14%
B. Administrative Offices:												
5	Students affairs office in your department	12	32	22	1	2	10	3.7	**3.2**	22	46	10
		15%	41%	28%	1%	3%	13%	74%	**64%**	28%	58%	13%
6	Administrative offices in the college	11	32	23	2	3	8	3.6	**3**	15	52	11
		14%	41%	29%	3%	4%	10%	72%	**60%**	19%	66%	14%
C. Other Services:												
7	Health services	8	27	22	5	5	12	3.4	**2.6**	16	48	14
		10%	34%	28%	6%	6%	15%	68%	**52%**	20%	61%	18%
8	Food services	10	29	20	8	8	4	3.3	**2.6**	24	44	10
		13%	37%	25%	10%	10%	5%	66%	**52%**	30%	56%	13%
9	Parking	6	18	5	19	25	6	2.5	**1.6**	24	42	12
		8%	23%	6%	24%	32%	8%	50%	**32%**	30%	53%	15%
10	Recreation and athletics	10	22	9	8	14	16	3.1	**2.5**	15	47	16
		13%	28%	11%	10%	18%	20%	62%	**50%**	19%	59%	20%
11	Others	5	15	10	15	3	31	3.1	**2.1**	20	34	11
		6%	19%	13%	19%	4%	39%	62%	**42%**	25%	43%	14%

* Open-ended questions

Please list some very important skills that you think you had learned in the engineering program.

Teamwork Public speaking
Teamwork / Time management /
Design
communication skills, presentation skills , time management , pressure control
Autocad
Public speaking Teamwork
organization working under pressure
realizing the good things in my college .
Gathering
general engineering skills, presentation skills, technology skills.
Understood professional and ethical responsibilities. 2. Learned how to write the reports. 3. Ability to use computing technology in engineering analysis/design.
Hard worker Experience Quality learning
Writing reports
i dont have any idea .
The use of some important softwares in the field of civil engineering. 2. The knowledge of very important subjects and issues in my field.
Understand professional and ethical responsibilities
i know what i learn and what i will do
Logical thinking. Ability to solve and analyze problems.
new techniques for understanding the civil engineer works .
Teamwork / Time management
Function effectively in teams Understand and appreciate the impact of engineering in the societal and global contexts. Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).
dealing with different groups of people
presentaions 2- group work 3-self confidence
Team work
communication skills , engineering skills
Problem analysis
presentation skills , communication skills , time management , stress control
communication , team work, openly speak about opinions, confidence
never give up, there is always a solution for every thing.
Apply the knowledge of probability and statistics.
Working in one team by one heart & helping others
team work , independence
ability to use tools in engineering practice
achieve alot of works in given period
knowing how to write a technical report
The ability to think in an engineering way even in social life The ability to communicate with others The ability to express engineering concepts and to present with much confidence
do presentation team work structural design by stadd pro program
improve my self
improve my self and skill

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

Nothing specific
Dealing with various engineering programs
Presentation
in field training
Computer applications
solving problems by programs instead of solving manual .
solving problems by programs instead of solving manual .
learning to solve problems by computer programs .

Manage time
Engineering practical training. 2. Training how to do an oral presentation.
Using programs
recreation and athletics
Some important subjects could not be taken in an undergraduate course. Also, field training is needed before the future job career.
using computer programmes
Knowing some software programs that help in desinging process. Training and get the experience
computer application
put more practical stidying to get more information for the future
costal course
improving my english
On site visits or what a civil engineer does on the job site.
self improvement classes
Using new programs
practical training
nothing, i have learnt alot
how to implement our studies in field.
I dont think so that thair any skills i need to get
Making this program in the summer semester
try eng. on real life
design using software
using softwares for designing
Maybe some computer softwares that could benefit us in future job
reading plan draw structural plan

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary): adding more parking, making a more advanced web-site for registration

Site visits become part of the course
Online teaching system
i think the programs shall contain more practical (field) training
lessen to students needs and achieve them .
Applying a course of how to do an oral presentation.
Classes and laboratories with new technology
parking and register
Better parking facilities, laboratories, computers, lecture halls, a cafeteria, a sports center, and a leisure hall are thought to improve the academic programs at Kuwait University College of Engineering and petroleum.
improve the buildings and parkings
honest
more classes for programming
we need more cars parking
add some of the titorials for engineering courses
The whole education system that we are having is really bad, we are being taught to more likely care about our final grades rather than the education itself. Students are treated poorly by some of the faculty members . I have taken more than 45 classes during my studies in KU and sadly the number of classes where i felt that the instructor was really trying to reach out to the students and educate them is no more than 5.
equality and equity between students
improvement on the registration system
i think the program shall contain more practical and in field training
very good program but the issue with parking was a major set back
enhance laboratory experiment.
give Academy courses of Code of Ethics
try to make study fun and easy
More programs that involve the community and life and social skills instead of electives
update the programs yearly
improve the registration system
more technical work
I think professors should hardly relate the studied material to the actual life I think some computer softwares should be studied
intensification of activities related to the specialization of civil engineering

Computer Engineering Program
Exit Survey Results

For the Academic year 2016-2017

COMPUTER ENGINEERING MISSION & VISION

Mission

The mission of the undergraduate program in computer engineering is to foster excellence in computing by

- Providing a high quality, accredited educational experience that prepares students for success in engineering practice and advanced studies.
- Serving the academic, professional, and business computing communities in the State of Kuwait.
- Creating, expanding and disseminating knowledge through scholarly activities.

Vision

The vision of computer engineering department is to be recognized regionally and internationally as a provider of high-quality undergraduate and graduate education that emphasizes scholastic excellence, practical skills, and professional competency to become leaders in exploring new frontiers in computing. In addition, our vision is to conduct state-of-the-art research and deliver community services.

EDUCATIONAL OBJECTIVES AND STUDENT OUTCOMES

Educational Objectives:

Our Computer Engineering Program Educational Objectives have been established to highlight the areas of student achievement that will satisfy constituent's needs, both now and in the future, and fulfill the program's mission.

Educational objectives of the undergraduate computer engineering program at Kuwait University are to produce graduates who will be:

1. Practitioners of computer engineering with productive careers in computing professions in public and private organizations, and academia.
2. Engaged in professional development and learning activities by pursuing advanced studies or training in engineering or other disciplines.
3. Contributors to the welfare of society, and the development of their business and professional environments.

Student Outcomes

Graduates of the Computer Engineering Program shall have the knowledge and skills described below:

a. An ability to apply knowledge of mathematics, science, and engineering.
b. An ability to design and conduct experiments as well as analyze and interpret data.
c. An ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
d. An ability to function on multi-disciplinary teams.
e. An ability to identify, formulate, and solve engineering problems.
f. An understanding of professional and ethical responsibility.
g. An ability to communicate effectively in oral and written form.
h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.

i. A Recognition of the need for, and an ability to engage in life-long learning.
j. A Knowledge of contemporary issues.
k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
l. A Knowledge of probability and statistics, including their applications to computer engineering.
m. A knowledge of mathematics through differential and integral calculus, and basic, computer, and engineering sciences, necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components, as appropriate to computer engineering.
n. A Knowledge of discrete mathematics.

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

*** Major: Computer Engineering**

*** Number of Students participated in the survey:**

46	**Male**	**16**	**35%**
	Female	**30**	**65%**

Survey Results:

*** Students' Future plans:**

No. of students who:

Plans	N	%
Intend to work in the government sector.	**35**	**76%**
Intend to work in the private sector.	**21**	**46%**
Intend to go to graduate school.	**11**	**24%**
Intend to start my own business	**16**	**35%**
Intend to do other things	**1**	**2%**
whatever the future may show that piques my interest		

* **Table 1** shows students' feedback for the first group of question in the exit survey which is about the students' assessment for the outcomes acquired at Kuwait University. The table also shows the average score and the satisfaction index out of 5 and as percentage for each item.

* **Table 2** shows students' feedback for the second group of question about their level of satisfaction for the learning Environment at Kuwait University.

* **Table 3** shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. The table also shows the amount of interaction they had with each item.

Table1 Assessment of the outcomes acquired at Kuwait University

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	5	19	20	2	0	0	3.6	**2.6**
		11%	41%	43%	4%	0%	0%	72%	**52%**
2	Design and conduct experiments, as well as to analyze and interpret data.	9	13	18	6	0	0	3.5	**2.4**
		20%	28%	39%	13%	0%	0%	70%	**48%**
3	Design a system, component, or process to meet desired needs.	6	21	13	5	1	0	3.6	**2.9**
		13%	46%	28%	11%	2%	0%	72%	**58%**
4	Function effectively in teams.	18	15	10	2	1	0	4	**3.6**
		39%	33%	22%	4%	2%	0%	80%	**72%**
5	Identify, formulate, and solve engineering problems.	9	16	18	3	0	0	3.7	**2.7**
		20%	35%	39%	7%	0%	0%	74%	**54%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	24	6	13	3	0	0	4.1	**3.3**
		52%	13%	28%	7%	0%	0%	82%	**66%**
7	Communicate effectively (written reports).	13	19	9	4	0	1	3.9	**3.6**
		28%	41%	20%	9%	0%	2%	78%	**72%**
8	Communicate effectively (oral presentations).	11	13	19	3	0	0	3.7	**2.6**
		24%	28%	41%	7%	0%	0%	74%	**52%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	14	18	10	3	1	0	3.9	**3.5**
		30%	39%	22%	7%	2%	0%	78%	**70%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	10	11	19	4	2	0	3.5	**2.3**
		22%	24%	41%	9%	4%	0%	70%	**46%**
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	6	6	25	7	1	1	3.2	**1.3**
		13%	13%	54%	15%	2%	2%	64%	**26%**
12	Ability to use computing technology in communications.	16	10	18	2	0	0	3.9	**2.8**
		35%	22%	39%	4%	0%	0%	78%	**56%**
13	Ability to use computing technology in engineering analysis/design.	11	15	17	3	0	0	3.7	**2.8**
		24%	33%	37%	7%	0%	0%	74%	**56%**

14	Ability to use state of the art techniques, and tools in engineering practice.	5	12	16	10	0	3	3.3	**2**
		11%	26%	35%	22%	0%	7%	66%	**40%**
15	Apply the knowledge of probability and statistics.	7	8	19	12	0	0	3.2	**1.6**
		15%	17%	41%	26%	0%	0%	64%	**32%**
16	A knowledge of mathematics through differential and integral calculus, and basic, computer, and engineering sciences, necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components, as appropriate to computer engineering.	5	9	21	11	0	0	3.2	**1.5**
		11%	20%	46%	24%	0%	0%	64%	**30%**
17	A knowledge of discrete mathematics.	13	13	11	7	1	1	3.7	**2.9**
		28%	28%	24%	15%	2%	2%	74%	**58%**

Table2 Level of satisfaction for the learning Environment at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	2	2	17	12	13	0	2.3	**0.4**
		4%	4%	37%	26%	28%	0%	46%	**8%**
2	- Computers (Programming and usage of software packages)	12	11	14	8	1	0	3.5	**2.5**
		26%	24%	30%	17%	2%	0%	70%	**50%**
3	- Humanities and Social sciences	2	13	13	10	3	5	3	**1.8**
		4%	28%	28%	22%	7%	11%	60%	**36%**
4	- General Engineering	4	16	15	7	3	1	3.2	**2.2**
		9%	35%	33%	15%	7%	2%	64%	**44%**
5	- Engineering within major	12	12	14	7	1	0	3.6	**2.6**
		26%	26%	30%	15%	2%	0%	72%	**52%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		5	15	17	8	1	0	3.3	**2.2**
		11%	33%	37%	17%	2%	0%	66%	**44%**
C. Quality of advice by the staff with respect to:									
7	- Academic planning	6	8	21	5	2	4	3.3	**1.7**
		13%	17%	46%	11%	4%	9%	66%	**34%**
8	- Career planning	5	9	13	7	3	9	3.2	**1.9**
		11%	20%	28%	15%	7%	20%	64%	**38%**
D. Equity of treatment by:									
9	- Academic administrators	9	9	17	6	2	3	3.4	**2.1**
		20%	20%	37%	13%	4%	7%	68%	**42%**
10	- Faculty	12	11	15	8	0	0	3.6	**2.5**
		26%	24%	33%	17%	0%	0%	72%	**50%**
11	- Teaching assistants and engineers	12	10	14	8	2	0	3.5	**2.4**
		26%	22%	30%	17%	4%	0%	70%	**48%**
12	- Fellow students	9	15	19	2	1	0	3.6	**2.6**
		20%	33%	41%	4%	2%	0%	72%	**52%**

E. Quality of the facilities:									
13	- Classrooms	3	7	15	11	10	0	2.6	**1.1**
		7%	15%	33%	24%	22%	0%	52%	**22%**
14	- Science laboratories	3	9	9	16	9	0	2.6	**1.3**
		7%	20%	20%	35%	20%	0%	52%	**26%**
15	- Engineering Laboratories	5	6	10	17	8	0	2.6	**1.2**
		11%	13%	22%	37%	17%	0%	52%	**24%**
16	- Computing facilities	4	8	12	15	6	1	2.8	**1.3**
		9%	17%	26%	33%	13%	2%	56%	**26%**
17	- Libraries	8	14	17	5	2	0	3.5	**2.4**
		17%	30%	37%	11%	4%	0%	70%	**48%**

Table3 Assessment of the Support Services at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	6	15	11	5	3	6	3.4	**2.6**	17	20	9
		13%	33%	24%	11%	7%	13%	68%	**52%**	37%	43%	20%
2	Training office	5	13	16	1	1	10	3.6	**2.5**	5	21	20
		11%	28%	35%	2%	2%	22%	72%	**50%**	11%	46%	43%
3	Libraries	10	18	12	1	1	4	3.8	**3.3**	12	26	8
		22%	39%	26%	2%	2%	9%	76%	**66%**	26%	57%	17%
4	Bookstores	8	12	15	4	3	4	3.4	**2.4**	14	19	13
		17%	26%	33%	9%	7%	9%	68%	**48%**	30%	41%	28%
B. Administrative Offices:												
5	Students affairs office in your department	5	24	5	6	1	5	3.6	**3.5**	11	22	13
		11%	52%	11%	13%	2%	11%	72%	**70%**	24%	48%	28%
6	Administrative offices in the college	6	21	9	3	1	6	3.7	**3.4**	11	22	13
		13%	46%	20%	7%	2%	13%	74%	**68%**	24%	48%	28%
C. Other Services:												
7	Health services	3	14	11	6	0	12	3.4	**2.5**	7	18	21
		7%	30%	24%	13%	0%	26%	68%	**50%**	15%	39%	46%
8	Food services	2	14	17	6	6	1	3	**1.8**	24	21	1
		4%	30%	37%	13%	13%	2%	60%	**36%**	52%	46%	2%
9	Parking	1	4	1	8	29	3	1.6	**0.6**	24	8	14
		2%	9%	2%	17%	63%	7%	32%	**12%**	52%	17%	30%
10	Recreation and athletics	0	9	11	7	6	13	2.7	**1.4**	6	14	26
		0%	20%	24%	15%	13%	28%	54%	**28%**	13%	30%	57%
11	Others	2	6	3	2	2	31	3.3	**2.7**	6	7	17
		4%	13%	7%	4%	4%	67%	66%	**54%**	13%	15%	37%

* Open-ended questions (unedited student comments)

A. Please list some very important skills that you think you had learned in the engineering program.

programming, writing reports, presenting, computer security and safety
Programming Languages Oral presentations Independent Studying Accumulated knowledge of my major
I learned some programming languages and alot of methods to solve engineering Problems
programming, analysis ,learn how to think logically
design digital systems, programming in c++ and java, building the logics gates, applying value engineering on projects, safety.
oral presentation - working with teams - communication with people inside and outside the college. - problems solving skills.
I have learned team work.
improved in Scientific, Logical and practical skills.
Working as a team, writing professional reports, doing researches, programming and all the important information about my major, understanding the materiel rather than just memorize it for the exam
Problem solving communication professional behavior
analytical thinking, programming skills, using micro-controllers, how to present oral presentations and how to do a step by step design process for projects etc
Social skills mostly, and what I answered in part A
knowledge of mathematics, physics and engineering. programming skills. thinking like an engineer.
programming
aside of teamwork and enhancing ability of oral presentation ,I believe designing database and use of programing language(java ,C++,Paython) and how to build a good data structure are one of the most important skills that I have learned.
teamwork and enhancing ability of oral presentation ,I believe designing database and use of programing language(java ,C++,Paython) and how to build a good data structure are one of the most important skills that I have learned.
presentation skills, team work, report writing, programming, adapting to pressure, self learning
programming design reports writing dealing with hardware
Mind Development Programming
programming languages ,computer hardware ,computer network
constructively with teammates. Presentation.
Problem Solving Logical Thinking Improvement in mathematics Presenting skills Reporting skills
programming Designing software Group work

problem solving programming designing software

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

networking
Robotics course
Did not learn about the applications in IOS and Android system
training with the new technology
create and program applications, network programming.
Practical application in foreign institutions and companies
database
robot skills, hardware skills.
Programming for the robot and lab.
Engineering training office workshop
Intelligent systems building Building application on different software Operating system Data base system no thing
data base. artificial intelligent.
None.
I learned all the useful skills from the university
Learning different languages.
sport
self studing materials
Game Design, Artificial Intelligence, Natural Language Processing, Data Mining
Game Development.
Professors does not have a good way to teach us the Material.

Self studing
programing an app and website
I believe that I learned enough skills from kuwait university.
Learning useful programming languages like HTML, PHP, Swift ..etc / Graphical skills
the latest programming technieqes for mobile applications
everything involving exercise and athleticism
network programing
i did notv have chance in some elective courses because only 4 are required
Working on real project that our community really in need of.
Game Engine programming (Unreal, Unity, etc)
Scientific skills I gained through my studies but what was affected because of my studies is my practice of some hobbies.
security networks because its an elective course
I am interested in augmented reality and network security.
I am interested in augmented reality and network security.
hardware courses where you actually work in a lab and build something physical
-new programming language , swift for example
Real job experience
swift programming language
Programming in other popular languages. More hardware skills and applications. Website based application, and database.
iOS development courses Mac Lab that contains iMacs is closed and no one can open the door and it is not used at all.

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary):

practical work more than theoritical
The computer labs need to be updated. More electives need to be opened. Not let 1 professor be the only one to teach a specific course, let there be a variety.
Develop course Material Renwed buildings Providing parking
need to have more training course.
more labs and practical works.
in engineering need to less report document and increase practice skills. add profeesional labs
We need more practical application in the labs.
Add more conservation's classes for 200 level to improve the English language
Letting students to practice what they learn from courses by adding a lab courses.
Please, for the future students, I would like you to solve the problem of parking. I would also like to see the students open clubs for other students to join. Clubs that suites the students interest like photography,
There should be some online courses, especially for the summer course.
having more modern labs
Focus more on practical skill development to prepare the student for the real life work.
give the chance for more niche courses to be available, many students want to learn my different things, try having a wider range of elective courses available.
Increase students parking
Tell instructions to be more friendly with students
Support online interactions with faculties and online course learning
having community related classes (for example, having one credit class where computer engineering students educate people about computers/tablets)
adding more practical ways of learning
ios and android courses
Improve services like food, and parking, Also having modern building and technology equipped classrooms.
Do more Practical teaching than Theoretical teaching.
Take into consideration professors evaluation and find a solution for an ineffective professor with his students.
Include labs as much as possible .it help understanding the concepts and connecting it to the real word.
update some subjects and lab material . There is no need for using NXT in "Robotics 0612434 ". 3.I had to self-learn php in order to use it in connecting my applications to database(that is stored in server) when I believe such skill should be focused in during "database 0612341" subject which only spoke about the "connecting" briefly .at least provide a list of related instructions and their uses instead of having to search a lot of instructions to find what is needed . 4. Please improve announcement of events ,contests and educational programs.make sure it reach a lot of students and that it is done early .sometime it reach students too late to be able to participate .
have labs where we can build computers or memories or just something with actual hardware
having better laps - teaching something new in market , not old stuff .Field works more than reports

Electrical Engineering Program
Exit Survey Results

For the Academic year 2016-2017

ELECTRICAL ENGINEERING MISSION & VISION

Mission

The mission of the Electrical Engineering Program is:

- To provide a quality and broad engineering education.
- To conduct strong basic and applied research, to dissemination of knowledge, and to contribute to advancement of science and technology.
- To serve the industry, the profession, and the community at large through innovative solutions.

Vision

The vision of the program is to gain regional and international recognition for providing a quality engineering education, outstanding research programs and exceptional community service. In addition, it is envisioned that the graduates of the program will be successful in their professional careers and/or graduate studies, prepared for professional creativity and leadership, and lead productive lives that contribute to improvement of society.

EDUCATIONAL OBJECTIVES AND STUDENT OUTCOMES

Educational Objectives:

The Program Educational Objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

The EE Program has adopted the following Program Educational Objectives.

1. Graduates will successfully engage in careers in the broad range of electrical engineering areas to serve the needs of both private and public sectors.
2. Graduates will engage in continuous professional development activities, seek learning opportunities including graduate studies, and adapt to the rapid changes in work environment.
3. Graduates will contribute to the well-being of the society and environment through responsible practice of engineering profession.

Student Outcomes

The graduates of the Electrical Engineering Program will have:

(1-a) An ability to apply knowledge of mathematics, science, and engineering.
(2-b) An ability to design and conduct experiments, as well as to analyze and interpret data.
(3-c) An ability to design a system, component, or process to meet desired needs.
(4-d) An ability to function on multi-disciplinary teams.
(5-e) An ability to identify, formulates, and solve engineering problems.
(6-f) An understanding of professional and ethical responsibility.
(7-g) An ability to communicate effectively.
(8-h) A broad education necessary to understand the impact of engineering solutions in a global and societal context.
(9-i) Recognition of the need for, and an ability to engage in life-long learning.
(10-j) Knowledge of contemporary issues.

(11-k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

(12-l) Knowledge of probability and statistics, including applications appropriate to the program objectives.

(13-m) Knowledge of advanced mathematics, typically including differential equations, linear algebra, complex variables, and discrete mathematics.

(14-n) An ability to analyze, designs, and implement systems containing hardware and software components.

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

*** Major: Electrical Engineering**

*** Number of Students participated in the survey:**

121	**Male**	**32**	**26%**
	Female	**81**	**67%**

Survey Results:

*** Students' Future plans:**

No. of students who:

Plans	N	%
Intend to work in the government sector.	**74**	**61%**
Intend to work in the private sector.	**67**	**55%**
Intend to go to graduate school.	**20**	**17%**
Intend to start my own business	**25**	**21%**
Intend to do other things	**7**	**6%**
Studying Master		
Studying Master		
to live healthy life		
Study master		
Study master		
Projects		

* **Table 1** shows students' feedback for the first group of question in the exit survey which is about the students' assessment for the outcomes acquired at Kuwait University. The table also shows the average score and the satisfaction index out of 5 and as percentage for each item.

* **Table 2** shows students' feedback for the second group of question about their level of satisfaction for the learning Environment at Kuwait University.

* **Table 3** shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. The table also shows the amount of interaction they had with each item.

Table1 Assessment of the outcomes acquired at Kuwait University

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	42	43	23	3	0	10	4.1	**3.8**
		35%	36%	19%	2%	0%	8%	82%	**76%**
2	Design and conduct experiments, as well as to analyze and interpret data.	30	47	31	3	1	9	3.9	**3.4**
		25%	39%	26%	2%	1%	7%	78%	**68%**
3	Design a system, component, or process to meet desired needs.	34	40	33	5	0	9	3.9	**3.3**
		28%	33%	27%	4%	0%	7%	78%	**66%**
4	Function effectively in teams.	45	34	25	5	2	10	4	**3.6**
		37%	28%	21%	4%	2%	8%	80%	**72%**
5	Identify, formulate, and solve engineering problems.	33	50	20	9	0	9	4	**3.7**
		27%	41%	17%	7%	0%	7%	80%	**74%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	34	41	26	8	1	11	3.9	**3.4**
		28%	34%	21%	7%	1%	9%	78%	**68%**
7	Communicate effectively (written reports).	31	46	24	9	1	10	3.9	**3.5**
		26%	38%	20%	7%	1%	8%	78%	**70%**
8	Communicate effectively (oral presentations).	35	37	29	10	1	9	3.8	**3.2**
		29%	31%	24%	8%	1%	7%	76%	**64%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	37	43	22	9	0	10	4	**3.6**
		31%	36%	18%	7%	0%	8%	80%	**72%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	34	38	30	10	0	9	3.9	**3.2**
		28%	31%	25%	8%	0%	7%	78%	**64%**
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	29	40	30	10	2	10	3.8	**3.1**
		24%	33%	25%	8%	2%	8%	76%	**62%**
12	Ability to use computing technology in communications.	31	45	28	7	0	10	3.9	**3.4**
		26%	37%	23%	6%	0%	8%	78%	**68%**
13		33	45	23	8	2	10	3.9	**3.5**

	Ability to use computing technology in engineering analysis/design.	27%	37%	19%	7%	2%	8%	78%	**70%**
14	Ability to use state of the art techniques, and tools in engineering practice.	24	46	29	12	1	9	3.7	**3.1**
		20%	38%	24%	10%	1%	7%	74%	**62%**
15	Apply the knowledge of probability and statistics.	22	39	36	13	2	9	3.6	**2.7**
		18%	32%	30%	11%	2%	7%	72%	**54%**
16	Knowledge of advanced mathematics, typically including differential equations, linear algebra, complex variables, and discrete mathematics.	36	41	24	10	0	10	3.9	**3.5**
		30%	34%	20%	8%	0%	8%	78%	**70%**
17	An ability to analyze, design, and implement systems containing hardware and software components.	27	44	31	7	2	10	3.8	**3.2**
		22%	36%	26%	6%	2%	8%	76%	**64%**

Table2 Level of satisfaction for the learning Environment at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	33	24	34	12	7	11	3.6	**2.6**
		27%	20%	28%	10%	6%	9%	72%	**52%**
2	- Computers (Programming and usage of software packages)	18	35	46	10	3	9	3.5	**2.4**
		15%	29%	38%	8%	2%	7%	70%	**48%**
3	- Humanities and Social sciences	28	32	35	11	2	13	3.7	**2.8**
		23%	26%	29%	9%	2%	11%	74%	**56%**
4	- General Engineering	32	37	36	4	2	10	3.8	**3.1**
		26%	31%	30%	3%	2%	8%	76%	**62%**
5	- Engineering within major	40	35	28	4	2	12	4	**3.4**
		33%	29%	23%	3%	2%	10%	80%	**68%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		31	30	38	9	3	10	3.7	**2.7**
		26%	25%	31%	7%	2%	8%	74%	**54%**
C. Quality of advice by the staff with respect to:									
7	- Academic planning	26	42	31	9	3	10	3.7	**3.1**
		21%	35%	26%	7%	2%	8%	74%	**62%**
8	- Career planning	24	34	32	16	3	12	3.6	**2.7**
		20%	28%	26%	13%	2%	10%	72%	**54%**
D. Equity of treatment by:									
9	- Academic administrators	28	32	39	8	3	11	3.7	**2.7**
		23%	26%	32%	7%	2%	9%	74%	**54%**
10	- Faculty	28	30	40	9	4	10	3.6	**2.6**
		23%	25%	33%	7%	3%	8%	72%	**52%**
11	- Teaching assistants and engineers	31	33	37	9	2	9	3.7	**2.9**
		26%	27%	31%	7%	2%	7%	74%	**58%**
12	- Fellow students	30	30	35	13	2	11	3.7	**2.7**
		25%	25%	29%	11%	2%	9%	74%	**54%**
E. Quality of the facilities:									

13	- Classrooms	18	23	31	18	21	10	3	**1.8**
		15%	19%	26%	15%	17%	8%	60%	**36%**
14	- Science laboratories	18	24	37	19	12	11	3.2	**1.9**
		15%	20%	31%	16%	10%	9%	64%	**38%**
15	- Engineering Laboratories	18	31	30	21	12	9	3.2	**2.2**
		15%	26%	25%	17%	10%	7%	64%	**44%**
16	- Computing facilities	18	33	29	21	10	10	3.3	**2.3**
		15%	27%	24%	17%	8%	8%	66%	**46%**
17	- Libraries	25	31	37	11	4	13	3.6	**2.6**
		21%	26%	31%	9%	3%	11%	72%	**52%**

Table3 Assessment of the Support Services at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	20	42	26	15	8	10	3.5	**2.8**	46	56	11
		17%	35%	21%	12%	7%	8%	70%	**56%**	38%	46%	9%
2	Training office	29	50	20	3	4	15	3.9	**3.7**	32	68	13
		24%	41%	17%	2%	3%	12%	78%	**74%**	26%	56%	11%
3	Libraries	27	40	28	8	2	16	3.8	**3.2**	38	57	18
		22%	33%	23%	7%	2%	13%	76%	**64%**	31%	47%	15%
4	Bookstores	22	51	21	9	3	15	3.8	**3.4**	34	65	14
		18%	42%	17%	7%	2%	12%	76%	**68%**	28%	54%	12%
B. Administrative Offices:												
5	Students affairs office in your department	21	52	22	9	2	15	3.8	**3.4**	35	62	16
		17%	43%	18%	7%	2%	12%	76%	**68%**	29%	51%	13%
6	Administrative offices in the college	22	48	22	10	3	16	3.7	**3.3**	29	70	14
		18%	40%	18%	8%	2%	13%	74%	**66%**	24%	58%	12%
C. Other Services:												
7	Health services	22	44	19	8	10	18	3.6	**3.2**	37	58	18
		18%	36%	16%	7%	8%	15%	72%	**64%**	31%	48%	15%
8	Food services	16	37	33	14	11	10	3.3	**2.4**	42	58	13
		13%	31%	27%	12%	9%	8%	66%	**48%**	35%	48%	11%
9	Parking	10	19	14	18	46	14	2.3	**1.4**	38	54	21
		8%	16%	12%	15%	38%	12%	46%	**28%**	31%	45%	17%
10	Recreation and athletics	22	27	20	19	12	21	3.3	**2.5**	40	53	20
		18%	22%	17%	16%	10%	17%	66%	**50%**	33%	44%	17%
11	Others	15	28	9	6	3	60	3.8	**3.5**	31	51	14
		12%	23%	7%	5%	2%	50%	76%	**70%**	26%	42%	12%

* Open-ended questions (unedited student comments)

A. Please list some very important skills that you think you had learned in the engineering program.

solve faster , be accurate.
How to communicate with other people .. And how to present a presentation
solve faster, be accurate.
i learned depending on my self
patience , presenting , writing formal reports, calculating, learn to be hard working
Ways to solve the issue How to deal with teamwork
knowledge of mathematics, physics and engineering
Designing circuits and projects
Math , programming, design, teamwork
Knowledge of information and writing report and doing presentation
Math and programming languages
learn how to solve problems using engineering skills
handle stress
I learnt how to write a profisional report
Communicate effectively (written reports). -Function effectively in teams. -Understand professional and ethical responsibilities
being interactive with fellow students, working as a team, and improving reading and writing skills
Design methods, mathematics, oral fluency, communication skills and teamwork skills
How to write a report and how to give a good oral presentation. Also i have learned how to deal with the problems that i faced during my stay in KU
too much to list
Some programmers
I learned alot of things more knowledge, how to solve math problems
instrumentation and electric measurements - circuit design - signal processing - programming language (C++ & Assembly) - Critical thinking to solve problems
mathematical , engineering design , circuits ,team work
Speaking english fluently Presentation
speaking english
i have learned to be on time or before.
teamwork, problem solving, depending on my own
writing professional reports, patience, self confidence and presentation skills.
to be a good team worker , manage my time
thinking as an engineer
self dependance
How to solve things and think from different perspectives, and how to present any idea
to improve a self-study
writing reports/ solving problems
improve the student opinion
C++, Pspice, MATLAB, Arduino
team work thinking wise problem trouble shooting
hard working team work communication skills
team work communication skills
computer skills
LEARNING HOW TO COMMUNICATE WITH ENGINEER AND REACH THEIR THINKING
Team work
i learned from this program all lot of electric
How to analyze every problem, to deal with each problem with an engineering point of view
Learning how to apply engineering techniques
Research

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

how to apply what I learned in the real life ? how to deal with the electricity ?
I can not participate in activities because this college take all my times.
practice my talents while studying
nothing in my mind
All The Programmers are old version or not full copy
Matlab Relating the studied material to the actual life
Field training

Practice and doing presentation very well
practical work
Reading about other science
learning how to write reports and oral presentation
I do not remember
Not enough oral presentations
participation in events
no thing
I did not get the chance to learn how real work done we just studying all the time every thing is about stuffibg information
No thing I learn all skills
thinking out of the box make my mind wise
Programming
Practical working.
report writing
using up-to-date software to solve engineering problems (most programs were old editions)
Working on real tools
some of the program that we used in the labaratory is old. Students neads to do more tasks in the computer using new program
matlab course
practical experience!!!!!
Learning more about how to apply equations in real life
improve mathematics skills
improve self study
LEARNING EHAT THE PROJECT ARE APPLIED IN REAL LIFE
Practical skills!!!!!!
How to use engineering programs
application

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary):

please do this thing that, every subject student learned followed by subject how to apply the previous subject means go to suited place that related to the subject.
will be good if each subject followed by another subject related to the previous subject that apply what did they learned in suited place means in real life, not make every things theoretical but practical.
control the doctors grades depending on the exams when it is too hard and the average very low
Adding classes to solve problems Adding educational trips
Matlab classes
more practical courses
add more projects and less exams
Enhance the system of registration
Doing more projects instead of theoretical tests.
improve class room should be smart
Increase lab rooms because it dont enough to practice .
develop your teaching skills and do not challenge the student
improve the lab work
The professors should teach according to curriculums and they should be evaluated
Parking proplems should be so solved
more practical project less theoiretical qouizs and home works
some courses do not need to be successive to each other
Number of sections in each course should be increased
Some labs not useful
add more courses that includes new technologies like Arduino, raspberry pi boards that are used in many applications globally.
parking , cafeteria food
i suggest to improve the registration system and increase the number of the subjects in the course.
reduce number of the student in the class increase number of the parking
more presentation , practical work, elective from CpE DEPARTMENT (OPTINAL)
The collage need more parking spots
hire the kuniv engineers
KUNIV SHOULD PROVIDE COLLAGE OF ENGINEERING AND PETROLUM WITH NEW LABS
Parking lots, more practical engagements!!
Updating the major sheet

Industrial and Management Systems Engineering Program Exit Survey Results

For the Academic year 2016-2017

INDUSTRIAL & MANAGEMENT SYSTEMS ENGINEERING MISSION & VISION

Mission

The ***mission*** of the Industrial and Management Systems Engineering Program is to graduate competent students with capability to work in leading local and international organizations and potential for lifelong learning; and to provide the faculty with the required resources and environment to excel in teaching, research, and community service.

Vision

The vision of the program is to be recognized as a leading educational institution in Industrial and Management Systems Engineering in the region; attracting high-caliber students and faculty members.

To satisfy the *Mission* and *Vision* of the Department and to meet the needs of its constituents, three *Educational Objectives* have been adopted after consulting with faculty, employer representatives, and studying ABET models of leading educational institutions. In addition, a set of *Student Outcomes* are developed.

EDUCATIONAL OBJECTIVES AND STUDENT OUTCOMES

Educational Objectives:

The graduates of the IMSE program will:

1. have engaged in careers in a broad range of Industrial and Management Systems Engineering areas, or successfully pursued advanced studies.
2. have assumed leadership roles, and engaged in continuous professional development in response to technological and social challenges.
3. have contributed to the welfare of society and the development of the profession through active participation in societal and/or professional activities.

Student Outcomes

Achievement of the following student outcomes would indicate that the graduates are equipped with the necessary knowledge and skills to achieve the program educational objectives.

a. Ability to apply knowledge of mathematics, science and engineering .
b. Ability to design and conduct experiments related to deterministic or stochastic systems, as well as to analyze and interpret data.
c. Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
d. Ability to function on multidisciplinary teams.

e. Ability to identify, formulate and solve Industrial and Management Systems Engineering problems.
f. Understanding of professional and ethical responsibility.
g. Ability to communicate effectively.
h. Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
i. Ability to engage in life-long learning and appreciate the need for continual self-development.
j. Knowledge of contemporary issues.
k. Ability to use the techniques, skills, and the modern engineering tools necessary for Industrial and Management Systems Engineering practice.

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

*** Major: Industrial and Management Systems Engineering**

*** Number of Students participated in the survey:**

34	**Male**	**7**	**21%**
	Female	**27**	**79%**

Survey Results:

*** Students' Future plans:**

No. of students who:

Plans	N	%
Intend to work in the government sector.	**27**	**79%**
Intend to work in the private sector.	**8**	**24%**
Intend to go to graduate school.	**4**	**12%**
Intend to start my own business	**9**	**26%**
Intend to do other things	**1**	**3%**
internship		

* **Table 1** shows students' feedback for the first group of question in the exit survey which is about the students' assessment for the outcomes acquired at Kuwait University. The table also shows the average score and the satisfaction index out of 5 and as percentage for each item.

* **Table 2** shows students' feedback for the second group of question about their level of satisfaction for the learning Environment at Kuwait University.

* **Table 3** shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. The table also shows the amount of interaction they had with each item.

Table1 Assessment of the outcomes acquired at Kuwait University

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	13	12	9	0	0	0	4.1	**3.7**
		38%	35%	26%	0%	0%	0%	82%	**74%**
2	Design and conduct experiments, as well as to analyze and interpret data.	7	17	7	3	0	0	3.8	**3.5**
		21%	50%	21%	9%	0%	0%	76%	**70%**
3	Design a system, component, or process to meet desired needs.	9	15	9	1	0	0	3.9	**3.5**
		26%	44%	26%	3%	0%	0%	78%	**70%**
4	Function effectively in teams.	13	8	13	0	0	0	4	**3.1**
		38%	24%	38%	0%	0%	0%	80%	**62%**
5	Identify, formulate, and solve engineering problems.	11	11	11	0	0	1	4	**3.3**
		32%	32%	32%	0%	0%	3%	80%	**66%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	14	13	6	0	1	0	4.1	**4**
		41%	38%	18%	0%	3%	0%	82%	**80%**
7	Communicate effectively (written reports).	18	7	7	2	0	0	4.2	**3.7**
		53%	21%	21%	6%	0%	0%	84%	**74%**
8	Communicate effectively (oral presentations).	13	15	4	1	1	0	4.1	**4.1**
		38%	44%	12%	3%	3%	0%	82%	**82%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	12	8	14	0	0	0	3.9	**2.9**
		35%	24%	41%	0%	0%	0%	78%	**58%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	9	8	16	1	0	0	3.7	**2.5**
		26%	24%	47%	3%	0%	0%	74%	**50%**
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	9	7	16	2	0	0	3.7	**2.4**
		26%	21%	47%	6%	0%	0%	74%	**48%**
12	Ability to use computing technology in communications.	10	7	15	0	1	1	3.8	**2.6**
		29%	21%	44%	0%	3%	3%	76%	**52%**
13		11	8	14	1	0	0	3.9	**2.8**

	Ability to use computing technology in engineering analysis/design.	32%	24%	41%	3%	0%	0%	78%	**56%**
14	Ability to use state of the art techniques, and tools in engineering practice.	10	6	18	0	0	0	3.8	**2.4**
		29%	18%	53%	0%	0%	0%	76%	**48%**
15	Apply the knowledge of probability and statistics.	9	19	5	1	0	0	4.1	**4.1**
		26%	56%	15%	3%	0%	0%	82%	**82%**
16	A competency to apply Industrial and Management Systems Engineering techniques and tools in divers types of organizations with focus on quality engineering and management, productivity and logistics, ergonomics and safety, and engineering economical decisions.	13	8	13	0	0	0	4	**3.1**
		38%	24%	38%	0%	0%	0%	80%	**62%**

Table2 Level of satisfaction for the learning Environment at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	6	7	17	3	1	0	3.4	**1.9**
		18%	21%	50%	9%	3%	0%	68%	**38%**
2	- Computers (Programming and usage of software packages)	5	8	18	3	0	0	3.4	**1.9**
		15%	24%	53%	9%	0%	0%	68%	**38%**
3	- Humanities and Social sciences	6	9	17	1	1	0	3.5	**2.2**
		18%	26%	50%	3%	3%	0%	70%	**44%**
4	- General Engineering	9	6	17	2	0	0	3.6	**2.2**
		26%	18%	50%	6%	0%	0%	72%	**44%**
5	- Engineering within major	9	10	8	6	1	0	3.6	**2.8**
		26%	29%	24%	18%	3%	0%	72%	**56%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		6	10	9	9	0	0	3.4	**2.4**
		18%	29%	26%	26%	0%	0%	68%	**48%**
C. Quality of advice by the staff with respect to:									
7	- Academic planning	7	8	18	1	0	0	3.6	**2.2**
		21%	24%	53%	3%	0%	0%	72%	**44%**
8	- Career planning	7	9	18	0	0	0	3.7	**2.4**
		21%	26%	53%	0%	0%	0%	74%	**48%**
D. Equity of treatment by:									
9	- Academic administrators	8	7	15	4	0	0	3.6	**2.2**
		24%	21%	44%	12%	0%	0%	72%	**44%**
10	- Faculty	7	9	8	9	1	0	3.4	**2.4**
		21%	26%	24%	26%	3%	0%	68%	**48%**
11	- Teaching assistants and engineers	8	6	16	3	1	0	3.5	**2.1**
		24%	18%	47%	9%	3%	0%	70%	**42%**
12	- Fellow students	5	5	20	4	0	0	3.3	**1.5**
		15%	15%	59%	12%	0%	0%	66%	**30%**

E. Quality of the facilities:									
13	- Classrooms	3	2	11	12	6	0	2.5	**0.7**
		9%	6%	32%	35%	18%	0%	50%	**14%**
14	- Science laboratories	5	4	17	4	4	0	3.1	**1.3**
		15%	12%	50%	12%	12%	0%	62%	**26%**
15	- Engineering Laboratories	5	5	20	1	2	1	3.3	**1.5**
		15%	15%	59%	3%	6%	3%	66%	**30%**
16	- Computing facilities	5	4	11	12	1	1	3	**1.4**
		15%	12%	32%	35%	3%	3%	60%	**28%**
17	- Libraries	4	7	19	2	2	0	3.3	**1.6**
		12%	21%	56%	6%	6%	0%	66%	**32%**

Table3 Assessment of the Support Services at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	4	15	9	4	2	0	3.4	**2.8**	13	18	3
		12%	44%	26%	12%	6%	0%	68%	**56%**	38%	53%	9%
2	Training office	7	9	12	1	0	5	3.8	**2.8**	15	18	1
		21%	26%	35%	3%	0%	15%	76%	**56%**	44%	53%	3%
3	Libraries	5	17	3	8	0	1	3.6	**3.3**	11	21	2
		15%	50%	9%	24%	0%	3%	72%	**66%**	32%	62%	6%
4	Bookstores	4	10	14	5	1	0	3.3	**2.1**	14	16	4
		12%	29%	41%	15%	3%	0%	66%	**42%**	41%	47%	12%
B. Administrative Offices:												
5	Students affairs office in your department	10	9	11	3	1	0	3.7	**2.8**	11	21	2
		29%	26%	32%	9%	3%	0%	74%	**56%**	32%	62%	6%
6	Administrative offices in the college	7	11	7	9	0	0	3.5	**2.6**	10	22	2
		21%	32%	21%	26%	0%	0%	70%	**52%**	29%	65%	6%
C. Other Services:												
7	Health services	5	13	7	7	0	2	3.5	**2.8**	9	16	9
		15%	38%	21%	21%	0%	6%	70%	**56%**	26%	47%	26%
8	Food services	2	9	11	3	2	7	3.2	**2**	11	20	3
		6%	26%	32%	9%	6%	21%	64%	**40%**	32%	59%	9%
9	Parking	2	5	6	4	9	8	2.5	**1.3**	10	20	4
		6%	15%	18%	12%	26%	24%	50%	**26%**	29%	59%	12%
10	Recreation and athletics	5	6	12	3	4	4	3.2	**1.8**	8	21	5
		15%	18%	35%	9%	12%	12%	64%	**36%**	24%	62%	15%
11	Others	4	6	5	0	9	10	2.8	**2.1**	6	17	6
		12%	18%	15%	0%	26%	29%	56%	**42%**	18%	50%	18%

* Open-ended questions (unedited student comments)

A. Please list some very important skills that you think you had learned in the engineering program.

knowledge of mathematics and engineering oral presentations IE tools
Apply thr knowledge of operations research, statistics and probability
Simulation program
1-I knew how to write reports 2-improved my pesentation skill
improving my writing report skill
communication skill , programming
Public Speaking technical writing
Presentaion
professionalism
oral presentation
team work
How to work with team
how to work with group
Working wth groups
team work
communication and learning from others.
Forecasting techneques
Management skills
quality controls , demand planning , and a lot of good skills that will help me in future
became more confidence in speaking during presentations, improve my skills in science and engineering.
how to deal with people from diffrent societies with different mentality
working in groups, social skills , had the ability to understand the thinking of others, had the ability to get rid of the fear of presenting in front of people.
facility planning

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

membership in professional societies
I don't know
Conducting experiments
languages
No extracurricular activity
Ethics course
diversity of interaction with different people.
ethics coures
creativity
being patent
Training course
language
Practicing technical programs.
The supply chain methodology
field
more about safety and Engineering management
nothing.
did not have the chance to learn more about the work nature in my field. mostly we got academic skills more than developing our skills by trying the real work.
supply chain

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary):

apply work placement learning for students
Increase number of doctors in industrial department
Put high grades on attendance and participation in classes
conect the things that we learned with real life scientific issues
more effective training programme related to our major

professional doctor
Parking Cafteria
have extra curricular activities so that students can grow personally and within their hobbies, not just academically
parking cafreria
increase parking spots improve the quality of classes
provide more information regarding to the exam
Add training course for all departments
i do not have
Add more training courses
more projects and presentation in order to improve team work and self confidence
online courses.
Giving special labs for only the methods in industrial engineering
I think the students need an extra course to learn how to deal with real sectors in there major before taking Engineering design course
by having more professional classes and labs, bring more courses for my department and open more engineering majors.
more courses that will teach us how to deal with the real work.
more doctors needed

Mechanical Engineering Program
Exit Survey Results

For the Academic year 2016-2017

MECHANICAL ENGINEERING MISSION & VISION

Mission

The ***mission*** of the Department is to provide a quality and broad engineering education, to conduct strong basic and applied research, and to serve the industry, the profession and the community at large through innovative solutions, dissemination of knowledge, and advancement of science and technology.

Vision

The ***vision*** of the Department is to gain regional and international recognition for providing a quality engineering education, outstanding research programs and exceptional community service. In addition, it is envisioned that the graduates of the Program will be successful in their professional careers and/or graduate studies, prepared for professional creativity and leadership, and lead productive lives that contribute to improvement of society.

The Mechanical Engineering Department is committed to providing a healthy academic environment by attracting high quality students, faculty and staff. The curriculum is thoroughly based on mathematics, science, engineering science and design to fully-prepare students for their careers.

Educational objectives and student outcomes

Educational Objectives:

The graduates of the ME program will:

1. Engage in productive careers in a broad range of mechanical engineering areas in public and private sectors in Kuwait, or successfully pursue advanced studies and careers in academia or in other research environments
2. Advance in responsibility and leadership in their careers, and engage in continuous professional development to respond to rapidly evolving technological and social challenges
3. Contribute to the welfare of society and the development of the profession through responsible practice of engineering and involvement in professional organizations.

Student Outcomes

The ME program graduates will have:

1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to design and conduct experiments, as well as to analyze and interpret data
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
4. An ability to function on multidisciplinary teams
5. An ability to identify, formulate, and solve engineering problems
6. An understanding of professional and ethical responsibility
7. An ability to communicate effectively
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. A recognition of the need for, and an ability to engage in life-long learning
10. A knowledge of contemporary issues
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies..

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

*** Major: Mechanical Engineering**

*** Number of Students participated in the survey:**

28	**Male**	**17**	**61%**
	Female	**7**	**25%**

Survey Results:

*** Students' Future plans:**

No. of students who:

Plans	N	%
Intend to work in the government sector.	**11**	**39%**
Intend to work in the private sector.	**19**	**68%**
Intend to go to graduate school.	**9**	**32%**
Intend to start my own business	**9**	**32%**
Intend to do other things	**1**	**4%**

* **Table 1** shows students' feedback for the first group of question in the exit survey which is about the students' assessment for the outcomes acquired at Kuwait University. The table also shows the average score and the satisfaction index out of 5 and as percentage for each item.

* **Table 2** shows students' feedback for the second group of question about their level of satisfaction for the learning Environment at Kuwait University.

* **Table 3** shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. The table also shows the amount of interaction they had with each item.

Table1 Assessment of the outcomes acquired at Kuwait University

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	8	9	7	0	0	4	4	**3.5**
		29%	32%	25%	0%	0%	14%	80%	**70%**
2	Design and conduct experiments, as well as to analyze and interpret data.	5	5	12	2	0	4	3.5	**2.1**
		18%	18%	43%	7%	0%	14%	70%	**42%**
3	Design a system, component, or process to meet desired needs.	5	13	4	2	0	4	3.9	**3.8**
		18%	46%	14%	7%	0%	14%	78%	**76%**
4	Function effectively in teams.	7	11	5	1	0	4	4	**3.8**
		25%	39%	18%	4%	0%	14%	80%	**76%**
5	Identify, formulate, and solve engineering problems.	6	10	7	1	0	4	3.9	**3.3**
		21%	36%	25%	4%	0%	14%	78%	**66%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	10	4	9	1	0	4	4	**2.9**
		36%	14%	32%	4%	0%	14%	80%	**58%**
7	Communicate effectively (written reports).	6	7	9	2	0	4	3.7	**2.7**
		21%	25%	32%	7%	0%	14%	74%	**54%**
8	Communicate effectively (oral presentations).	7	8	6	3	0	4	3.8	**3.1**
		25%	29%	21%	11%	0%	14%	76%	**62%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	6	10	5	2	0	5	3.9	**3.5**
		21%	36%	18%	7%	0%	18%	78%	**70%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	6	10	6	1	0	5	3.9	**3.5**
		21%	36%	21%	4%	0%	18%	78%	**70%**
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	6	9	6	2	0	5	3.8	**3.3**
		21%	32%	21%	7%	0%	18%	76%	**66%**
12	Ability to use computing technology in communications.	9	5	8	2	0	4	3.9	**2.9**
		32%	18%	29%	7%	0%	14%	78%	**58%**
13		8	6	9	1	0	4	3.9	**2.9**

	Ability to use computing technology in engineering analysis/design.	29%	21%	32%	4%	0%	14%	78%	**58%**
14	Ability to use state of the art techniques, and tools in engineering practice.	5	7	9	1	1	5	3.6	**2.6**
		18%	25%	32%	4%	4%	18%	72%	**52%**
15	Apply the knowledge of probability and statistics.	4	4	10	3	2	5	3.2	**1.7**
		14%	14%	36%	11%	7%	18%	64%	**34%**
16	An ability to assume responsibility at an entry level in the areas of Mechanical Engineering that are important to Kuwait and the region, such as the design, analysis and maintenance of machinery, refrigeration, air-conditioning and desalination systems.	8	7	7	1	0	5	4	**3.3**
		29%	25%	25%	4%	0%	18%	80%	**66%**

Table2 Level of satisfaction for the learning Environment at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	2	5	8	5	4	4	2.8	**1.5**
		7%	18%	29%	18%	14%	14%	56%	**30%**
2	- Computers (Programming and usage of software packages)	1	5	8	5	5	4	2.7	**1.3**
		4%	18%	29%	18%	18%	14%	54%	**26%**
3	- Humanities and Social sciences	1	7	9	2	4	5	3	**1.7**
		4%	25%	32%	7%	14%	18%	60%	**34%**
4	- General Engineering	2	10	7	3	2	4	3.3	**2.5**
		7%	36%	25%	11%	7%	14%	66%	**50%**
5	- Engineering within major	4	8	4	5	3	4	3.2	**2.5**
		14%	29%	14%	18%	11%	14%	64%	**50%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		3	7	12	1	1	4	3.4	**2.1**
		11%	25%	43%	4%	4%	14%	68%	**42%**
C. Quality of advice by the staff with respect to:									
7	- Academic planning	4	6	7	4	2	5	3.3	**2.2**
		14%	21%	25%	14%	7%	18%	66%	**44%**
8	- Career planning	4	5	8	4	2	5	3.2	**2**
		14%	18%	29%	14%	7%	18%	64%	**40%**
D. Equity of treatment by:									
9	- Academic administrators	2	6	10	2	3	5	3.1	**1.7**
		7%	21%	36%	7%	11%	18%	62%	**34%**
10	- Faculty	3	8	6	3	4	4	3.1	**2.3**
		11%	29%	21%	11%	14%	14%	62%	**46%**
11	- Teaching assistants and engineers	6	6	8	2	2	4	3.5	**2.5**
		21%	21%	29%	7%	7%	14%	70%	**50%**
12	- Fellow students	4	8	8	3	0	5	3.6	**2.6**
		14%	29%	29%	11%	0%	18%	72%	**52%**

E. Quality of the facilities:									
13	- Classrooms	1	2	11	4	6	4	2.5	**0.6**
		4%	7%	39%	14%	21%	14%	50%	**12%**
14	- Science laboratories	2	1	6	6	8	5	2.3	**0.7**
		7%	4%	21%	21%	29%	18%	46%	**14%**
15	- Engineering Laboratories	0	1	6	4	12	5	1.8	**0.2**
		0%	4%	21%	14%	43%	18%	36%	**4%**
16	- Computing facilities	1	1	4	10	8	4	2	**0.4**
		4%	4%	14%	36%	29%	14%	40%	**8%**
17	- Libraries	4	3	9	2	6	4	2.9	**1.5**
		14%	11%	32%	7%	21%	14%	58%	**30%**

Table3 Assessment of the Support Services at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	2	7	10	0	4	5	3.1	**2**	6	15	3
		7%	25%	36%	0%	14%	18%	62%	**40%**	21%	54%	11%
2	Training office	3	6	6	4	1	8	3.3	**2.3**	5	12	7
		11%	21%	21%	14%	4%	29%	66%	**46%**	18%	43%	25%
3	Libraries	4	7	8	4	1	4	3.4	**2.3**	6	13	5
		14%	25%	29%	14%	4%	14%	68%	**46%**	21%	46%	18%
4	Bookstores	1	6	10	5	2	4	3	**1.5**	5	12	7
		4%	21%	36%	18%	7%	14%	60%	**30%**	18%	43%	25%
B. Administrative Offices:												
5	Students affairs office in your department	3	4	7	6	2	6	3	**1.6**	6	13	5
		11%	14%	25%	21%	7%	21%	60%	**32%**	21%	46%	18%
6	Administrative offices in the college	2	8	6	5	2	5	3.1	**2.2**	5	14	5
		7%	29%	21%	18%	7%	18%	62%	**44%**	18%	50%	18%
C. Other Services:												
7	Health services	1	7	7	3	2	8	3.1	**2**	4	13	7
		4%	25%	25%	11%	7%	29%	62%	**40%**	14%	46%	25%
8	Food services	0	5	7	4	7	5	2.4	**1.1**	16	6	2
		0%	18%	25%	14%	25%	18%	48%	**22%**	57%	21%	7%
9	Parking	0	1	1	3	19	4	1.3	**0.2**	14	7	3
		0%	4%	4%	11%	68%	14%	26%	**4%**	50%	25%	11%
10	Recreation and athletics	0	5	5	3	8	7	2.3	**1.2**	9	10	5
		0%	18%	18%	11%	29%	25%	46%	**24%**	32%	36%	18%
11	Others	1	2	3	2	3	17	2.6	**1.4**	3	10	5
		4%	7%	11%	7%	11%	61%	52%	**28%**	11%	36%	18%

* Open-ended questions (unedited student comments)

A. Please list some very important skills that you think you had learned in the engineering program.

Engineering Drawing- Computer Programming - Technical Report writing - FEM software packages
engineering drawings, technical writing.
respect and team work
i leared programming
Patience, productivity, multitasking, and creativity
mathematics, physics and engineering
team work, good communication, design using softwares and many others.
improved my arabic language skiils.
how to solve problems and look to each problem from different ways
Working with new people, finishing a project in short period.
I learned how to do programs
Team work
manufacturing skills and auto cad drawings
Engineering Design AC Design Ozone and environmental issues Mechanical Design Planned Maintenance
Aerodynamics
leadrship
autocad matlab
Solving problems

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

SolidWorks (Engineering Drawing) - Artificial Intelligence (AI) - Biomechanics.
training in fields.
some courses like internal combustion engine and advance fluid mechanics
i didnt get the chance to learn from different books for the same subject because some doctors in my major restrict solving any problem different from his way of teaching.
engineering ethics
some skills like elective programing courses, some imported courses that are not available in the mechanical department or have been a while since they became available like some field courses and some special courses of designing a robot.
attend an industrial training program
They should further advance and expand the use of the english language.
how to work in the labs by our hand and use machines
I didn't learn how to coupurate with sick people.
using my hand
Field Training
Implementing projects

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary):

use SolidWorks instead of AutoCAD in engineering drawing course
using more advanced packages.
needs more cars parking
renew the laboratory most of machines are old and dont work . also the CAD lab in 5KH most of computers are dead and the subject doctors won't do anything for you if the computer shutt down will you are solving the exam
change some doctors of mechanical department-baqala prices is very expensive
increase the regeristeration capacity for every course.
To improve the academic curriculum.
The environment on campus should be more supportive and motivational to students. Professors should be more flexible with students and should respect their efforts. The academic guidance should be provided to students from the very start of their freshman year giving them a heads up of what they're supposed to be expecting.
tha labs are too old also the computers are too ald to be used
Extra handworking
make more and useful for after graduate
improve class and labs facilities
Advisers MUST arrange at least 2 meetings with students not waiting them to ask

Petroleum Engineering Program
Exit Survey Results

For the Academic year 2016-2017

PETROLEUM ENGINEERING MISSION & VISION

Mission

To provide a modern petroleum engineering education with proper balance between theory and practice and to graduate petroleum engineers prepared for life-long learning and capable of being productive contributors for the oil and gas industry

Vision

To be a world-class provider of education and research for the oil and gas industry, to play a leadership role in providing new technologies in order to increase the petroleum reserves of Kuwait.

EDUCATIONAL OBJECTIVES AND STUDENT OUTCOMES

Educational Objectives:

The Petroleum Engineering Department at Kuwait University is dedicated to graduating Petroleum Engineers who will:

1. Engage in productive careers in petroleum engineering in public or private sectors, or successfully pursue graduate studies and careers in academia or research centers.
2. Advance in responsibility and leadership in their careers, and participate in continuous professional development to meet the challenges of rapidly emerging technology.
3. Contribute to the welfare of the society and the environment and the development of the profession through responsible practice of petroleum engineering and participation in professional activities and organizations.

Student Outcomes

Petroleum Engineering Student Outcomes

a. An ability to apply knowledge of mathematics, science, and engineering
b. An ability to design and conduct experiments, as well as to analyze and interpret data
c. An ability to design a system, component, or process to meet desired needs
d. An ability to function on multi-disciplinary teams
e. An ability to identify, formulate, and solve engineering problems
f. An understanding of professional and ethical responsibility
g. An ability to communicate effectively
h. The broad education necessary to understand the impact of engineering solutions in a global and societal context
i. A recognition of the need for, and an ability to engage in life-long learning
j. A knowledge of contemporary issues
k. An ability to use techniques, skills, and modern engineering tools necessary for engineering practice

ABET (2016-2017) Definitions

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies..

Student Outcomes – Student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program.

Survey Statistics:

*** Major: Petroleum Engineering**

*** Number of Students participated in the survey:**

37	**Male**	**15**	**41%**
	Female	**22**	**59**

Survey Results:

*** Students' Future plans:**

No. of students who:

Plans	N	%
Intend to work in the government sector.	**29**	**78%**
Intend to work in the private sector.	**18**	**49%**
Intend to go to graduate school.	**9**	**24%**
Intend to start my own business	**8**	**22%**
Intend to do other things	**1**	**3%**
Petroleum sector		

* **Table 1** shows students' feedback for the first group of question in the exit survey which is about the students' assessment for the outcomes acquired at Kuwait University. The table also shows the average score and the satisfaction index out of 5 and as percentage for each item.

* **Table 2** shows students' feedback for the second group of question about their level of satisfaction for the learning Environment at Kuwait University.

* **Table 3** shows students' feedback for the third and fourth groups about the students' assessment of the Support Services at Kuwait University. The table also shows the amount of interaction they had with each item.

Table1 Assessment of the outcomes acquired at Kuwait University

#	Outcome	5	4	3	2	1	0	Average	SI
1	Apply knowledge of mathematics, physics and engineering.	16	12	9	0	0	0	4.2	**3.8**
		43%	32%	24%	0%	0%	0%	84%	**76%**
2	Design and conduct experiments, as well as to analyze and interpret data.	12	15	9	1	0	0	4	**3.6**
		32%	41%	24%	3%	0%	0%	80%	**72%**
3	Design a system, component, or process to meet desired needs.	14	10	12	1	0	0	4	**3.2**
		38%	27%	32%	3%	0%	0%	80%	**64%**
4	Function effectively in teams.	13	13	9	1	1	0	4	**3.5**
		35%	35%	24%	3%	3%	0%	80%	**70%**
5	Identify, formulate, and solve engineering problems.	17	13	7	0	0	0	4.3	**4.1**
		46%	35%	19%	0%	0%	0%	86%	**82%**
6	Understand professional and ethical responsibilities.(e.g. safety, professional ethics, code of conduct).	19	12	6	0	0	0	4.4	**4.2**
		51%	32%	16%	0%	0%	0%	88%	**84%**
7	Communicate effectively (written reports).	14	13	8	2	0	0	4.1	**3.6**
		38%	35%	22%	5%	0%	0%	82%	**72%**
8	Communicate effectively (oral presentations).	11	11	14	1	0	0	3.9	**3**
		30%	30%	38%	3%	0%	0%	78%	**60%**
9	Understand and appreciate the impact of engineering in the societal and global contexts.	19	12	5	0	1	0	4.3	**4.2**
		51%	32%	14%	0%	3%	0%	86%	**84%**
10	Be aware of the need for, and improved my ability to engage in life-long learning (seeking further education, self learning, membership in professional societies).	16	12	8	0	1	0	4.1	**3.8**
		43%	32%	22%	0%	3%	0%	82%	**76%**
11	Be aware of contemporary issues(e.g. economics of engineering, environmental issues, etc)	18	10	8	1	0	0	4.2	**3.8**
		49%	27%	22%	3%	0%	0%	84%	**76%**
12	Ability to use computing technology in communications.	16	15	5	1	0	0	4.2	**4.2**
		43%	41%	14%	3%	0%	0%	84%	**84%**
13	Ability to use computing technology in engineering analysis/design.	18	12	7	0	0	0	4.3	**4.1**
		49%	32%	19%	0%	0%	0%	86%	**82%**

14	Ability to use state of the art techniques, and tools in engineering practice.	13	14	7	2	0	1	4.1	**3.8**
		35%	38%	19%	5%	0%	3%	82%	**76%**
15	Apply the knowledge of probability and statistics.	13	12	11	1	0	0	4	**3.4**
		35%	32%	30%	3%	0%	0%	80%	**68%**

Table2 Level of satisfaction for the learning Environment at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI
A. Quality of instruction and support for learning provided by the faculty members in:									
1	- Sciences (Mathematics, Physics, Chemistry)	12	5	13	4	3	0	3.5	**2.3**
		32%	14%	35%	11%	8%	0%	70%	**46%**
2	- Computers (Programming and usage of software packages)	12	10	11	3	1	0	3.8	**3**
		32%	27%	30%	8%	3%	0%	76%	**60%**
3	- Humanities and Social sciences	14	7	13	2	1	0	3.8	**2.8**
		38%	19%	35%	5%	3%	0%	76%	**56%**
4	- General Engineering	17	10	9	1	0	0	4.2	**3.6**
		46%	27%	24%	3%	0%	0%	84%	**72%**
5	- Engineering within major	20	8	9	0	0	0	4.3	**3.8**
		54%	22%	24%	0%	0%	0%	86%	**76%**
B. Quality of instruction and support for learning given by teaching assistants and engineers within major.		15	6	12	0	3	1	3.8	**2.9**
		41%	16%	32%	0%	8%	3%	76%	**58%**
C. Quality of advise by the staff with respect to:									
7	- Academic planning	10	10	14	3	0	0	3.7	**2.7**
		27%	27%	38%	8%	0%	0%	74%	**54%**
8	- Career planning	13	8	12	3	1	0	3.8	**2.8**
		35%	22%	32%	8%	3%	0%	76%	**56%**
D. Equity of treatment by:									
9	- Academic administrators	10	12	13	2	0	0	3.8	**3**
		27%	32%	35%	5%	0%	0%	76%	**60%**
10	- Faculty	12	12	11	0	2	0	3.9	**3.2**
		32%	32%	30%	0%	5%	0%	78%	**64%**
11	- Teaching assistants and engineers	13	10	13	1	0	0	3.9	**3.1**
		35%	27%	35%	3%	0%	0%	78%	**62%**
12	- Fellow students	13	10	13	1	0	0	3.9	**3.1**
		35%	27%	35%	3%	0%	0%	78%	**62%**
E. Quality of the facilities:									

13	- Classrooms	8	7	11	4	7	0	3.1	**2**
		22%	19%	30%	11%	19%	0%	62%	**40%**
14	- Science laboratories	7	11	12	2	5	0	3.4	**2.4**
		19%	30%	32%	5%	14%	0%	68%	**48%**
15	- Engineering Laboratories	9	8	13	2	5	0	3.4	**2.3**
		24%	22%	35%	5%	14%	0%	68%	**46%**
16	- Computing facilities	7	10	13	3	4	0	3.4	**2.3**
		19%	27%	35%	8%	11%	0%	68%	**46%**
17	- Libraries	11	9	12	0	4	1	3.6	**2.8**
		30%	24%	32%	0%	11%	3%	72%	**56%**

Table3 Assessment of the Support Services at Kuwait University

#	Item	5	4	3	2	1	0	Average	SI	3	2	1
A. Academic Services:												
1	Admissions/Registrar	11	15	3	5	2	1	3.8	**3.6**	15	16	6
		30%	41%	8%	14%	5%	3%	76%	**72%**	41%	43%	16%
2	Training office	12	12	9	1	1	2	3.9	**3.4**	13	17	7
		32%	32%	24%	3%	3%	5%	78%	**68%**	35%	46%	19%
3	Libraries	11	18	3	4	0	1	4	**4**	17	17	3
		30%	49%	8%	11%	0%	3%	80%	**80%**	46%	46%	8%
4	Bookstores	13	13	6	5	0	0	3.9	**3.5**	17	15	5
		35%	35%	16%	14%	0%	0%	78%	**70%**	46%	41%	14%
B. Administrative Offices:												
5	Students affairs office in your department	9	15	8	3	0	2	3.9	**3.4**	14	16	7
		24%	41%	22%	8%	0%	5%	78%	**68%**	38%	43%	19%
6	Administrative offices in the college	12	13	8	2	1	1	3.9	**3.5**	15	15	7
		32%	35%	22%	5%	3%	3%	78%	**70%**	41%	41%	19%
C. Other Services:												
7	Health services	10	12	8	1	1	5	3.9	**3.4**	11	16	10
		27%	32%	22%	3%	3%	14%	78%	**68%**	30%	43%	27%
8	Food services	12	12	12	1	0	0	3.9	**3.2**	16	18	3
		32%	32%	32%	3%	0%	0%	78%	**64%**	43%	49%	8%
9	Parking	4	10	2	6	15	0	2.5	**1.9**	22	13	2
		11%	27%	5%	16%	41%	0%	50%	**38%**	59%	35%	5%
10	Recreation and athletics	8	10	7	4	3	5	3.5	**2.8**	13	15	9
		22%	27%	19%	11%	8%	14%	70%	**56%**	35%	41%	24%
11	Others	9	5	5	1	0	17	4.1	**3.5**	11	9	11
		24%	14%	14%	3%	0%	46%	82%	**70%**	30%	24%	30%

* Open-ended questions (unedited student comments)

A. Please list some very important skills that you think you had learned in the engineering program.

To work in groups
Writing reports, and be familiar with the new softwares of petroleum engineering
Self learning
C++ , exal , powerpoint , pipesim
Group Work Presenting in front of many people Self Studying
presentation and communicating
Presentation skills, technical report writing skills, team-work
how to manage a team team work
be on time, be serious with learning and learn from my mistake.
how to work in team
work team skills
Writing reports
using Microsoft excel and power point.
my oral presentation skills was improved
I am well prepared for using engineering aspects to make the world a better place by knowing the problems that affects the globe and try to solve them.
Pipesim
Programming. Writing reports. Giving oral presentation. Thinking like an engineer.
Computers program Science
good presentation
Knowledge of petroleum engineering Problem solving skills
1. Learned to use many programs (excel-pipe sim-power point)
Computer programmer
team work , and hanling responsibilities

B. Please list some very important or useful skills that you did not get the chance (or are not available) to learn while taking engineering courses at Kuwait University.

Speaking lectures
I got all chance
nothing i could think of
time management exam preparation note taking revision techniques
time management review techniques study skills
Speaking lectures
oral presentation
Painting
More training cource More labs
programming , first aid kit
programming and coding
training

C. Please write down any comments or suggestions that you think will improve the engineering programs at Kuwait University (use additional sheets if necessary):

The professors should be familiar with the new teaching technologies
i really think that some courses weren't even needed for completing the engineering course as history of Kuwait or some other courses i would appreciate them if they weren't obligatory or necessary but they are ...which they dont belong in finishing the Engineering course and we already know the history of kuwait from high school so i dont see any real reason behind it
study skills programs that will help freshly graduated students (from high school) who entered the college, these programs should be taken at first semester and would help with the following : time management exam preparation note taking revision techniques organisation strategies
Professors should be familiar with the new teaching technologies
weekly presentation program for students
Provide more parking lots for the students and everyone will be happy.
No options
Better and more parking spaces.
More training cource More parking
More labs More training

APPENDIX D: Results and Analysis of Employers Assessment of the College of Engineering and Petroleum Graduates

March 2018

Employers Assessment of the College of Engineering and Petroleum Graduates

Introduction:

One of the main processes that is used to establish the Educational Objectives of the various programs of our College is to seek the input from companies and organizations that employ our graduates. In this regard and in accordance with the plan of the Office of Academic Assessment (OAA), an employer survey is conducted every four years. Since the beginning of this process, there have been five surveys:

The first employer survey:	February 2001
The second employer survey:	March 2005
The third employer survey:	January 2009
The fourth employer survey:	November 2012
The fifth employer survey:	October 2017

The objectives of conducting the survey are:

- To assess the quality of recent College of Engineering and Petroleum Graduates.
- To obtain feedback on the industry needs.
- To establish a continuous feedback channel between the College and the industry.
- To determine the relevance and attainment of the programs' educational objectives.

Note that the employer survey form of 2017 was modified by OAA in consultation with program assessment committees to fine tune the questionnaire items to be more directly related to the various Student Outcomes and Educational Objectives (see Appendix A: Employer Survey Form).

This report presents the 2017 College of Engineering and Petroleum Employer Survey results. The survey was commissioned by Vice Dean for Research and Academic Affairs (VDAA), and conducted and analyzed by the Office of Academic Assessment (OAA).

College Vision & Mission Statements:

Vision

To become the leading College of Engineering in the Middle East recognized for its outstanding education, research and outreach programs and for the quality, character and integrity of its graduates.

Mission

- To provide students with quality engineering education
- To advance and disseminate knowledge
- To lead the society in enhancing its welfare

College Educational Objectives (Goals):

- To create a dynamic academic environment where faculty, students and staff cooperate in preparing individuals for successful careers.
- To keep pace with scientific and technological progress in engineering, and to contribute to its advancement to address the immediate and long-term needs of the society.
- To provide outreach programs that meet continuing education and training needs of the country and the region.

ABET (2017-2018) Definitions:

Program Educational Objectives – Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.

Student Outcomes – Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program.

Preparation and Implementation of the Survey:

Formal letters were sent to all potential employers of College graduates in public, and private sectors, along with a bilingual employer survey form, to participate in the Survey. The Employers could also fill and submit the survey online (web address was given in the letter).

The letters were sent to various employers of graduates on October 2017. They were around 60 in number, which included ministries, oil companies, and other organizations. The employers were asked to distribute the survey form on chief engineers and supervisors that are most capable of assessing the College graduates. ***It was also specified that the assessment should only include students that had graduated from the College for the last five years or less.***

Table 1 shows the number of employers who responded according to each program.

Table 1: Number of Evaluators According to Program

Program	E1	E2
CE	68	48
ChE	73	62
CpE	38	17
EE	73	39
IMSE	36	20
ME	88	61
PE	25	22

E1 = Number of employers that supervise engineers from the specified program
E2 = Number of employers with majority of their engineering employees are from the specified program.

Results:

In the following tables and figures, the number of Employers who selected the "Can Not Evaluate (CNE)" or the unspecified columns, are not included into the Average calculations.

The first part of the survey addresses the Student Outcomes through fifteen fields covering the skills, abilities, and knowledge that the College of Engineering & Petroleum considers important for its graduates. Note that employers were asked to assess the College graduates based on these skills and knowledge, as well as their importance in their working environment.

The second part of the survey addresses the Program Educational Objectives and its importance to their company needs.

The third part of the survey questions asks the employers to list other knowledge they think the College graduates should acquire upon graduation, to specify the nature of training they provide to graduates in the first year of recruitment, and to compare College graduates with graduates from other universities.

Finally, the employers had a chance to express their opinion about the College and its graduates, pinpoint particular strengths, and to address the areas that need improvement (see the survey form in Appendix A).

Note that all data for the results are available in a database and an average rating of 60% is considered satisfactory (above "prepared"). These rate values are to be increased over time if we are to improve the quality of the programs. Our target for the average rating is to be greater than 75%.

The results of the employer survey obtained for the college as a whole are presented in the following section. The results obtained for each of the College programs are then given.

Tables 2, and 3 present both percentages and actual numbers for the fifteen skills, abilities, and knowledge (Student Outcomes) as well as regarding the Program Educational Objectives considered relevant to assess College graduates.

Average ratings are calculated as weighted averages for each item where the following weights are assigned: Not Prepared = Not Important = 1, Somewhat Prepared = Somewhat Important = 2, Prepared =I mportant = 3, Well Prepared = Very Important = 4, and Very Well Prepared = Extremely Important = 5. Therefore, an average rating above 3.0 (60%) may represent an overall positive evaluation. In addition, a graphical presentation is shown in Figure 1.

Employers' Assessment of Importance of Student Outcomes

The results obtained in Table 2 clearly indicate that employers view the following Student outcomes as very important and required in the work place (more than 80%):

- Apply mathematics, science and engineering knowledge 81 %
- Develop new or innovative ideas and work independently 83%
- Work in teams and develop leadership skills 87%
- Identify, formulate, and solve engineering problems 83%
- Understand professional and ethical responsibility 86%
- Communicate orally: informal and prepared talks 84%

- Communicate in writing: letters, technical reports, etc 84%
- Learn new skills and stay current technically and professionally 82%
- Recognize the need to engage in lifelong learning 81%
- Use techniques, skills and modern engineering tools 87%

About 73% to 86% of the employers have rated the above listed skills as either extremely or very important.

Further, Student Outcomes that are viewed as more than important by the employers (70%-80%) are:

- Design and conduct experiments 73%
- Design a system, component or process to meet desired needs 71%
- Function effectively in international and multicultural contexts 77%
- Understand impact of engineering solutions 77%
- Understand contemporary social, economic and cultural issues 70%

About 52 to 62% of the employers have rated these skills as more than important.

Employers' Assessment of graduates (Student Outcomes)

As for the employers' assessment of our graduates; the results show that the graduates are generally viewed as prepared (> 60%) in all areas. It appears that the employers think that our graduates are well prepared in all skills.

Employers' Assessment of Importance of the Educational Objectives

All Program Educational Objectives are viewed as more than important >77%:

- Contribution to Company / Workplace 87%
- Contribution to the well being of the society 84%
- Career Advancement 84%
- Degree Advancement and continuing education 77%
- Staying current in profession 84%
- Leadership Capabilities 86%

Employers' Assessment: Graduates level of Attainment of Educational Objectives

- Contribution to Company / Workplace 73%
- Contribution to the well being of the society 74%
- Career Advancement 75%
- Degree Advancement and continuing education 75%
- Staying current in profession 71%
- Leadership Capabilities 69%

Table 2: Employers Assessment of College Graduates' Skills, Abilities, and Knowledge

Assessment of graduates							Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared	Cant Evaluate		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.7	36	55	43	14	4	26	1. Apply mathematics, science and engineering knowledge	56	55	34	8	0	25	4.0
74%	24%	36%	28%	9%	3%	17%		37%	36%	22%	5%	0%	16%	81%
3.1	21	40	47	29	16	25	2. Develop new or innovative ideas and work independently	61	66	16	8	3	24	4.1
63%	14%	26%	31%	19%	10%	16%		40%	43%	10%	5%	2%	16%	83%
3.0	17	36	37	39	12	37	3. Design and conduct experiments	53	32	38	17	11	27	3.7
61%	12%	26%	26%	28%	9%	26%		35%	21%	25%	11%	7%	18%	73%
3.0	20	32	38	33	17	38	4. Design a system, component or process to meet desired needs	43	36	47	14	11	27	3.6
61%	14%	23%	27%	24%	12%	27%		28%	24%	31%	9%	7%	18%	71%
3.6	35	52	43	16	5	27	5. Work in teams and develop leadership skills	86	47	14	5	2	24	4.36
73%	23%	34%	28%	11%	3%	18%		56%	31%	9%	3%	1%	16%	87%
3.5	33	43	43	23	6	30	6. Identify, formulate, and solve engineering problems	62	58	25	5	2	26	4.1
70%	19%	24%	24%	13%	3%	17%		41%	38%	16%	3%	1%	17%	83%
3.5	32	47	47	15	8	29	7. Understand professional and ethical responsibility	80	51	17	3	3	24	4.31
71%	21%	32%	32%	10%	5%	19%		52%	33%	11%	2%	2%	16%	86%
3.3	24	49	38	30	8	29		68	53	26	3	3	25	4.2

67%	16%	33%	26%	20%	5%	19%	8 .Communicate orally: informal and prepared talks	44%	35%	17%	2%	2%	16%	84%
3.0	19	41	32	36	23	27	9. Communicate in writing: letters, technical reports, etc	73	54	17	5	4	25	4.2
60%	13%	27%	21%	24%	15%	18%		48%	35%	11%	3%	3%	16%	84%
3.1	21	34	45	31	13	34	10. Function effectively in international and multicultural contexts	53	40	46	9	4	26	3.8
63%	15%	24%	31%	22%	9%	24%		35%	26%	30%	6%	3%	17%	77%
3.2	27	27	47	35	8	34	11. Understand impact of engineering solutions	52	42	40	13	4	27	3.8
64%	19%	19%	33%	24%	6%	24%		34%	28%	26%	9%	3%	18%	77%
3.5	31	45	49	15	10	28	12. Learn new skills and stay current technically and professionally	61	61	24	6	2	24	4.1
70%	21%	30%	33%	10%	7%	19%		40%	40%	16%	4%	1%	16%	82%
3.2	23	40	44	23	17	31	13. Recognize the need to engage in lifelong learning	54	60	30	5	2	27	4.1
64%	16%	27%	30%	16%	12%	21%		36%	40%	20%	3%	1%	18%	81%
3.1	22	31	45	33	12	35	14. Understand contemporary social, economic and cultural issues	33	51	35	21	9	29	3.5
63%	15%	22%	31%	23%	8%	24%		22%	34%	23%	14%	6%	19%	70%
3.8	53	42	36	16	4	27	15. Use techniques, skills and modern engineering tools	84	44	23	2	2	23	4.3
76%	35%	28%	24%	11%	3%	18%		54%	28%	15%	1%	1%	15%	87%

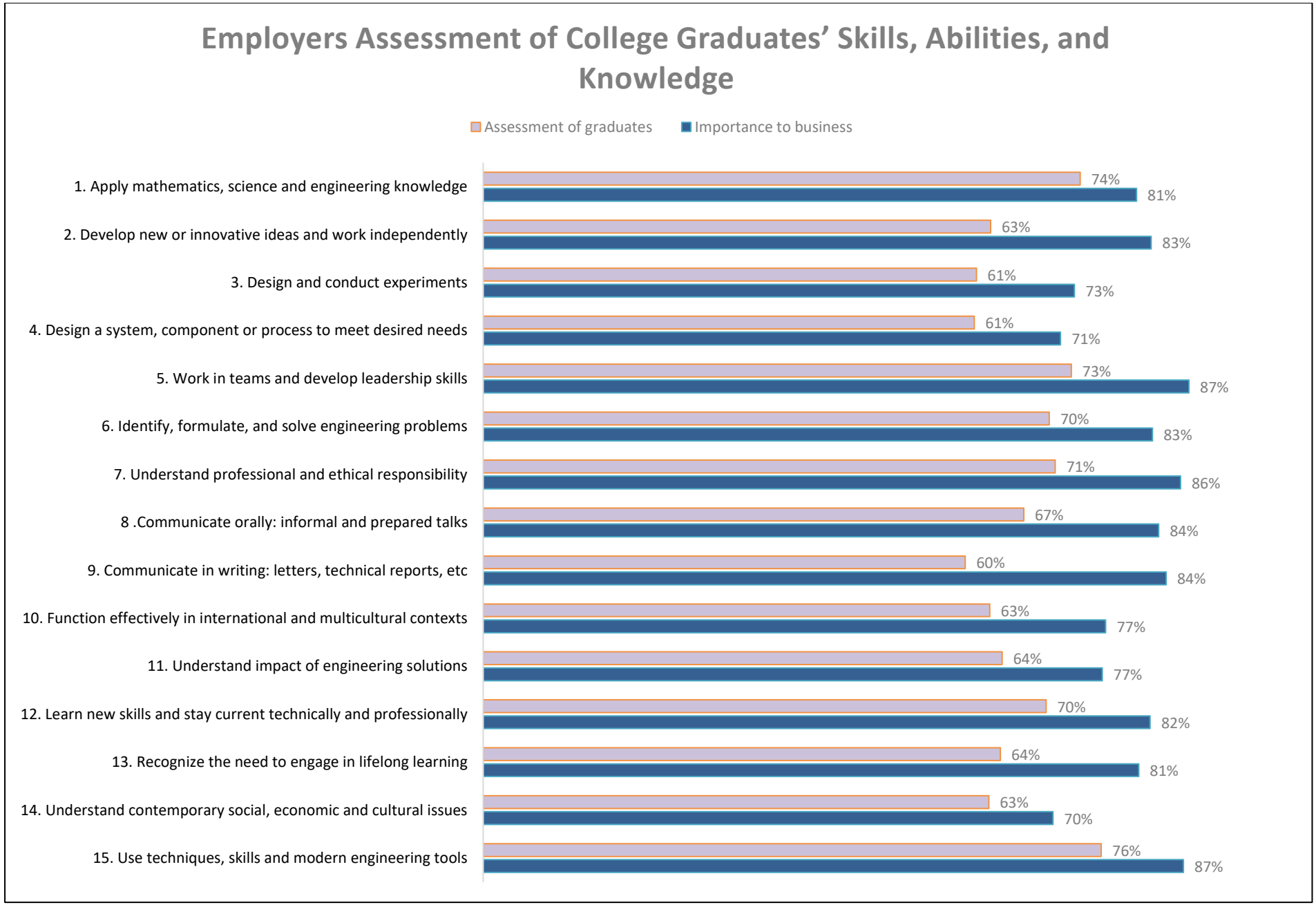

Figure 1: Employers Assessment of College Graduates' Skills, Abilities, and Knowledge.

Table 3: Employers Assessment of Educational Objectives

Level of Attainment					Knowledge	Importance to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory	Not Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
2.9	33	92	31	8	1. Contribution to Company / Workplace	95	43	19	3	4	14	4.4
73%	20%	56%	19%	5%		58%	26%	12%	2%	2%	9%	87%
2.9	32	91	27	7	2. Contribution to the well being of the society	75	55	23	4	3	18	4.2
74%	20%	58%	17%	4%		47%	34%	14%	3%	2%	11%	84%
3.0	35	91	26	6	3. Career Advancement	69	60	29	5	0	15	4.2
75%	22%	58%	16%	4%		42%	37%	18%	3%	0%	9%	84%
3.0	37	84	34	3	4. Degree Advancement and continuing education	60	50	37	13	6	12	3.9
75%	23%	53%	22%	2%		36%	30%	22%	8%	4%	7%	77%
2.9	35	75	40	9	5. Staying current in profession	65	69	26	3	0	15	4.2
71%	22%	47%	25%	6%		40%	42%	16%	2%	0%	9%	84%
2.8	29	65	52	7	6.Leadership Capabilities	82	50	24	2	2	18	4.3
69%	19%	42%	34%	5%		51%	31%	15%	1%	1%	11%	86%

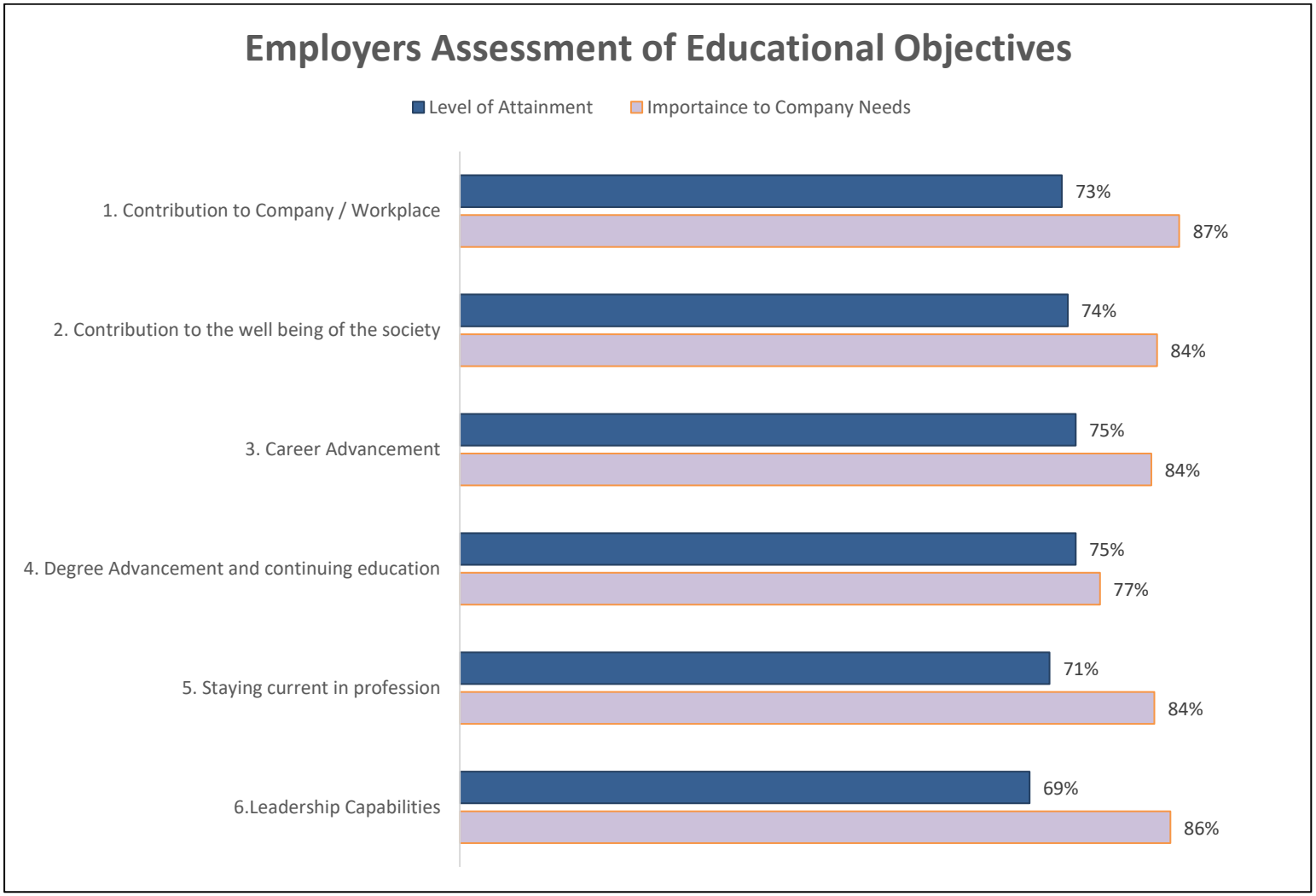

Figure 2: Employers Assessment of Educational Objectives

Employers' Comments & Suggestions

Knowledge of most importance when employing graduates.

Most employers have identified the following as most important when employing graduates:

- English (writing & reading) Presentation skills Project Management
- computer skills
- Working as a team, and having problem solving skills
- Administrative and leadership skills
- Decision-making skills
- Time management

On Job Training

Around 84% of employers provide additional training to College graduates in the first year of recruitment. This additional training focuses mostly on:

- On Job Training on topics related to equipment and devices used in the company.
- Training related to safety, plant processes and current technical problems Time management
- Maintenance and operation of equipment and systems
- management skills
- Project management
- Communication skills

Figure 3 presents the employers assessment of College graduates as compared to graduates from other universities. About 24% of employers have evaluated College graduates as being much better; and 28% as somewhat better than graduates of other universities. Around 38% of employers evaluated them as being about the same. It is worth noting that only 11% evaluated our graduates has not being as good.

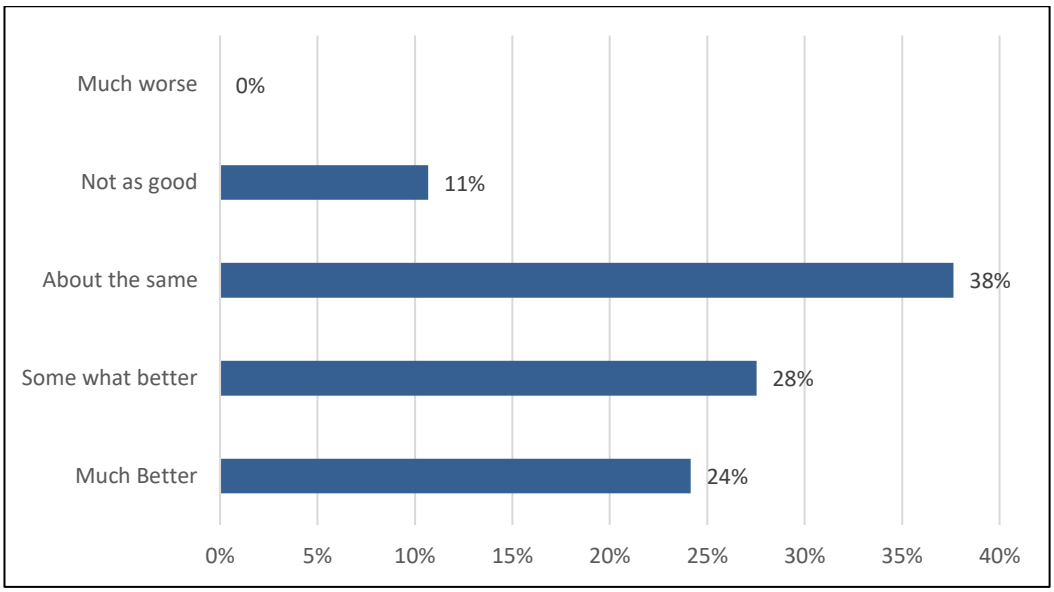

Figure 3: College graduates compared to graduates from other universities

Employers' opinions about the strengths College graduates posses
Employers identified the following as the strengths our graduates possess:

- Basic technical knowledge
- Good theoretical background
- Ability and willingness to learn new skills
- Knowledge of Local Working Environment
- Enthusiasm and commitment
- Self confidence
- Team Work
- Computer Skills
- Familiar with local regulations
- competitive hardworking like to challenge

Employers' opinions about the areas that need to be further improved by the College
Employers indicated a desire to see more emphasis on the following skills:

- The need and importance of English language proficiency
- More field training
- Technical report writing
- Communication skills
- On job training.

The responses are analyzed based on the engineering disciplines evaluated and separate reports are presented in the appendices for each program. The responses to the open ended sections of the survey are also presented in the appendices. It is expected that each program will analyze and interpret the responses, and draw necessary conclusions in due time.

Employer Survey Form

Kuwait University

College of Engineering & Petroleum

Office of Academic Assessment

Employer Assessment of Engineering Graduates

P.O. Box 5969, Safat 13060, Kuwait http://www.eng.kuniv.edu/oaa/ *Tel: 2498-3331, Fax: 24811772*

The College of Engineering and Petroleum at Kuwait University aims to improve the quality of its educational programs. As a major stakeholder in our college, we seek your assessment on how we have been serving your needs in terms of the quality of our graduates. Thank you for your cooperation and support. ***Please note that this survey is recommended to be completed online*** at **http://www.eng.kuniv.edu/oaa/employer/** , then you can printed for your records.

Name: _____

Company/Organization: _____

Department/Division: _____ Position: _____

Years in position: _____ E-mail:_____

Tel: _____ Fax: _____

- Which ONE of the following best describes your organization as a whole?

  ☐ Government

  ☐ Private Company

  ☐ Other (please specify) _____

- Job nature of engineering staff (List all that apply):
  (e.g. design, programming, maintenance, procurement, etc): _____

  _____

- Majors of Engineers being evaluated (Choose all that apply):

☐ Civil ☐ Chemical ☐ Computer ☐ Electrical

☐ Petroleum ☐ Mechanical ☐ Industrial & Management Systems

- Engineers to be evaluated are mainly from _____ discipline (Choose 2 maximum).

☐ Civil ☐ Chemical ☐ Computer ☐ Electrical

☐ Petroleum ☐ Mechanical ☐ Industrial & Management Systems

- Number of engineers employed in your company (if known): _____
- Percentage of Kuwait University graduates (if known): _____

Please:

First: rate the following skills, abilities and knowledge in terms of the level of preparedness of recent Kuwait University engineering graduates.

***Second*:** rate each item according to its importance to your business and operations.

Very well prepared	*Well prepared*	*Prepared*	*Somewhat prepared*	*Not prepared*	*Can't evaluate*	***Skills, abilities, and knowledge***	*Extremely important*	*Very important*	*Important*	*Somewhat important*	*Not important*
☐	☐	☐	☐	☐	☐	1. Apply mathematics, science and engineering knowledge	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	2. Develop new or innovative ideas and work independently	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	3. Design and conduct experiments, analyze and interpret data	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	4. Design a system, component or process to meet desired needs	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	5. Work in teams and develop leadership skills	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	6. Identify, formulate, and solve engineering problems	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	7. Understand professional and ethical responsibility	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	8. Communicate orally: informal and prepared talks	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	9. Communicate in writing: letters, technical reports, etc.	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	10. Function effectively in international and multicultural contexts	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	11. Understand impact of engineering solutions in a global/societal context	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	12. Learn new skills and stay current technically and professionally	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	13. Recognize the need to engage in lifelong learning	☐	☐	☐	☐	☐

☐	☐	☐	☐	☐	☐	14. Understand contemporary social, economic and cultural issues	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	15. Use techniques, skills and modern engineering tools necessary for professional practice (Computer, Internet, Engineering software, etc.)	☐	☐	☐	☐	☐

Please evaluate/rate the following engineering programs objectives according to:

- How important they are to your company needs
- The level of attainment of our graduates.

Level of Attainment					***Importance to business***				
Significant	*Satisfactory*	*Somewhat*	*Not satisfactory*	***Objectives***	*Extremely important*	*Very important*	*Important*	*Somewhat important*	*Not important*
☐	☐	☐	☐	1. Contribution to company/workplace (Improve product/service quality, increase productivity, increase revenues, reduce expenses, improve customer satisfaction)	☐	☐	☐	☐	☐
☐	☐	☐	☐	2. Contribution to well being of society and the environment (Safeguard the interest of society, improve economy, develop professional standards and best practices, safeguard and improve the environment)	☐	☐	☐	☐	☐
☐	☐	☐	☐	3. Career advancement (Promotion to higher ranks/positions, increased responsibilities)	☐	☐	☐	☐	☐
☐	☐	☐	☐	4. Degree advancement and continuing education. (Diplomas, formal course work, graduate courses, graduate degree, certificates)	☐	☐	☐	☐	☐
☐	☐	☐	☐	5. Staying current in profession (Participation in seminars and conferences, professional development courses and activities)	☐	☐	☐	☐	☐
☐	☐	☐	☐	6. Use of leadership Capabilities	☐	☐	☐	☐	☐

- Are there other skills, abilities, or knowledge you regard as being important when employing recent graduates?
  Please outline these below.

_____
_____
_____
_____
_____

_____
_____
_____

- Have you find it necessary to provide training to the graduates during the first year of their employment in your organization? ☐ Yes ☐ No

- If **yes**, Please specify.

_____
_____
_____
_____

- How do Kuwait University graduates compare with graduates from other universities?

☐ Much better ☐ Somewhat better ☐ About the same

☐ Not as good ☐ Much worse

- What particular strengths do you perceive Kuwait University engineering graduates possess?

_____
_____
_____
_____

- In what areas should Kuwait University improve its preparation of engineering graduates for employment?

_____
_____
_____
_____

- Would you be interested in receiving a summary report on the College of Engineering Employer Survey of 2012?

☐ Yes ☐ No

- Would you be interested in participating at a luncheon briefing with other employers and faculty staff on the results of the College of Engineering Employer Survey of 2012?

☐ Yes ☐ No

Thank you for completing this survey.

Your feedback will be used to improve the preparation of

College of Engineering and Petroleum graduates for employment.

Employers Assessment of Chemical Engineering Program Graduates

Chemical Engineering Vision & Mission

Vision

The Chemical Engineering Department strives for regional and international recognition in teaching, research and community service. It enriches the standard of engineering education, continually enhances the quality and competence of graduated students, and stimulates outstanding research activities that contribute to the advancement of the chemical engineering profession and the development of local and regional industry.

Mission

The Chemical Engineering Department produces chemical engineers capable of meeting the technological and societal needs of Kuwait and the Gulf region. This mission is fulfilled by providing a broad curriculum in the basic sciences, process systems and design, unit operations, and in modem experimental and computing techniques. The program strives for academic excellence through continual assessment of the outcomes. The focus is on petroleum and petrochemical technology, environmental engineering, and water technology.

Chemical Engineering Educational Objectives & Student Outcomes

Educational Objectives:

Graduates of the Undergraduate Program in Chemical Engineering will

4. be productive in their chosen careers in the public and private sectors; especially in the fields of oil refining, petrochemicals, and water;
5. advance in responsibility and leadership in their careers and engage in ongoing professional development by successfully pursuing graduate studies and/or other learning activities; and
6. contribute to the welfare of society by directing their skills and technical expertise toward addressing the needs of the community and the environment

Student Outcomes

The Chemical Engineering Program provides an integrated curriculum enabling students to develop skills and attitudes that are essential to their future successful career. The Program will ensure that its engineers can demonstrate the following capabilities:

- Apply basic mathematics and science to solve engineering problems.
- Design and conduct laboratory experiments, and interpret results.
- Design and analyze chemical processes.
- Participate effectively in teamwork.
- Identify, formulate and solve engineering problems.
- Recognize and conform to highest professional and ethical standards.
- Communicate effectively in oral and written form.
- Recognize the impact of engineering solutions on the society and the environment.
- Recognize the need for life-long learning.
- Awareness of contemporary social, economic and political issues.
- Proficiency in utilizing modern engineering tools.
- Competence in tackling chemical/process engineering problems that are important to Kuwait and regional industries.

Table 4: Employers Assessment of Chemical Enginering Graduates' Skills, Abilities, and Knowledge

Assessment of graduates							Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared	Cant Evaluate		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.66	13	24	15	3	4	14	1. Apply mathematics, science and engineering knowledge	21	25	16	4	0	7	3.95
73%	22%	41%	25%	5%	7%	24%		32%	38%	24%	6%	0%	11%	79%
3.50	9	14	17	8		14	2. Develop new or innovative ideas and work independently	25	30	7	3	2	6	4.09
70%	19%	29%	35%	17%	0%	29%		37%	45%	10%	4%	3%	9%	82%
2.96	9	10	12	12	9	21	3. Design and conduct experiments	20	13	15	10	7	8	3.45
59%	17%	19%	23%	23%	17%	40%		31%	20%	23%	15%	11%	12%	69%
3.07	10	12	14	8	10	19	4. Design a system, component or process to meet desired needs	19	17	17	8	4	8	3.60
61%	19%	22%	26%	15%	19%	35%		29%	26%	26%	12%	6%	12%	72%
3.58	13	20	16	8	2	14	5. Work in teams and develop leadership skills	37	14	9	5	1	7	4.23
72%	22%	34%	27%	14%	3%	24%		56%	21%	14%	8%	2%	11%	85%
3.34	14	14	14	12	5	14	6. Identify, formulate, and solve engineering problems	28	22	9	5	2	7	4.05
67%	24%	24%	24%	20%	8%	24%		42%	33%	14%	8%	3%	11%	81%
3.50	14	13	22	6	3	15	7. Understand professional and ethical responsibility	31	21	11	1	2	7	4.18
70%	24%	22%	38%	10%	5%	26%		47%	32%	17%	2%	3%	11%	84%
3.42	10	20	14	10	3	16		29	23	11	0	2	8	4.18

68%	18%	35%	25%	18%	5%	28%	8 .Communicate orally: informal and prepared talks	45%	35%	17%	0%	3%	12%	84%
3.03	9	18	9	12	11	14	9. Communicate in writing: letters, technical reports, etc	32	23	7	2	1	8	4.28
61%	15%	31%	15%	20%	19%	24%		49%	35%	11%	3%	2%	12%	86%
3.23	12	11	16	14	4	16	10. Function effectively in international and multicultural contexts	25	21	13	4	3	7	3.92
65%	21%	19%	28%	25%	7%	28%		38%	32%	20%	6%	5%	11%	78%
3.21	14	9	13	19	3	15	11. Understand impact of engineering solutions	24	24	11	6	1	7	3.97
64%	24%	16%	22%	33%	5%	26%		36%	36%	17%	9%	2%	11%	79%
3.38	15	13	16	7	7	15	12. Learn new skills and stay current technically and professionally	25	21	13	4	3	7	3.92
68%	26%	22%	28%	12%	12%	26%		38%	32%	20%	6%	5%	11%	78%
3.05	10	12	16	9	10	16	13. Recognize the need to engage in lifelong learning	20	30	11	2	1	9	4.03
61%	18%	21%	28%	16%	18%	28%		31%	47%	17%	3%	2%	14%	81%
2.91	7	8	19	17	5	17	14. Understand contemporary social, economic and cultural issues	8	27	14	10	4	10	3.40
58%	13%	14%	34%	30%	9%	30%		13%	43%	22%	16%	6%	16%	68%
3.73	20	15	15	6	3	14	15. Use techniques, skills and modern engineering tools	36	17	12	0	1	7	4.32
75%	34%	25%	25%	10%	5%	24%		55%	26%	18%	0%	2%	11%	86%

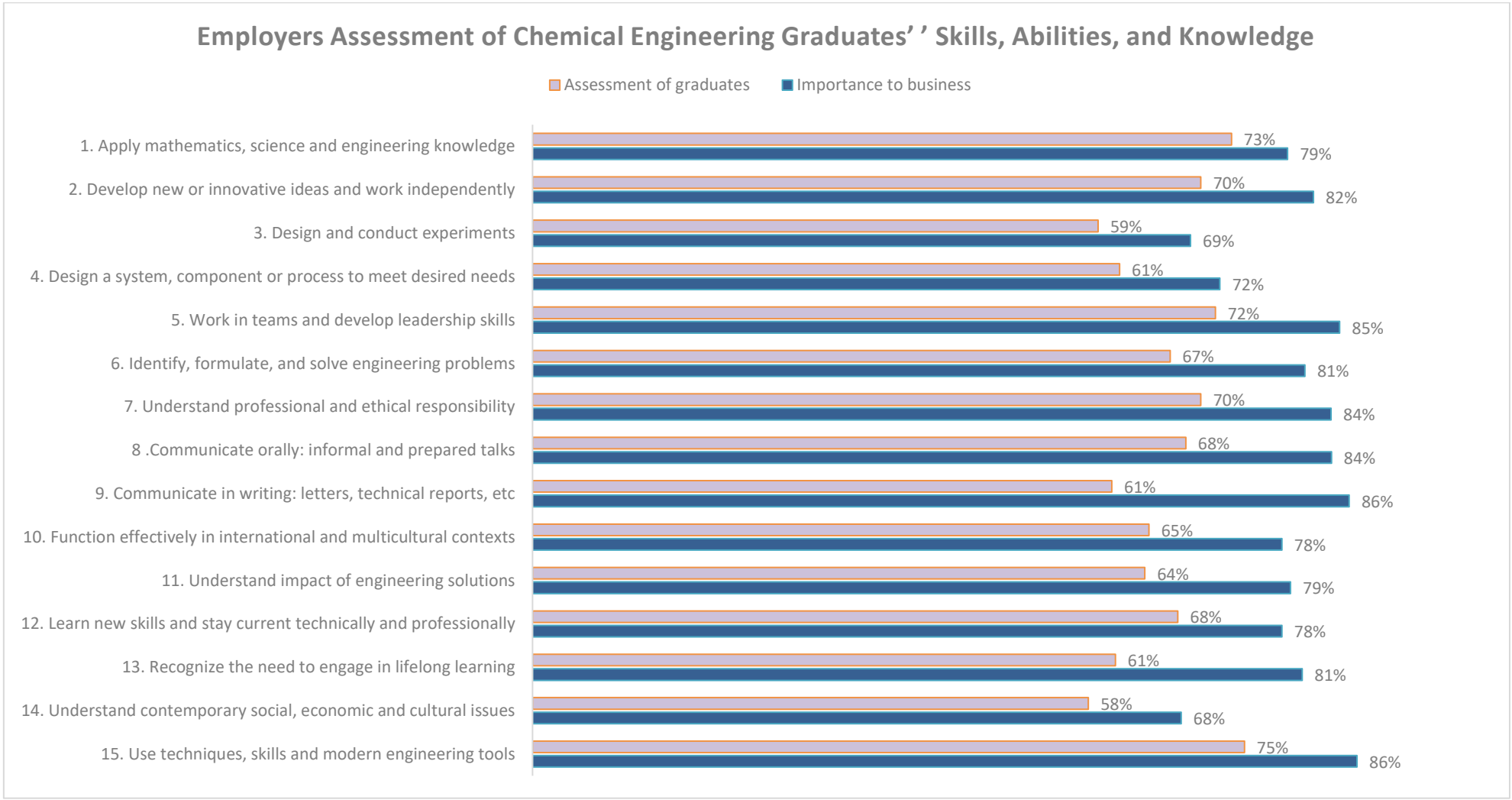

Figure 4: Employers Assessment of Chemical Engineering Graduates' Skills, Abilities, and Attribut

Table 5 : Employers Assessment of Chemical Engineering Program Educational Objectives

Level of Attainment					Knowledge	Importance to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory	Not Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
2.8	10	38	13	5	1. Contribution to Company / Workplace	44	24	3	1	0	1	4.5
70%	15%	58%	20%	8%		61%	33%	4%	1%	0%	1%	91%
2.9	13	37	10	4	2. Contribution to the well being of the society	32	30	4	1	1	5	4.3
73%	20%	58%	16%	6%		47%	44%	6%	1%	1%	7%	87%
3.0	15	37	10	3	3. Career Advancement	31	29	8	1	0	4	4.3
75%	23%	57%	15%	5%		45%	42%	12%	1%	0%	6%	86%
2.9	11	37	17	1	4. Degree Advancement and continuing education	24	23	16	7	2	2	3.8
72%	17%	56%	26%	2%		33%	32%	22%	10%	3%	3%	77%
2.8	12	30	19	3	5. Staying current in profession	25	41	5	0	0	2	4.3
70%	19%	47%	30%	5%		35%	58%	7%	0%	0%	3%	86%
2.7	8	30	20	3	6.Leadership Capabilities	32	27	9	0	0	5	4.3
68%	13%	49%	33%	5%		47%	40%	13%	0%	0%	7%	87%

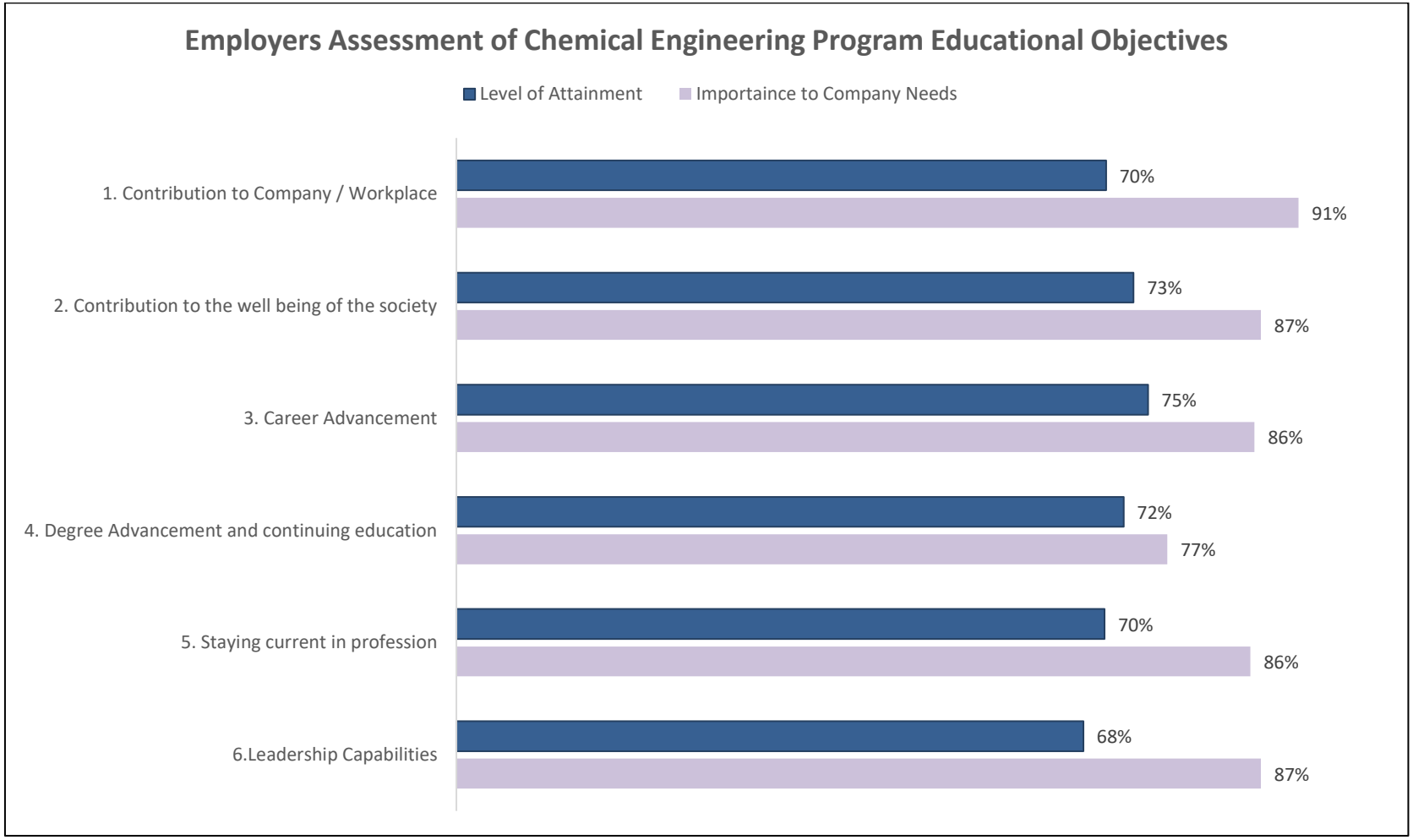

Figure 5: Employers Assessment of Chemical Engineering Program Educational Objectives

Employers Assessment of Civil Engineering Program Graduates

Civil Engineering Vision & Mission

The mission and vision of the Civil Engineering Department are consistent with that of Kuwait University. They have been developed with input from all constituencies (e.g. faculty, students and employers).

Vision

The vision of the CE program is to establish an outstanding program of regional and international reputation for providing a quality engineering education, excellent research and services to the profession and the community; to produce top-quality civil engineers; and to employ principles of continual quality improvement to enhance its program.

Mission

The mission of the CE program is to serve the people of the State of Kuwait by providing a broad and high-quality education to its students for a successful professional career, to conduct strong basic and applied research for national needs, and to serve the industry, civil engineering profession, and community at large through innovative solutions, dissemination of knowledge, and advancement of civil engineering in major areas of the profession.

Civil Engineering Educational Objectives & Student Outcomes

Educational Objectives:

The graduates of the CE program will:

4. Engage in productive careers in a broad range of civil engineering areas in public and private sectors in Kuwait, or successfully pursue advanced studies and careers in academia or in other research environments;
5. Advance in responsibility and leadership in their careers and engage in continuous professional development to respond to rapidly evolving technological and social challenges; and
6. Contribute to the welfare of the society and the development of the profession through responsible practice of engineering and involvement in professional organizations.

Student Outcomes

Graduates of the Civil Engineering program shall demonstrate:

1. An ability to apply fundamentals of mathematics, science, and engineering in modeling and analyzing engineering systems.
2. An ability to design and conduct laboratory experiments, and analyze and interpret experimental data.
3. An ability to design a system, component, or process to meet desired needs in recognized major civil engineering areas.
4. An ability to function as effective members or leaders in teams.
5. An ability to identify, formulate and solve engineering problems.
6. An ability to identify and analyze ethical issues when they arise, and respond according to the codes of ethics of the profession.
7. An ability to communicate effectively in oral and written form.

8. The broad education necessary to be aware of the impact of engineering solutions on safety, health, welfare and the well-being of the society and the environment.
9. An ability to acquire new knowledge independently and recognition of life-long learning as a necessity for progress in the profession.
10. An awareness of emerging technologies in local and global context, and involvement in discussions of contemporary issues related to society.
11. An ability to utilize state-of-the-art hardware and software tools for problem solving and design that are necessary for engineering practice.
12. A proficiency in design at the entry level and recognition of professional practice issues in recognized major areas of civil engineering.

Table 6: Employers Assessment of Civil Enginering Graduates' Skills, Abilities, and Knowledge

Assessment of graduates							Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared	Cant Evaluate		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.7	13	21	18	6	0	10	1. Apply mathematics, science and engineering knowledge	16	27	10	3	0	12	4.0
74%	22%	36%	31%	10%	0%	17%		29%	48%	18%	5%	0%	21%	80%
3.2	8	15	19	13	3	10	2. Develop new or innovative ideas and work independently	17	25	5	7	1	13	3.9
64%	14%	26%	33%	22%	5%	17%		31%	45%	9%	13%	2%	24%	78%
2.9	5	11	15	16	4	17	3. Design and conduct experiments	14	11	17	5	8	13	3.3
59%	10%	22%	29%	31%	8%	33%		25%	20%	31%	9%	15%	24%	67%
3.1	7	12	16	9	7	17	4. Design a system, component or process to meet desired needs	12	13	19	3	8	13	3.3
61%	14%	24%	31%	18%	14%	33%		22%	24%	35%	5%	15%	24%	67%
3.6	14	20	12	10	1	11	5. Work in teams and develop leadership skills	24	21	9	2	1	11	4.1
73%	25%	35%	21%	18%	2%	19%		42%	37%	16%	4%	2%	19%	83%
3.4	12	16	14	13	2	11	6. Identify, formulate, and solve engineering problems	17	21	14	2	1	13	3.9
68%	21%	28%	25%	23%	4%	19%		31%	38%	25%	4%	2%	24%	79%
3.6	14	19	15	5	4	11	7. Understand professional and ethical responsibility	20	25	6	3	2	12	4.0
72%	25%	33%	26%	9%	7%	19%		36%	45%	11%	5%	4%	21%	81%
3.2	8	19	13	11	6	11		21	16	15	2	2	12	3.9

64%	14%	33%	23%	19%	11%	19%	8 .Communicate orally: informal and prepared talks	38%	29%	27%	4%	4%	21%	79%
2.8	7	15	12	8	15	11	9. Communicate in writing: letters, technical reports, etc	19	20	9	4	3	13	3.9
57%	12%	26%	21%	14%	26%	19%		35%	36%	16%	7%	5%	24%	77%
3.0	6	15	13	11	7	16	10. Function effectively in international and multicultural contexts	13	16	21	1	3	14	3.6
61%	12%	29%	25%	21%	13%	31%		24%	30%	39%	2%	6%	26%	73%
3.3	12	11	16	11	5	14	11. Understand impact of engineering solutions	16	13	17	7	2	13	3.6
65%	22%	20%	29%	20%	9%	25%		29%	24%	31%	13%	4%	24%	72%
3.37	12	15	19	4	7	11	12. Learn new skills and stay current technically and professionally	19	23	9	4	1	12	4.0
67%	21%	26%	33%	7%	12%	19%		34%	41%	16%	7%	2%	21%	80%
3.1	7	16	16	5	9	15	13. Recognize the need to engage in lifelong learning	17	21	12	3	1	14	3.9
63%	13%	30%	30%	9%	17%	28%		31%	39%	22%	6%	2%	26%	79%
3.1	11	10	14	14	5	14	14. Understand contemporary social, economic and cultural issues	10	17	13	9	4	15	3.4
63%	20%	19%	26%	26%	9%	26%		19%	32%	25%	17%	8%	28%	68%
3.8	22	13	12	8	2	11	15. Use techniques, skills and modern engineering tools	21	23	11	1	1	11	4.1
76%	39%	23%	21%	14%	4%	19%		37%	40%	19%	2%	2%	19%	82%

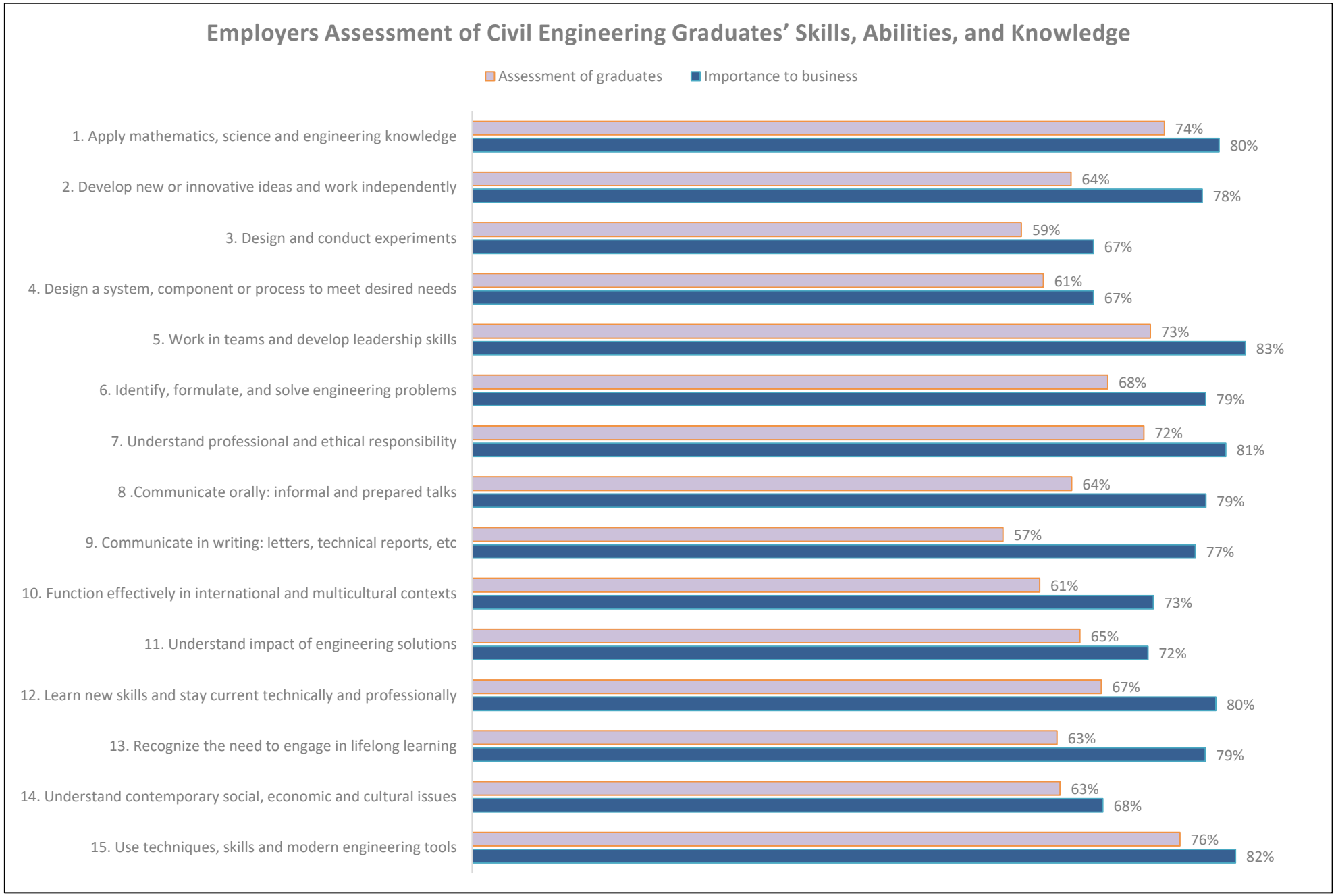

Figure 6 : Employers Assessment of Civil Engineering Graduates' Skills, Abilities, and Attribut

Table 7 : Employers Assessment of Civil Engineering Program Educational Objectives

Level of Attainment					Knowledge	Importance to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory	Not Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
2.8	8	34	18	1	1. Contribution to Company / Workplace	22	23	11	2	4	6	3.9
70%	13%	56%	30%	2%		35%	37%	18%	3%	6%	10%	78%
2.8	8	36	13	4	2. Contribution to the well being of the society	20	21	15	3	3	6	3.8
70%	13%	59%	21%	7%		32%	34%	24%	5%	5%	10%	77%
3.0	13	35	10	3	3. Career Advancement	14	24	19	5	0	6	3.8
74%	21%	57%	16%	5%		23%	39%	31%	8%	0%	10%	75%
3.0	15	32	12	1	4. Degree Advancement and continuing education	22	21	16	3	3	3	3.9
75%	25%	53%	20%	2%		34%	32%	25%	5%	5%	5%	77%
2.8	13	27	19	3	5. Staying current in profession	25	22	12	3	0	6	4.1
70%	21%	44%	31%	5%		40%	35%	19%	5%	0%	10%	82%
2.6	8	25	23	4	6.Leadership Capabilities	25	21	12	2	2	6	4.0
65%	13%	42%	38%	7%		40%	34%	19%	3%	3%	10%	81%

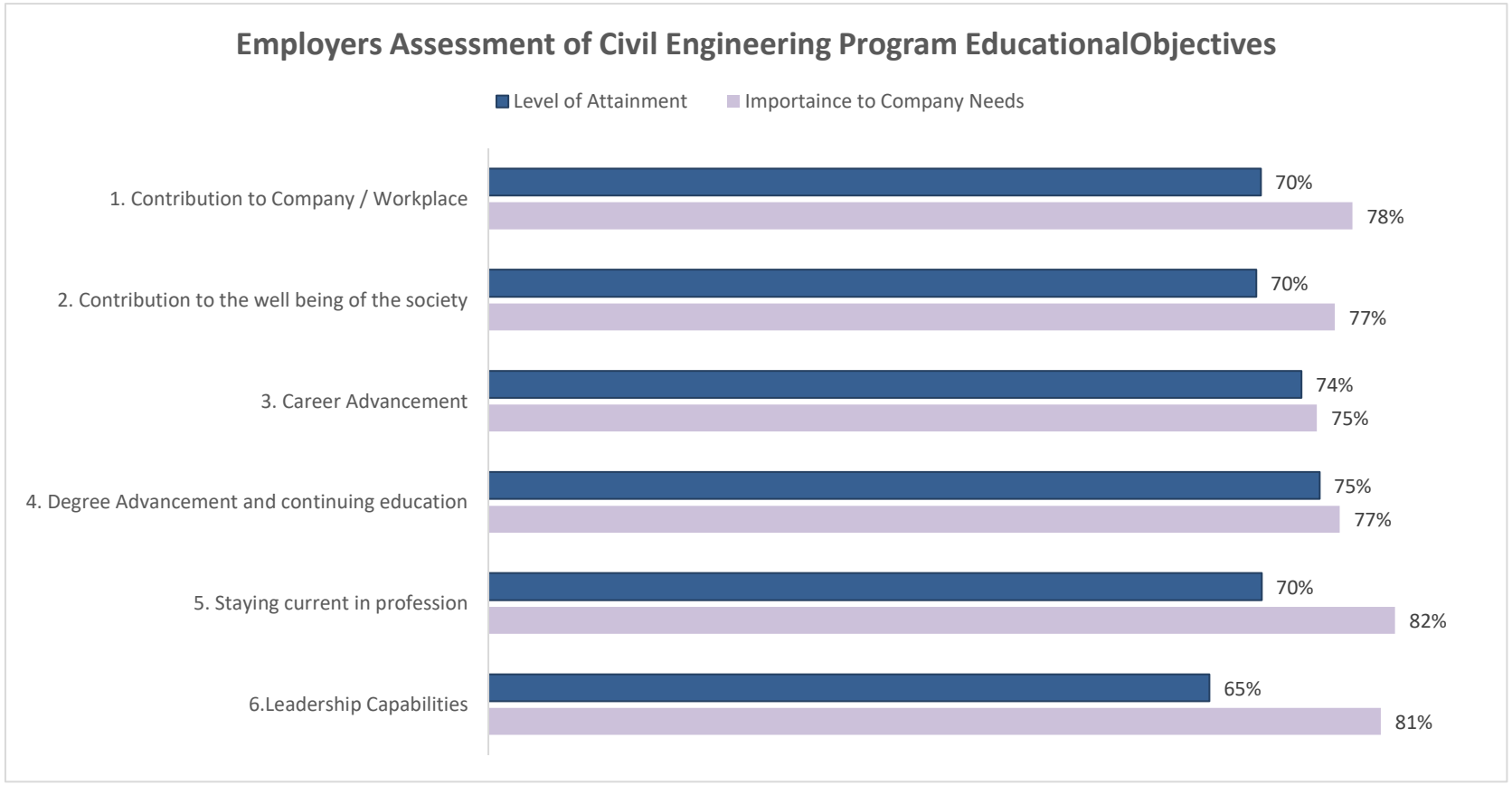

Figure 7: Employers Assessment of Civil Engineering Program Educational Objectives

Employers Assessment of Computer Engineering Program Graduates

Computer Engineering Vision & Mission

Vision

The vision of computer engineering department is to be recognized regionally and internationally as a provider of high-quality undergraduate and graduate education that emphasizes scholastic excellence, practical skills, and professional competency to become leaders in exploring new frontiers in computing. In addition, our vision is to conduct state-of-the-art research and deliver community services.

Mission

The mission of the undergraduate program in computer engineering is to foster excellence in computing by

- Providing a high quality, accredited educational experience that prepares students for success in engineering practice and advanced studies.
- Serving the academic, professional, and business computing communities in the State of Kuwait.
- Creating, expanding and disseminating knowledge through scholarly activities.

Computer Engineering Educational Objectives & Student Outcomes

Educational Objectives:

Our Computer Engineering Program Educational Objectives have been established to highlight the areas of student achievement that will satisfy constituent's needs, both now and in the future, and fulfill the program's mission.

Educational objectives of the undergraduate computer engineering program at Kuwait University are to produce graduates who will be:

4. Practitioners of computer engineering with productive careers in computing professions in public and private organizations, and academia.
5. Engaged in professional development and learning activities by pursuing advanced studies or training in engineering or other disciplines.
6. Contributors to the welfare of society, and the development of their business and professional environments.

Student Outcomes

Graduates of the Computer Engineering Program shall have the knowledge and skills described below:

o. An ability to apply knowledge of mathematics, science, and engineering.
p. An ability to design and conduct experiments as well as analyze and interpret data.
q. An ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
r. An ability to function on multi-disciplinary teams.
s. An ability to identify, formulate, and solve engineering problems.
t. An understanding of professional and ethical responsibility.
u. An ability to communicate effectively in oral and written form.

v. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
w. Recognition of the need for, and an ability to engage in life-long learning.
x. Knowledge of contemporary issues.
y. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
z. Knowledge of probability and statistics, including their applications to computer engineering.
aa. A knowledge of mathematics through differential and integral calculus, and basic, computer, and engineering sciences, necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components, as appropriate to computer engineering.
bb. Knowledge of discrete mathematics.

Table 8: Employers Assessment of Computer Enginering Graduates' Skills, Abilities, and Knowledge

Assessment of graduates							Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared	Cant Evaluate		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.8	9	11	8	3	0	7	1. Apply mathematics, science and engineering knowledge	9	15	5	0	0	9	4.1
77%	29%	35%	26%	10%	0%	23%		31%	52%	17%	0%	0%	31%	83%
3.3	3	13	9	5	2	6	2. Develop new or innovative ideas and work independently	10	13	2	4	1	8	3.9
66%	9%	41%	28%	16%	6%	19%		33%	43%	7%	13%	3%	27%	78%
3.2	2	11	9	6	2	9	3. Design and conduct experiments	10	7	9	1	2	9	3.8
63%	7%	37%	30%	20%	7%	30%		34%	24%	31%	3%	7%	31%	75%
3.1	4	7	11	6	3	7	4. Design a system, component or process to meet desired needs	8	7	11	1	3	8	3.5
62%	13%	23%	35%	19%	10%	23%		27%	23%	37%	3%	10%	27%	71%
3.8	8	13	5	5	0	7	5. Work in teams and develop leadership skills	11	14	3	2	1	7	4.0
75%	26%	42%	16%	16%	0%	23%		35%	45%	10%	6%	3%	23%	81%
3.7	7	10	10	2	1	8	6. Identify, formulate, and solve engineering problems	8	15	4	2	0	9	4.0
73%	23%	33%	33%	7%	3%	27%		28%	52%	14%	7%	0%	31%	80%
3.9	10	11	8	2	0	7	7. Understand professional and ethical responsibility	16	9	2	1	2	8	4.2
79%	32%	35%	26%	6%	0%	23%		53%	5%	1%	1%	1%	4%	84%

3.5	7	12	4	6	2	7	8 .Communicate orally: informal and prepared talks	12	10	6	0	2	8	4.0
70%	23%	39%	13%	19%	6%	23%		40%	33%	20%	0%	7%	27%	80%
3.3	7	8	8	6	3	6	9. Communicate in writing: letters, technical reports, etc	8	12	6	2	2	8	3.7
66%	22%	25%	25%	19%	9%	19%		27%	40%	20%	7%	7%	27%	75%
3.5	4	8	13	3	0	10	10. Function effectively in international and multicultural contexts	10	7	8	0	2	11	3.9
69%	14%	29%	46%	11%	0%	36%		37%	26%	30%	0%	7%	41%	77%
3.2	5	7	10	5	3	8	11. Understand impact of engineering solutions	9	6	10	3	2	8	3.6
64%	17%	23%	33%	17%	10%	27%		30%	20%	33%	10%	7%	27%	71%
3.68	6	12	11	1	1	7	12. Learn new skills and stay current technically and professionally	12	10	5	3	1	7	3.9
74%	19%	39%	35%	3%	3%	23%		39%	32%	16%	10%	3%	23%	79%
3.6	6	11	8	3	1	9	13. Recognize the need to engage in lifelong learning	11	9	6	2	1	9	3.9
72%	21%	38%	28%	10%	3%	31%		38%	31%	21%	7%	3%	31%	79%
3.4	7	6	12	5	1	7	14. Understand contemporary social, economic and cultural issues	10	7	6	6	1	8	3.6
68%	23%	19%	39%	16%	3%	23%		33%	23%	20%	20%	3%	27%	73%
4.0	12	11	6	3	0	6	15. Use techniques, skills and modern engineering tools	14	9	6	1	1	7	4.1
80%	38%	34%	19%	9%	0%	19%		45%	29%	19%	3%	3%	23%	82%

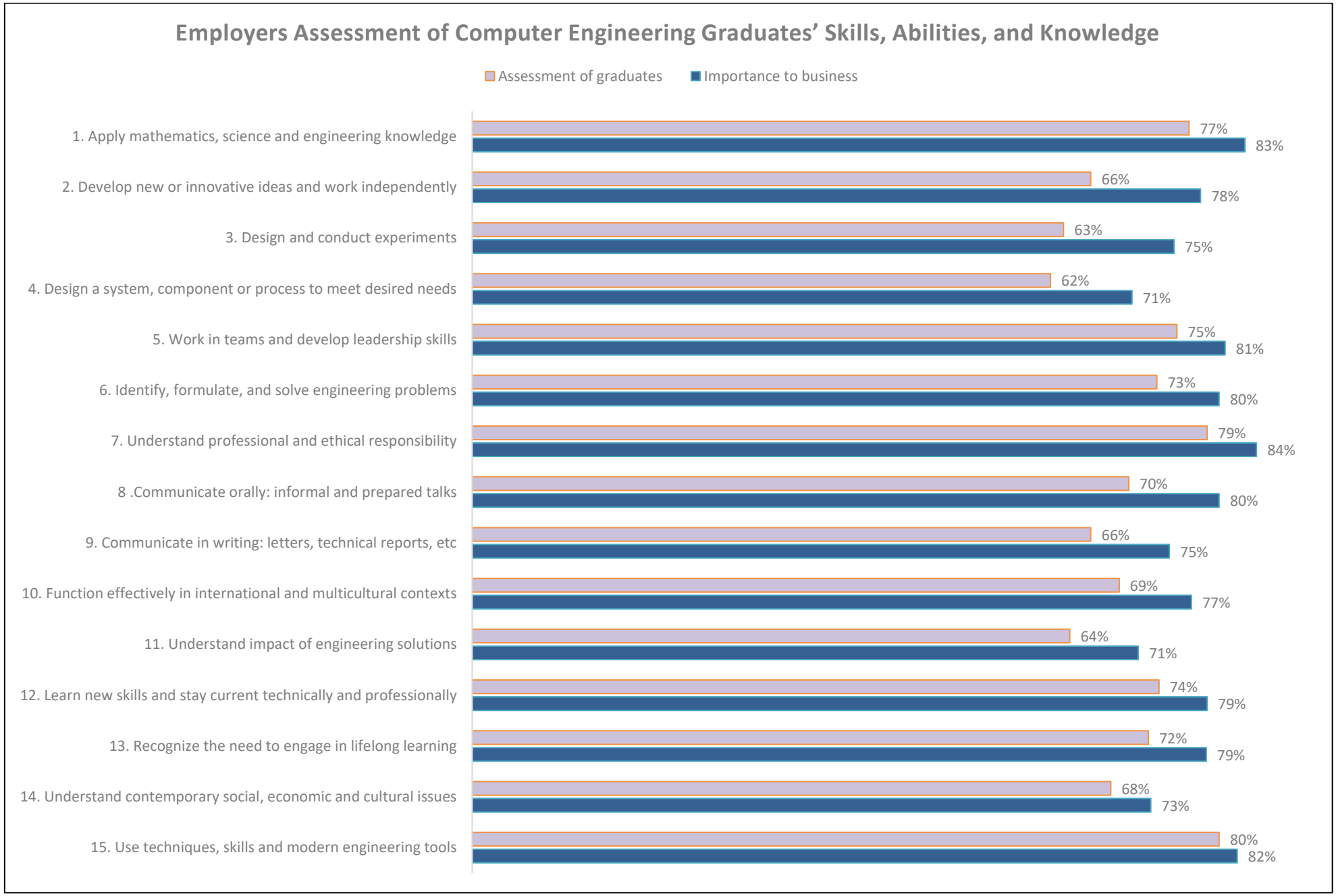

Figure 8: Employers Assessment of Computer Engineering Graduates' Skills, Abilities, and Attribut

Table 9: Employers Assessment of Computer Engineering Program Educational Objectives

Level of Attainment					Knowledge	Importaince to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory	Not Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.0	6	20	5	0	1. Contribution to Company / Workplace	16	10	5	0	3	4	4.1
76%	19%	65%	16%	0%		47%	29%	15%	0%	9%	12%	81%
3.0	7	18	4	2	2. Contribution to the well being of the society	13	10	7	2	1	5	4.0
74%	23%	58%	13%	6%		39%	30%	21%	6%	3%	15%	79%
3.2	10	19	4	0	3. Career Advancement	12	8	13	1	0	4	3.9
80%	30%	58%	12%	0%		35%	24%	38%	3%	0%	12%	78%
3.1	9	17	5	0	4. Degree Advancement and continuing education	9	12	9	1	3	4	3.7
78%	29%	55%	16%	0%		26%	35%	26%	3%	9%	12%	74%
3.0	6	19	6	0	5. Staying current in profession	15	12	7	1	0	4	4.2
75%	19%	61%	19%	0%		43%	34%	20%	3%	0%	11%	83%
3.0	6	17	7	0	6.Leadership Capabilities	17	11	4	0	2	4	4.2
74%	20%	57%	23%	0%		50%	32%	12%	0%	6%	12%	84%

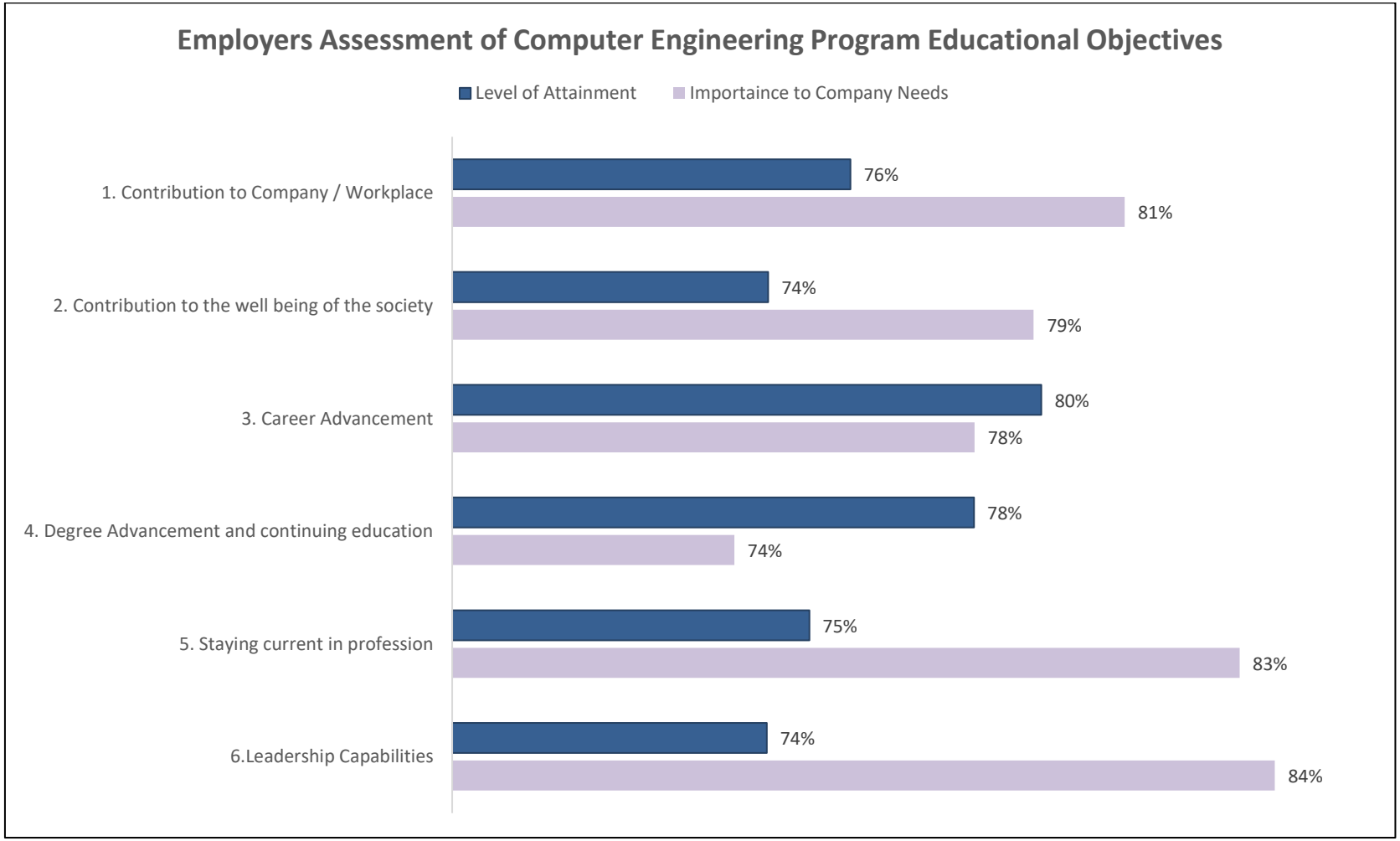

Figure 9: Employers Assessment of Computer Engineering Program Educational Objective

Employers Assessment of Electrical Engineering Program Graduates

Electrical Engineering Vision & Mission

Vision

The vision of the program is to gain regional and international recognition for providing a quality engineering education, outstanding research programs and exceptional community service. In addition, it is envisioned that the graduates of the program will be successful in their professional careers and/or graduate studies, prepared for professional creativity and leadership, and lead productive lives that contribute to improvement of society.

Mission

The objectives of the Electrical Engineering Program are consistent with the University and College missions.

The mission of the Electrical Engineering Program is:

- To provide a quality and broad engineering education.
- To conduct strong basic and applied research, to disseminate knowledge, and to contribute to advancement of science and technology.
- To serve the industry, the profession, and the community at large through innovative solutions.

Electrical Engineering Educational Objectives & Student Outcomes

Educational Objectives:

The Program Educational Objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

The EE Program has adopted the following Program Educational Objectives.

4. Graduates will successfully engage in careers in the broad range of electrical engineering areas to serve the needs of both private and public sectors.
5. Graduates will engage in continuous professional development activities, seek learning opportunities including graduate studies, and adapt to the rapid changes in work environment.
6. Graduates will contribute to the well-being of the society and environment through responsible practice of engineering profession.

Student Outcomes

The graduates of the Electrical Engineering Program will have:

(1-a) An ability to apply knowledge of mathematics, science, and engineering.

(2-b) An ability to design and conduct experiments, as well as to analyze and interpret data.

(3-c) An ability to design a system, component, or process to meet desired needs.

(4-d) An ability to function on multi-disciplinary teams.

(5-e) An ability to identify, formulates, and solve engineering problems.

(6-f) An understanding of professional and ethical responsibility.

(7-g) An ability to communicate effectively.

(8-h) A broad education necessary to understand the impact of engineering solutions in a global and societal context.

(9-i) Recognition of the need for, and an ability to engage in life-long learning.

(10-j) Knowledge of contemporary issues.

(11-k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

(12-l) Knowledge of probability and statistics, including applications appropriate to the program objectives.

(13-m) Knowledge of advanced mathematics, typically including differential equations, linear algebra, complex variables, and discrete mathematics.

(14-n) An ability to analyze, designs, and implement systems containing hardware and software components.

Table 10 : Employers Assessment of Electrical Enginering Graduates' Skills, Abilities, and Knowledge

Assessment of graduates							Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared	Cant Evaluate		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.68	15	24	19	7	1	7	1. Apply mathematics, science and engineering knowledge	18	25	18	1	0	11	3.97
74%	23%	36%	29%	11%	2%	11%		29%	40%	29%	2%	0%	18%	79%
3.08	8	18	18	15	7	7	2. Develop new or innovative ideas and work independently	22	24	5	8	3	11	3.87
62%	12%	27%	27%	23%	11%	11%		35%	39%	8%	13%	5%	18%	77%
2.95	7	16	13	19	7	11	3. Design and conduct experiments	22	11	18	4	7	11	3.60
59%	11%	26%	21%	31%	11%	18%		35%	18%	29%	6%	11%	18%	72%
2.94	10	12	16	14	11	10	4. Design a system, component or process to meet desired needs	14	11	22	8	6	12	3.31
59%	16%	19%	25%	22%	17%	16%		23%	18%	36%	13%	10%	20%	66%
3.51	15	21	15	10	4	8	5. Work in teams and develop leadership skills	30	20	9	2	2	10	4.17
70%	23%	32%	23%	15%	6%	12%		48%	32%	14%	3%	3%	16%	83%
3.42	14	17	19	12	3	8	6. Identify, formulate, and solve engineering problems	21	23	13	2	2	12	3.97
68%	22%	26%	29%	18%	5%	12%		34%	38%	21%	3%	3%	20%	79%
3.49	14	24	13	8	6	8	7. Understand professional and ethical responsibility	26	24	7	2	3	11	4.10
70%	22%	37%	20%	12%	9%	12%		42%	39%	11%	3%	5%	18%	82%

3.2	10	19	17	12	7	8	8 .Communicate orally: informal and prepared talks	19	23	15	2	3	11	3.85
64%	15%	29%	26%	18%	11%	12%		31%	37%	24%	3%	5%	18%	77%
2.82	7	17	14	13	15	7	9. Communicate in writing: letters, technical reports, etc	22	23	9	4	4	11	3.89
56%	11%	26%	21%	20%	23%	11%		35%	37%	15%	6%	6%	18%	78%
3	9	16	12	18	8	10	10. Function effectively in international and multicultural contexts	14	22	19	3	3	12	3.67
60%	14%	25%	19%	29%	13%	16%		23%	36%	31%	5%	5%	20%	73%
3.30	15	14	12	19	3	10	11. Understand impact of engineering solutions	17	14	20	7	4	11	3.53
66%	24%	22%	19%	30%	5%	16%		27%	23%	32%	11%	6%	18%	71%
3.48	15	19	19	6	6	8	12. Learn new skills and stay current technically and professionally	18	27	12	4	2	10	3.87
70%	23%	29%	29%	9%	9%	12%		29%	43%	19%	6%	3%	16%	77%
3.13	9	19	17	9	10	10	13. Recognize the need to engage in lifelong learning	20	21	15	2	2	13	3.92
63%	14%	30%	27%	14%	16%	16%		33%	35%	25%	3%	3%	22%	78%
3.16	12	11	19	15	5	11	14. Understand contemporary social, economic and cultural issues	11	21	13	10	5	13	3.38
63%	19%	18%	31%	24%	8%	18%		18%	35%	22%	17%	8%	22%	68%
3.76	22	17	18	7	2	7	15. Use techniques, skills and modern engineering tools	26	20	13	2	2	10	4.05
75%	33%	26%	27%	11%	3%	11%		41%	32%	21%	3%	3%	16%	81%

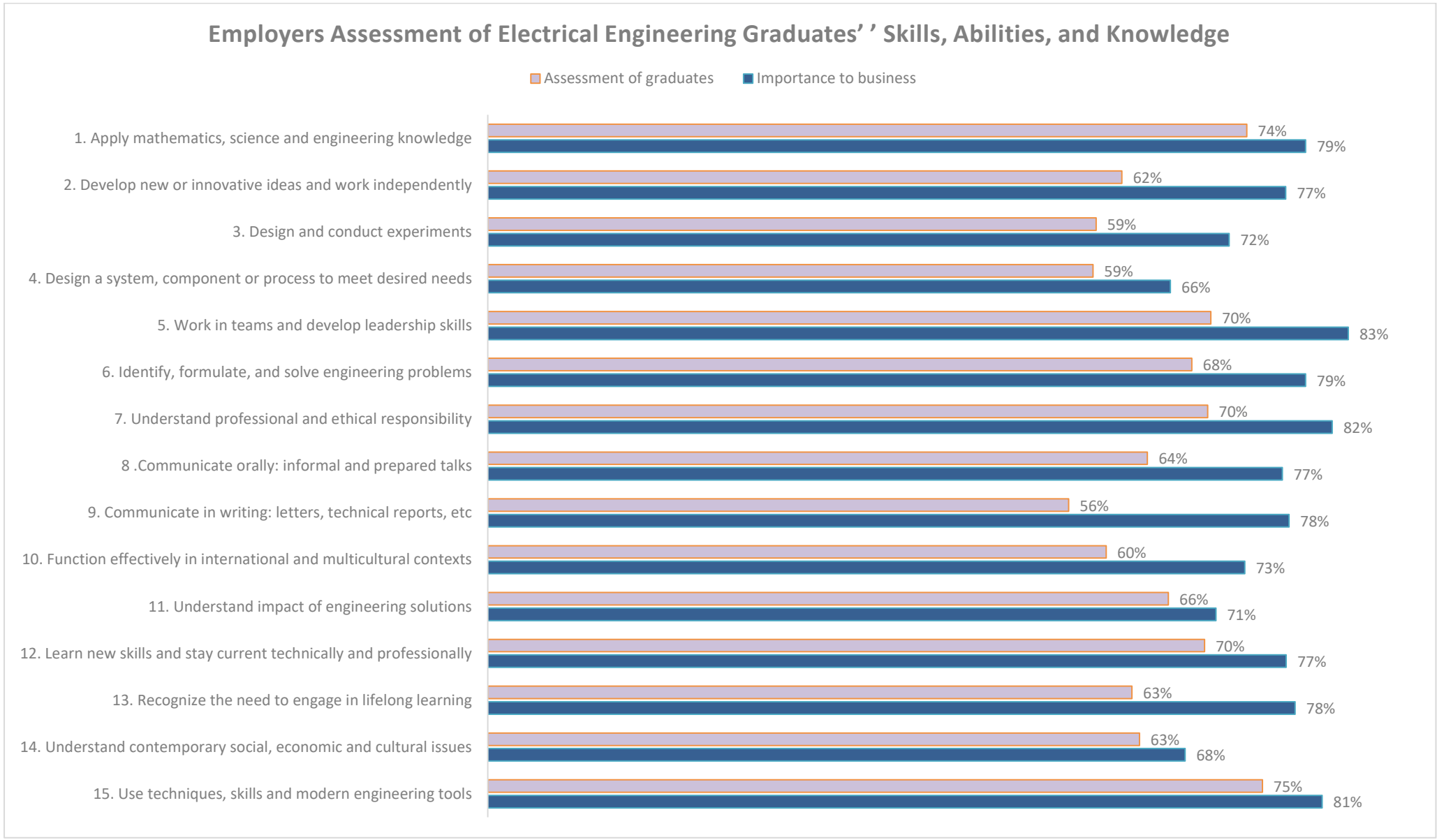

Figure 10: Employers Assessment of Electrical Engineering Graduates' Skills, Abilities, and Attribut

Table 11: Employers Assessment of Electrical Engineering Program Educational Objectives

Level of Attainment					Knowledge	Importaince to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory	Not Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
2.79	8	37	15	3	1. Contribution to Company / Workplace	30	18	14	0	4	7	4.06
70%	13%	59%	24%	5%		45%	27%	21%	0%	6%	11%	81%
2.81	8	37	14	3	2. Contribution to the well being of the society	24	23	16	1	2	7	4.00
70%	13%	60%	23%	5%		36%	35%	24%	2%	3%	11%	80%
2.83	10	36	15	3	3. Career Advancement	19	26	21	1	0	6	3.94
71%	16%	56%	23%	5%		28%	39%	31%	1%	0%	9%	79%
2.87	10	37	14	2	4. Degree Advancement and continuing education	23	20	18	2	5	5	3.79
72%	16%	59%	22%	3%		34%	29%	26%	3%	7%	7%	76%
2.72	12	26	22	4	5. Staying current in profession	28	26	12	1	0	6	4.21
68%	19%	41%	34%	6%		42%	39%	18%	1%	0%	9%	84%
2.63	11	21	26	4	6.Leadership Capabilities	30	17	13	2	2	9	4.11
66%	18%	34%	42%	6%		47%	27%	20%	3%	3%	14%	82%

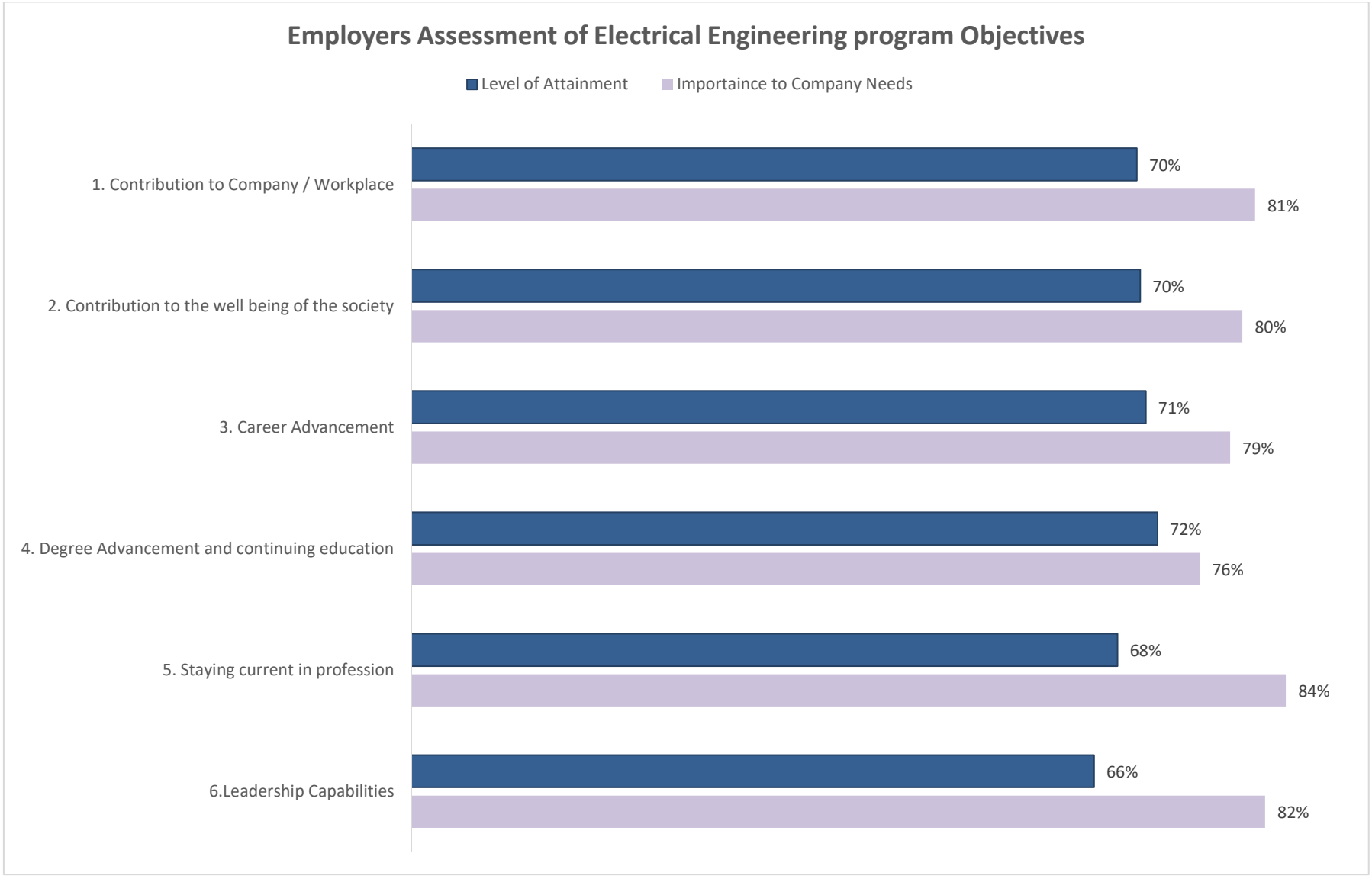

Figure 11: Employers Assessment of Electrical Engineering Program Educational Objectives

Employers Assessment of Industrial and Management Systems Engineering Program Graduates

IMS Engineering Vision & Mission

Vision

The vision is to be recognized as a leading educational institution in Industrial and Management Systems Engineering in the region; attracting high-caliber students and faculty members.

Mission

The mission is to graduate competent students with capability to work in leading local and international organizations and potential for lifelong learning; and to provide faculty with the required resources and environment to excel in teaching, research, and community service.

IMS Engineering Educational Objectives & Student Outcomes

Educational Objectives:

The graduates of the IMSE program will:

1. Engage in productive careers in a broad range of Industrial and Management Systems Engineering areas, or successfully pursue advanced studies.
2. Advance in leadership and teamwork capabilities, and engage in continuous professional developments to respond to technological and social challenges.
3. Contribute to the welfare of society and the development of the profession through responsible practice of engineering and management, and involvement in professional and civic organizations.

Student Outcomes

Achievement of the following Student Outcomes would indicate that the graduates are equipped with the necessary knowledge and skills to achieve the Educational Objectives. The first eleven Student Outcomes are similar to those listed under Criterion 3 of ABET EC2000.

1. Ability to apply knowledge of mathematics, science and engineering to model and solve industrial and management systems engineering problems.
2. Ability to design and conduct experiments related to deterministic or stochastic systems, as well as to analyze and interpret data.
3. Ability to design processes and integrated systems that achieve system design objectives which typically include considerations of ergonomics, productivity, quality, and profitability.
4. Ability to work in multidisciplinary teams providing industrial engineering input, as well as leading and/or coordinating the team's project.
5. Ability to identify, formulate and solve industrial and management systems engineering problems.
6. Ability to understand and appreciate professional conduct and ethical responsibility.
7. Ability to communicate effectively.
8. Ability to understand the impact of engineering solutions in a global and social context.
9. Ability to engage in life-long learning and appreciate the need for continual self-development.

10. Knowledge of contemporary issues.
11. Ability to use the techniques, skills, and the modern engineering tools necessary for Industrial and Management Systems Engineering.
12. A competency to apply Industrial and Management Systems Engineering techniques and tools in diverse types of organizations with focus on quality engineering and management, productivity and logistics, ergonomics and safety, and engineering economical decisions.

Table 12 : Employers Assessment of Industrial & Management Systems Enginering Graduates' Skills, Abilities, and Knowledge

Assessment of graduates							Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared	Cant Evaluate		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.6	6	11	11	3	1	4	1. Apply mathematics, science and engineering knowledge	11	12	7	1	0	5	4.1
71%	19%	34%	34%	9%	3%	13%		35%	39%	23%	3%	0%	16%	81%
3.0	3	8	11	5	5	4	2. Develop new or innovative ideas and work independently	11	11	1	5	2	6	3.8
59%	9%	25%	34%	16%	16%	13%		37%	37%	3%	17%	7%	20%	76%
2.9	4	5	6	9	3	9	3. Design and conduct experiments	12	2	7	1	6	8	3.5
59%	15%	19%	22%	33%	11%	33%		43%	7%	25%	4%	21%	29%	69%
2.9	5	6	5	8	6	6	4. Design a system, component or process to meet desired needs	5	7	8	5	5	6	3.1
57%	17%	20%	17%	27%	20%	20%		17%	23%	27%	17%	17%	20%	61%
3.5	10	8	6	4	4	4	5. Work in teams and develop leadership skills	17	7	5	2	0	5	4.3
70%	31%	25%	19%	13%	13%	13%		55%	23%	16%	6%	0%	16%	85%
3.2	6	5	10	4	4	7	6. Identify, formulate, and solve engineering problems	9	10	7	2	1	7	3.8
63%	21%	17%	34%	14%	14%	24%		31%	34%	24%	7%	3%	24%	77%
3.4	8	10	6	3	5	4	7. Understand professional and ethical responsibility	14	12	3	1	1	5	4.2
68%	25%	31%	19%	9%	16%	13%		45%	39%	10%	3%	3%	16%	84%
3.5	6	11	10	3	2	4		13	9	7	1	1	5	4.0

70%	19%	34%	31%	9%	6%	13%	8 .Communicate orally: informal and prepared talks	42%	29%	23%	3%	3%	16%	81%
2.8	4	6	10	4	8	4	9. Communicate in writing: letters, technical reports, etc	10	14	3	2	1	6	4.0
56%	13%	19%	31%	13%	25%	13%		33%	47%	10%	7%	3%	20%	80%
3.0	6	5	9	3	7	6	10. Function effectively in international and multicultural contexts	11	7	9	0	2	7	3.9
60%	20%	17%	30%	10%	23%	20%		38%	24%	31%	0%	7%	24%	77%
3.2	7	4	8	9	1	7	11. Understand impact of engineering solutions	8	3	11	3	3	8	3.4
65%	24%	14%	28%	31%	3%	24%		29%	11%	39%	11%	11%	29%	67%
3.4	8	7	10	1	5	1	12. Learn new skills and stay current technically and professionally	9	15	4	3	0	5	4.0
68%	26%	23%	32%	3%	16%	3%		29%	48%	13%	10%	0%	16%	79%
3.1	6	8	4	4	7	7	13. Recognize the need to engage in lifelong learning	11	12	4	1	0	8	4.2
61%	21%	28%	14%	14%	24%	24%		39%	43%	14%	4%	0%	29%	84%
3.2	10	2	6	8	4	6	14. Understand contemporary social, economic and cultural issues	4	8	7	5	4	8	3.1
64%	33%	7%	20%	27%	13%	20%		14%	29%	25%	18%	14%	29%	62%
4.1	14	10	5	3	0	4	15. Use techniques, skills and modern engineering tools	13	13	5	0	0	5	4.3
82%	44%	31%	16%	9%	0%	13%		42%	42%	16%	0%	0%	16%	85%

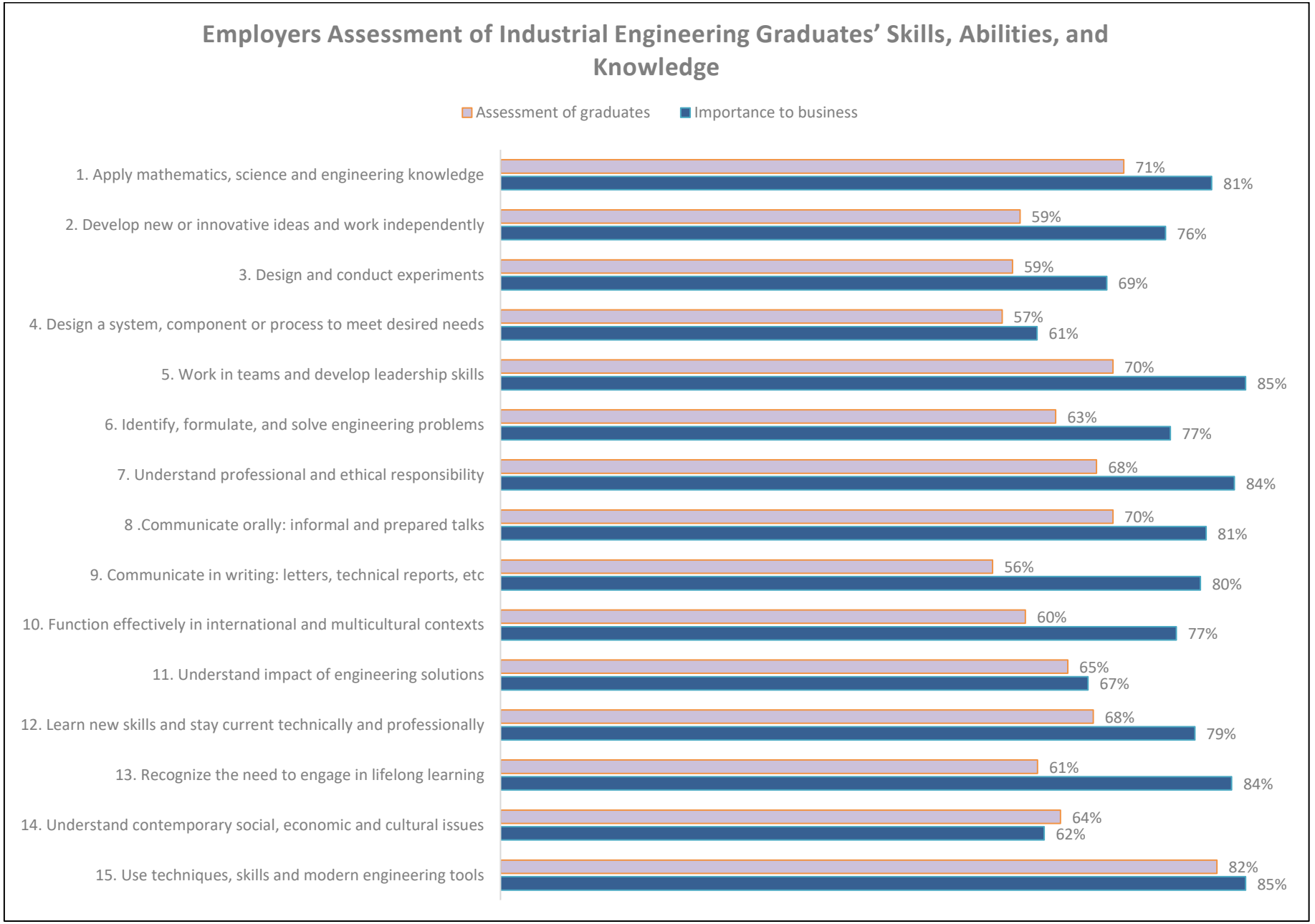

Figure 12: Employers Assessment of Industrial & Management Systems Engineering Graduates' Skills, Abilities, and Attribut

Table 13: Employers Assessment of Industrial & Management Systems Engineering Program Educational Objectives

Level of Attainment					Knowledge	Importaince to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory	Not Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
2.8	7	18	7	3	1. Contribution to Company / Workplace	15	14	3	0	2	2	4.2
71%	20%	51%	20%	9%		44%	41%	9%	0%	6%	6%	84%
2.9	9	17	6	3	2. Contribution to the well being of the society	15	12	5	1	1	2	4.1
73%	26%	49%	17%	9%		44%	35%	15%	3%	3%	6%	83%
2.9	7	18	5	3	3. Career Advancement	8	15	8	1	0	4	3.9
72%	21%	55%	15%	9%		25%	47%	25%	3%	0%	13%	79%
2.9	6	18	10	0	4. Degree Advancement and continuing education	13	11	7	1	2	2	3.9
72%	18%	53%	29%	0%		38%	32%	21%	3%	6%	6%	79%
2.6	5	15	10	4	5. Staying current in profession	13	15	6	0	0	2	4.2
65%	15%	44%	29%	12%		38%	44%	18%	0%	0%	6%	84%
2.6	6	9	14	3	6.Leadership Capabilities	15	10	5	2	0	4	4.2
64%	19%	28%	44%	9%		47%	31%	16%	6%	0%	13%	84%

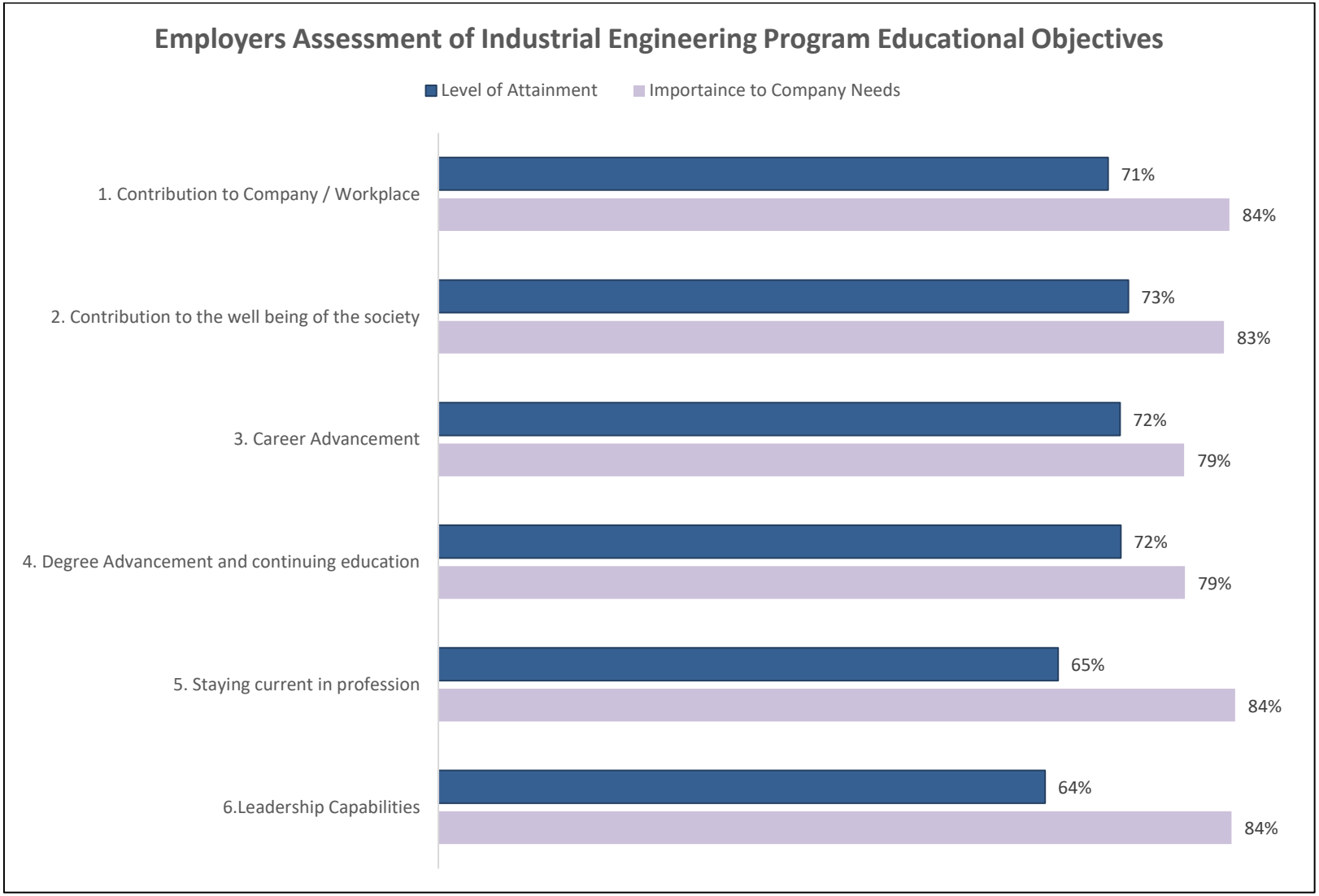

Figure 13: Employers Assessment of Industrial & Management Systems Engineering Program Educational Objectives

Employers Assessment of Mechanical Engineering Program Graduates

Mechanical Engineering Vision & Mission

Vision

The vision of the program is to gain regional and international recognition for providing a quality engineering education, outstanding research programs and exceptional community service. In addition, it is envisioned that the graduates of the program will be successful in their professional careers and/or graduate studies, prepared for professional creativity and leadership, and lead productive lives that contribute to improvement of society.

Mission

The mission of the program is to provide a quality and broad engineering education, to conduct strong basic and applied research, and to serve the industry, the profession and the community at large through innovative solutions, dissemination of knowledge, and advancement of science and technology.

Mechanical Engineering Educational Objectives & Student Outcomes

Educational Objectives:

The graduates of the ME program will:

4. Engage in productive careers in a broad range of mechanical engineering areas in public and private sectors in Kuwait, or successfully pursue advanced studies and careers in academia or in other research environments
5. Advance in responsibility and leadership in their careers, and engage in continuous professional development to respond to rapidly evolving technological and social challenges
6. Contribute to the welfare of society and the development of the profession through responsible practice of engineering and involvement in professional organizations.

Student Outcomes

The ME program graduates will have:

1. An ability to apply fundamentals of mathematics, science, and engineering science in modeling and analyzing engineering systems.
2. An ability to design and conduct laboratory experiments, and analyze and interpret experimental data.
3. An ability to design and realize both thermal and mechanical systems, components, and processes to meet desired needs.
4. An ability to function as effective members or leaders in teams.
5. An ability to identify, formulates, and solve engineering problems.
6. An ability to identify and critically analyze ethical issues that arise in various situations, and respond according to the codes of ethics of the profession.
7. An ability to communicate effectively in oral and written form.
8. The broad education necessary to be aware of the impact of engineering solutions on safety, health, welfare, and the well being of the society and the environment.

9. An ability to acquire new knowledge independently, and a recognition of life-long learning as a necessity for progress in the profession.
10. An awareness of emerging technologies in local and global context, and involvement in discussions of contemporary issues related to society.
11. An ability to utilize state-of-the art hardware and software tools for problem solving and design that are necessary for engineering practice.
12. An ability to assume responsibility at an entry level in the areas of Mechanical Engineering that are important to Kuwait and the region, such as the design, analysis and maintenance of machinery, refrigeration, air-conditioning and desalination systems.

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Table 14: Employers Assessment of Mechanical Enginering Graduates' Skills, Abilities, and Knowledge

Assessment of graduates							Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared	Cant Evaluate		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.6	16	25	23	8	2	14	1. Apply mathematics, science and engineering knowledge	24	28	21	3	0	12	4.0
72%	22%	34%	31%	11%	3%	19%		32%	37%	28%	4%	0%	16%	79%
3.1	8	21	20	17	8	14	2. Develop new or innovative ideas and work independently	24	32	9	8	3	12	3.9
61%	11%	28%	27%	23%	11%	19%		32%	42%	12%	11%	4%	16%	77%
2.9	9	14	16	19	9	21	3. Design and conduct experiments	25	11	24	6	9	13	3.5
59%	13%	21%	24%	28%	13%	31%		33%	15%	32%	8%	12%	17%	70%
2.9	10	14	17	18	10	19	4. Design a system, component or process to meet desired needs	18	16	20	14	7	13	3.3
59%	14%	20%	25%	26%	14%	28%		24%	21%	27%	19%	9%	17%	66%
3.6	17	26	16	10	3	16	5. Work in teams and develop leadership skills	35	22	12	5	2	12	4.1
72%	24%	36%	22%	14%	4%	22%		46%	29%	16%	7%	3%	16%	82%
3.4	18	16	19	15	4	16	6. Identify, formulate, and solve engineering problems	22	29	19	4	2	12	3.9
68%	25%	22%	26%	21%	6%	22%		29%	38%	25%	5%	3%	16%	77%
3.5	17	23	19	8	5	16	7. Understand professional and ethical responsibility	29	30	12	2	3	12	4.1
71%	24%	32%	26%	11%	7%	22%		38%	39%	16%	3%	4%	16%	81%
3.2	11	21	19	14	6	17		23	26	21	2	3	13	3.9

65%	15%	30%	27%	20%	8%	24%	8 .Communicate orally: informal and prepared talks	31%	35%	28%	3%	4%	17%	77%
2.8	7	18	15	20	14	14	9. Communicate in writing: letters, technical reports, etc	26	29	13	4	4	12	3.9
56%	9%	24%	20%	27%	19%	19%		34%	38%	17%	5%	5%	16%	78%
2.9	10	12	18	22	7	19	10. Function effectively in international and multicultural contexts	22	20	23	7	4	12	3.6
59%	14%	17%	26%	32%	10%	28%		29%	26%	30%	9%	5%	16%	73%
3.2	16	12	18	21	4	17	11. Understand impact of engineering solutions	23	16	25	8	4	12	3.6
64%	23%	17%	25%	30%	6%	24%		30%	21%	33%	11%	5%	16%	72%
3.4	17	19	20	8	7	17	12. Learn new skills and stay current technically and professionally	22	32	17	4	2	11	3.9
69%	24%	27%	28%	11%	10%	24%		29%	42%	22%	5%	3%	14%	78%
3.1	9	22	14	13	10	20	13. Recognize the need to engage in lifelong learning	19	31	19	3	2	14	3.8
62%	13%	32%	21%	19%	15%	29%		26%	42%	26%	4%	3%	19%	77%
3.1	13	13	20	17	6	19	14. Understand contemporary social, economic and cultural issues	14	24	13	15	7	15	3.3
63%	19%	19%	29%	25%	9%	28%		19%	33%	18%	21%	10%	21%	66%
3.8	24	22	18	7	2	15	15. Use techniques, skills and modern engineering tools	32	24	18	1	2	11	4.1
76%	33%	30%	25%	10%	3%	21%		42%	31%	23%	1%	3%	14%	82%

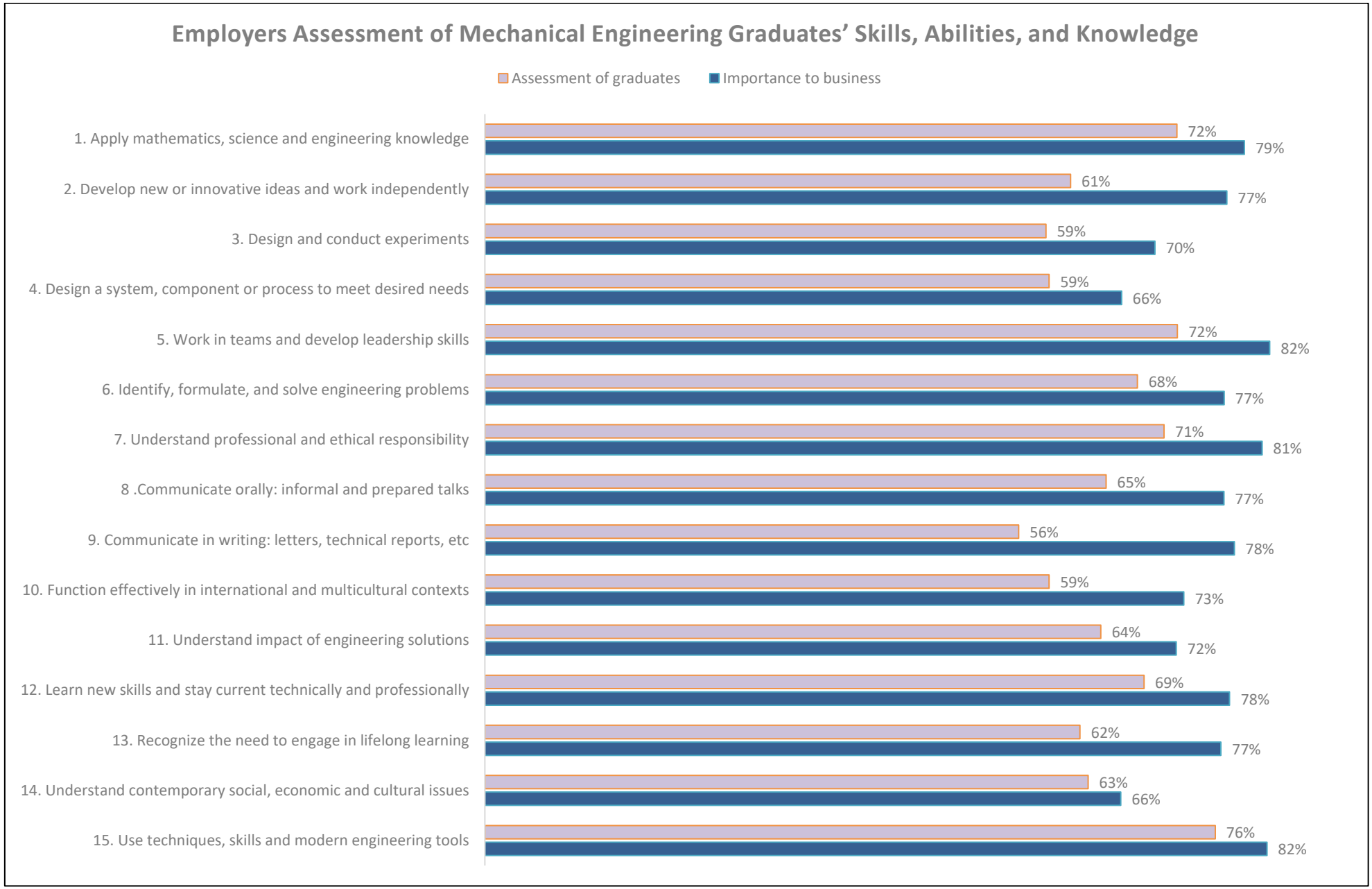


Figure14 : Employers Assessment of Mechanical Engineering Graduates' Skills, Abilities, and Attribut

Table 15 : Employers Assessment of Mechanical Engineering Program Educational Objectives

Level of Attainment					Knowledge	Importaince to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory	Not Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
2.7	6	47	20	5	1. Contribution to Company / Workplace	34	30	14	0	4	6	4.1
67%	8%	60%	26%	6%		41%	37%	17%	0%	5%	7%	82%
2.8	10	46	15	5	2. Contribution to the well being of the society	32	29	15	1	3	8	4.1
70%	13%	61%	20%	7%		40%	36%	19%	1%	4%	10%	82%
2.9	14	45	14	5	3. Career Advancement	24	38	18	3	0	5	4.0
72%	18%	58%	18%	6%		29%	46%	22%	4%	0%	6%	80%
2.8	9	47	19	3	4. Degree Advancement and continuing education	31	25	21	2	5	4	3.9
70%	12%	60%	24%	4%		37%	30%	25%	2%	6%	5%	78%
2.8	16	33	23	6	5. Staying current in profession	29	38	14	2	0	5	4.1
69%	21%	42%	29%	8%		35%	46%	17%	2%	0%	6%	83%
2.6	13	25	30	6	6.Leadership Capabilities	32	26	17	2	2	9	4.1
65%	18%	34%	41%	8%		41%	33%	22%	3%	3%	11%	81%

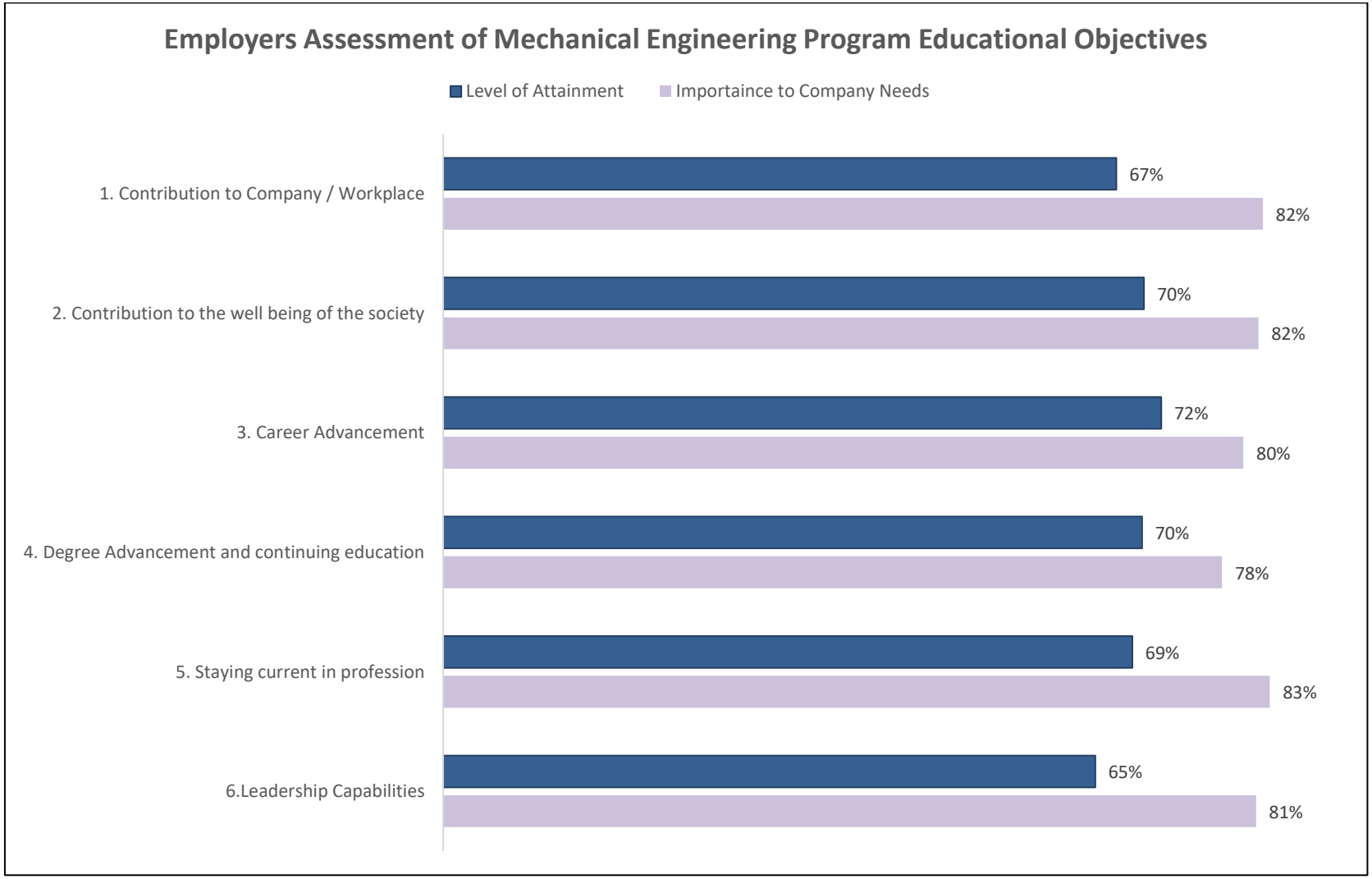


Figure 15: Employers Assessment of Mechanical Engineering Program Educational Objectives

Employers Assessment of Petroleum Engineering Program Graduates

Petroleum Engineering Vision & Mission

Vision

To be a world-class provider of education and research for oil and gas industry. To play a leadership role in providing and applying new technologies in order to increase the Petroleum reserves of Kuwait.

Mission

To provide modern petroleum engineering education with proper balance between theory and practice, and to graduate petroleum engineers prepared for life-long learning and capable of being productive contributors for the oil and gas industry.

Petroleum Engineering Educational Objectives & Student Outcomes

Educational Objectives:

The Petroleum Engineering Department at Kuwait University is dedicated to graduating Petroleum Engineers who will:

Engage in productive careers in petroleum engineering in public or private sectors, or successfully pursue graduate studies and careers in academia or research centers.

4. Advance in responsibility and leadership in their careers, and participate in continuous professional development to meet the challenges of rapidly emerging technology.
5. Contribute to the welfare of the society and the environment and the development of the profession through responsible practice of petroleum engineering and participation in professional activities and organizations.

Student Outcomes

Petroleum Engineering Student Outcomes

l. An ability to apply knowledge of mathematics, science, and engineering
m. An ability to design and conduct experiments, as well as to analyze and interpret data
n. An ability to design a system, component, or process to meet desired needs
o. An ability to function on multi-disciplinary teams
p. An ability to identify, formulate, and solve engineering problems
q. An understanding of professional and ethical responsibility
r. An ability to communicate effectively
s. The broad education necessary to understand the impact of engineering solutions in a global and societal context
t. A recognition of the need for, and an ability to engage in life-long learning
u. A knowledge of contemporary issues
v. An ability to use techniques, skills, and modern engineering tools necessary for engineering practice

Table 16 : Employers Assessment of Petroleum Enginering Graduates' Skills, Abilities, and Knowledge

Assessment of graduates						Knowledge	Importance to business						
Average Rating	Very well prepared	Well prepared	Prepared	Somewhat prepared	Not prepared		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
3.6	5	7	10	2	0	1. Apply mathematics, science and engineering knowledge	12	7	4	0	0	2	4.3
73%	21%	29%	42%	8%	0%		52%	30%	17%	0%	0%	9%	87%
2.8	2	6	5	7	4	2. Develop new or innovative ideas and work independently	12	9	0	2	1	2	4.2
56%	8%	25%	21%	29%	17%		50%	38%	0%	8%	4%	8%	84%
2.8	2	5	6	5	4	3. Design and conduct experiments	7	8	4	1	1	4	3.9
56%	9%	23%	27%	23%	18%		33%	38%	19%	5%	5%	19%	78%
3.5	2	11	7	4	0	4. Design a system, component or process to meet desired needs	7	5	3	5	2	3	3.5
69%	8%	46%	29%	17%	0%		32%	23%	14%	23%	9%	14%	69%
3.3	3	7	9	3	1	5. Work in teams and develop leadership skills	12	9	1	1	0	2	4.4
67%	13%	30%	39%	13%	4%		52%	39%	4%	4%	0%	9%	88%
3.6	4	7	11	0	1	6. Identify, formulate, and solve engineering problems	9	11	2	1	0	2	4.2
71%	17%	30%	48%	0%	4%		39%	48%	9%	4%	0%	9%	84%
3.6	4	7	11	0	1	7. Understand professional and ethical responsibility	13	8	1	0	1	2	4.4
71%	17%	30%	48%	0%	4%		57%	35%	4%	0%	4%	9%	88%
3.1	2	7	6	9	0		11	8	2	1	1	2	4.2

62%	8%	29%	25%	38%	0%	8 .Communicate orally: informal and prepared talks	48%	35%	9%	4%	4%	9%	83%
2.8	2	7	2	11	2	9. Communicate in writing: letters, technical reports, etc	10	9	1	2	0	3	4.2
57%	8%	29%	8%	46%	8%		45%	41%	5%	9%	0%	14%	85%
3.0	2	4	10	7	0	10. Function effectively in international and multicultural contexts	7	7	4	2	1	4	3.8
61%	9%	17%	43%	30%	0%		33%	33%	19%	10%	5%	19%	76%
2.7	2	3	8	7	3	11. Understand impact of engineering solutions	10	4	5	2	2	2	3.78
55%	9%	13%	35%	30%	13%		43%	17%	22%	9%	9%	9%	76%
3.3	3	8	7	5	1	12. Learn new skills and stay current technically and professionally	11	8	2	2	0	2	4.2
66%	13%	33%	29%	21%	4%		48%	35%	9%	9%	0%	9%	84%
3.1	3	5	9	2	3	13. Recognize the need to engage in lifelong learning	7	8	6	1	0	3	4.0
63%	14%	23%	41%	9%	14%		32%	36%	27%	5%	0%	14%	79%
3.1	2	6	9	5	1	14. Understand contemporary social, economic and cultural issues	5	7	5	4	1	3	3.5
63%	9%	26%	39%	22%	4%		23%	32%	23%	18%	5%	14%	70%
3.6	5	7	9	3	0	15. Use techniques, skills and modern engineering tools	12	6	5	0	0	2	4.3
72%	21%	29%	38%	13%	0%		52%	26%	22%	0%	0%	9%	86%

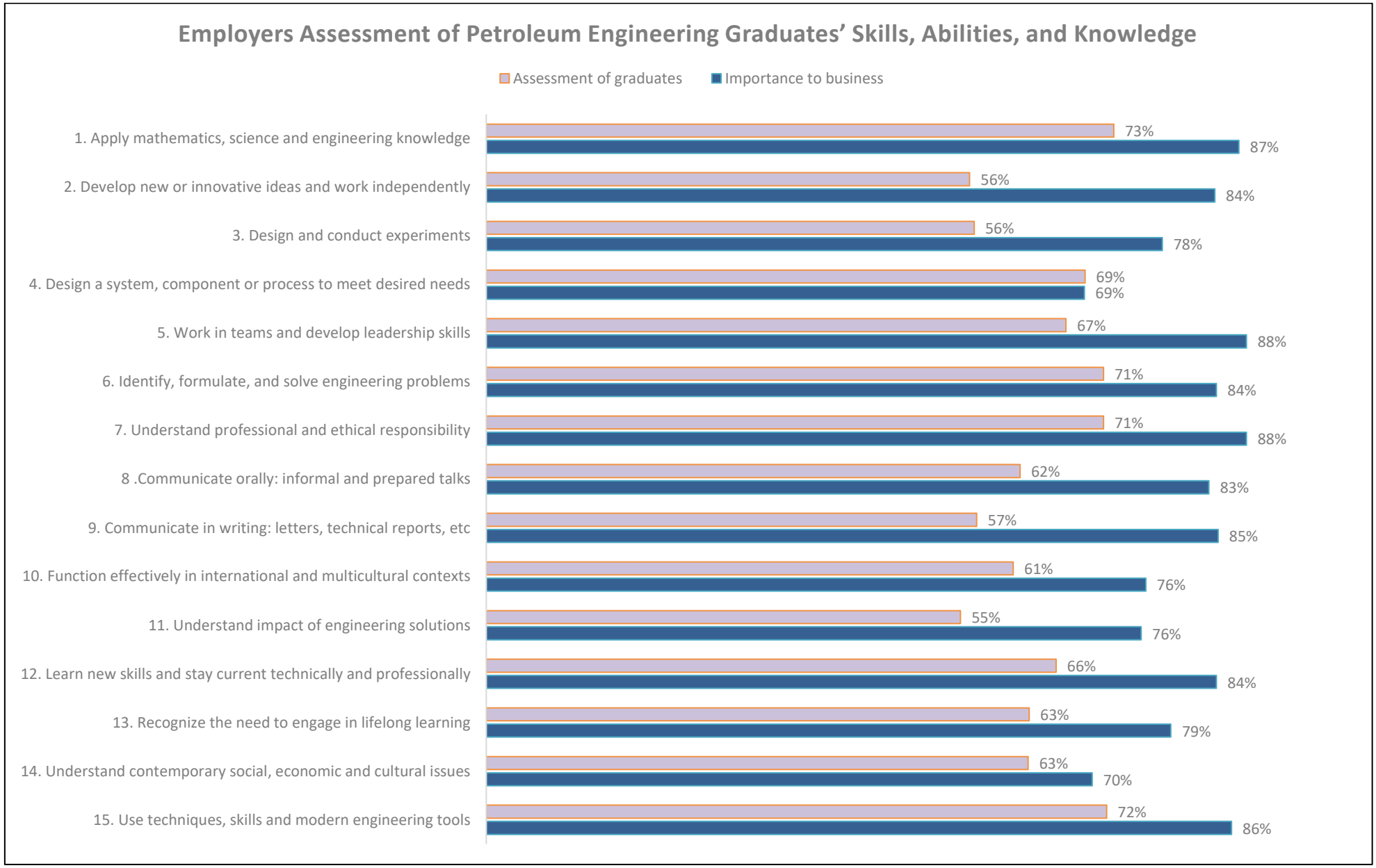


Figure 16: Employers Assessment of Petroleum Engineering Graduates' Skills, Abilities, and Attribut

Table 17 : Employers Assessment of Petroleum Engineering Program Educational Objectives

Level of Attainment				Knowledge	Importance to Company Needs						
Average Rating	Significant	Satisfactory	Somewhat Satisfactory		Extremely important	Very important	Important	Somewhat important	Not important	Can't evaluate	Average Rating
2.9	2	19	3	1. Contribution to Company / Workplace	15	4	3	0	1	2	4.4
72%	8%	76%	12%		65%	17%	13%	0%	4%	9%	88%
2.7	2	15	6	2. Contribution to the wellbeing of the society	12	7	3	1	0	2	4.3
67%	8%	60%	24%		52%	30%	13%	4%	0%	9%	86%
3.0	3	17	3	3. Career Advancement	8	8	6	0	0	3	4.1
75%	13%	74%	13%		36%	36%	27%	0%	0%	14%	82%
3.0	6	13	6	4. Degree Advancement and continuing education	8	5	8	3	0	1	3.8
75%	24%	52%	24%		33%	21%	33%	13%	0%	4%	75%
2.6	2	14	7	5. Staying current in profession	11	7	6	0	0	1	4.2
66%	8%	56%	28%		46%	29%	25%	0%	0%	4%	84%
2.9	3	13	6	6.Leadership Capabilities	13	3	5	0	0	4	4.4
72%	14%	59%	27%		62%	14%	24%	0%	0%	19%	88%

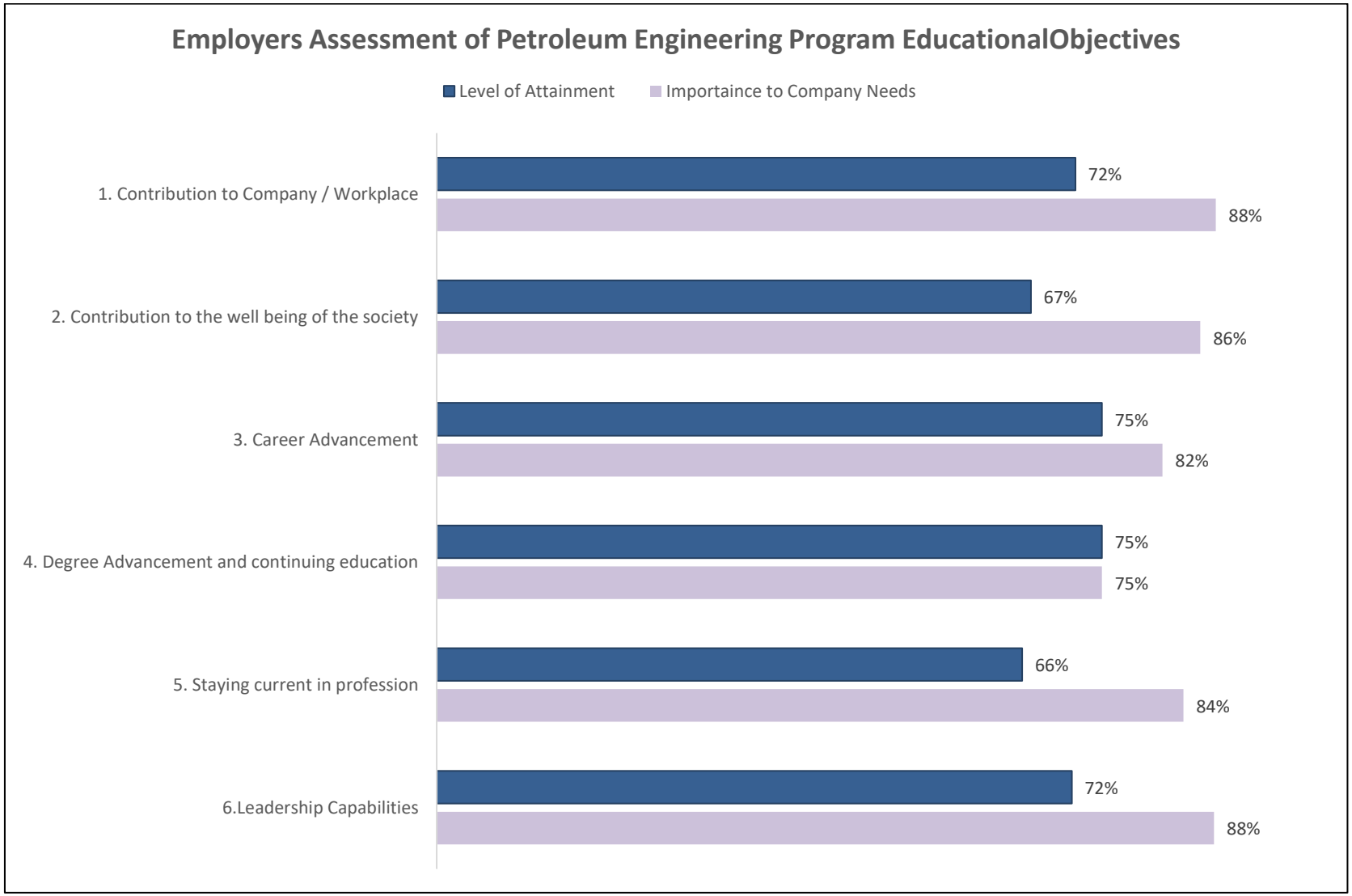


Figure17 : Employers Assessment of Petroleum Engineering Program Educational Objectives

APPENDIX E:
Sample Presentation to Departments

Accreditation and Assessment

Andreas P. Christofarou
Office of Academic Assessment (OAA)
College of Engineering and Petroleum (CEP)
Kuwait University (KU)

Accreditation Structure-Leadership

ABET-EAC criteria

1. Students
2. Program Educational Objectives
3. Student Outcomes
4. Continuous Improvement
5. Curriculum
6. Faculty
7. Facilities
8. Institutional Support

+ Program Criteria (additional curriculum and faculty requirements)

Main activities-2016/17

- **Coordination** – three visits to individual departments, UPC, AC meetings, monitoring assessment activities, etc.
- **Addressing previous ABET visit issues** – programs addressed/addressing them.
- **Addressing areas for improvement** – Design, Common courses, Labs, English.
- **Alumni survey** – 1800 responded during registration drive, only 332 completed the survey.
- **Virtual assessment 'room'** – file sharing system

Alumni survey participation

Response Statistics: May 15, 2017

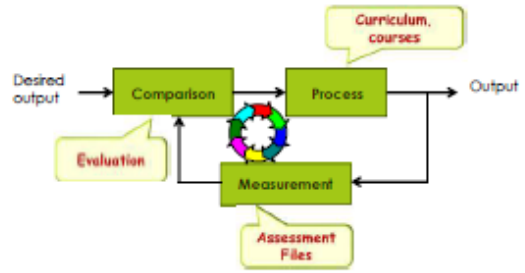
DEPARTMENTS	Total No. of Graduates - last 6 yrs	Survey Response	% Response
CHEMICAL ENGINEERING	583	39	6.9
CIVIL ENGINEERING	1080	106	9.7
COMPUTER ENGINEERING	442	35	7.9
ELECTRICAL ENGINEERING	621	41	6.6
IME ENGINEERING	380	30	7.9
MECHANICAL ENGINEERING	407	37	9.1
PETROLEUM ENGINEERING	502	22	4.4
TOTAL	4016	332	8.3

Course assessment participation

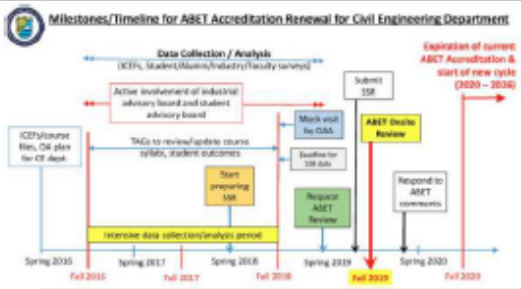
Response Statistics – Fall Semester 2016/17: May 15, 2017

DEPARTMENT	Total Faculty	Total Course Sections	Total Response (courses)	Unique Responder	% Response Courses	% Response Faculty
CHEMICAL	19	61	30	12	50.0	63.2
CIVIL	42	91	37	20	40.7	47.6
ELECTRICAL	32	66	30	13	35.3	40.6
IMSE	12	28	28	12	100.0	100.0
MECHANICAL	38	78	24	14	32.0	40.0
PETROLEUM	17	30	19	5	63.3	29.4
TOTAL	167	380	188	78	46.1	47.0

Closing the loop



ABET evaluation visit-timeline and preparation



Preparations for ABET

- Fall 2017 – Begin writing Self Study Reports (SSR)
- Spring 2017 – SSR drafts are ready for internal review
- Fall 2018 – Internal review and mock evaluation visit
- January 2019 – Request ABET evaluation visit
- June 2019 – Finalize SSR and send them to ABET
- July to October 2019 – Pre-visit activities and preparations
- November 2019 – ABET evaluation visit

Concluding remarks

- Accreditation is very important to all of us.
- ABET accreditation demonstrates our commitment to the quality of our engineering programs – both now and in the future.
- Keys: Commitment, support, implementation, follow-up.

For more information….

- Visit the OAA web site:
  - http://www.eng.kuniv.edu/oaa/
- Visit the ABET web site:
  - http://www.abet.org/accreditation/
- Or write/call us:
  - oaa@eng.ku.edu.kw, ext. 83331