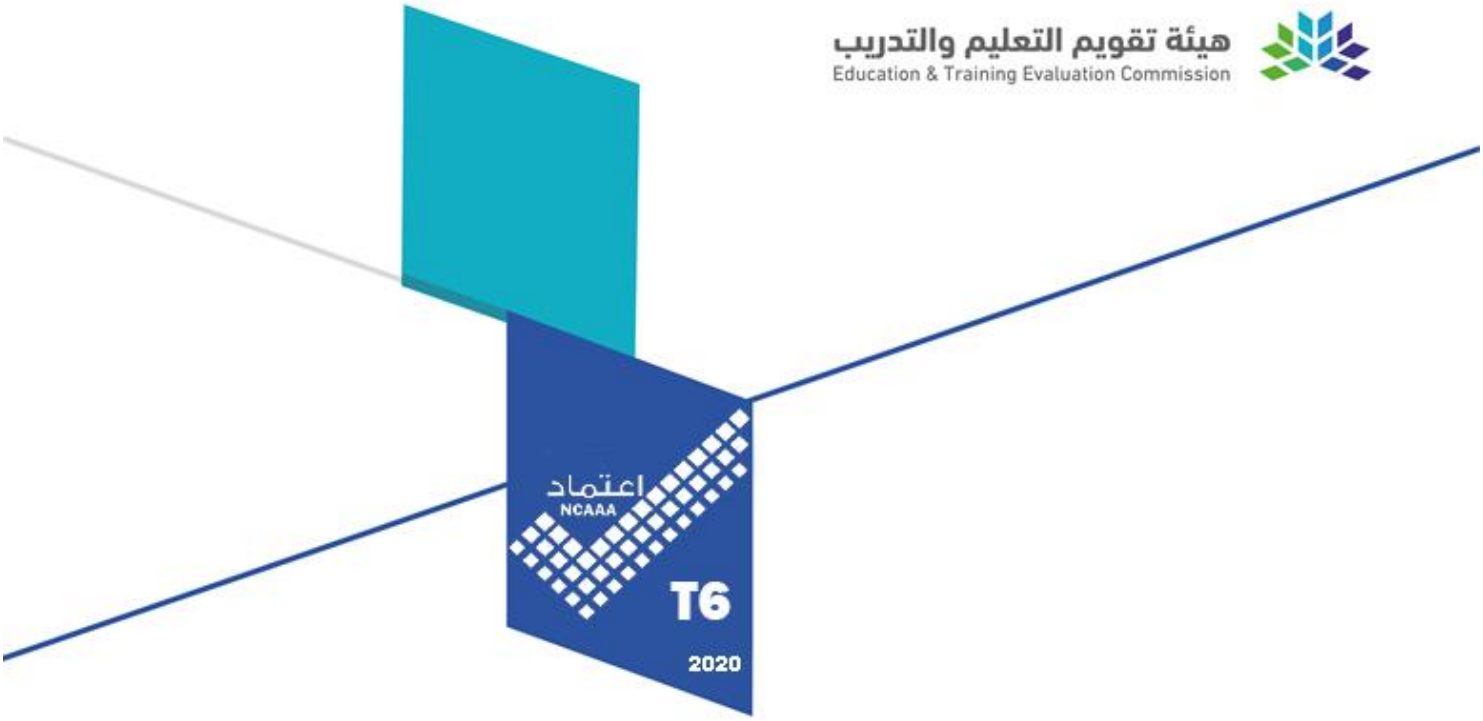
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Annual Program Report

Program Name:	Mechanical Engineering
Qualification Level:	Bachelor of Science (B. Sc.) in Mechanical Engineering
Department:	Department of Mechanical and Materials Engineering
College:	Engineering
Institution:	University of Jeddah
Academic Year:	**2019/2020**
Main Location:	Main Campus, University of Jeddah
Branches offering the Program:	No Branches

Table of Contents

A. Implementation of Previous Action Plan

Considering the recommendations of previous year annual report, list the planned actions and their status.

Planned Actions	Responsibility of Action	Planned Completion Date	Level of Completion		If Not Completed	
			Completed	Not Completed	Reasons	Proposed Actions
1.						
2.						
3.						
4.						

B. Program Statistics

1. Students Statistics (in the year concerned)

No.	Item	Results
1	Number of students who started the program	**147**
2	Number of students who graduated	**41**
3	Number of students who completed major tracks within the program (if applicable)	
	a.	**NA**
	B	
	c.	
4	**a.** Number of students who completed the program in the minimal time	**0**
5	**a.** Percentage of students who completed the program in the minimal time (Completion rate)	**0**
6	Number of students who completed an intermediate award specified as an early exit point (if any)	**0**
7	Percentage of students who completed an intermediate award specified as an early exit point (if any)	**0**

Comment on any special or unusual factors that might have affected the completion rates:

The summer semester strategy offering the courses only for graduating and preparatory year students only! This doesn't help the students to complete the program early

2 . Cohort Analysis of Current Graduate Batch

Student Categories / Years		Total cohort enrollment	Withdrawn	Retained till year end	Not passed	Passed	Passing rate
Three Years Ago	M	25	--	25	3	22	22/25
	F	-					
	Total	25	--	25	3	22	22/25
Two Years Ago	M	32	1	31	3	27	27/31
	F	-					
	Total	32	1	31	3	27	27/31
Last Year	M	37	0	37	4	33	33/37
	F	-					
	Total	37	0	37	4	33	33/37
Current Year	M	41	0	41	2	39	39/41
	F	-					
	Total	41	0	41	2	39	39/41

Comments on the results:

- The passing rate is lightly increased due to several reasons
- The PLOs are updated to comply with ABET.
- The direct assessment of PLOs K1, S2 and C2 not up to the mark while other gives satisfaction % and up to the average score.
- The higher value of other PLO is because of less no. of students participated in PLO survey.

* add more rows for further years (if needed)
** attach separate cohort analysis report for each branch

3.Analysis of Program Statistics

(including strengths, areas for improvement, and priorities for improvement)

Strengths :

- The passing rate is good
- Number of students is increased as the general attitude of the University of Jeddah
- Passing rate is slightly improved in the last three years

Areas for Improvement:

- The accurate assessment of the PLOs helps to find and detect the points of weakness in the academic program
- The CLOs of the key courses need revising in order to serve the PLOs
- The rate of passing students is increased
- More students can complete an intermediate award specified as an early exit point

Priorities for Improvement:

- Minimizing the non-passing students and improve the quality of the enrolled students to be appropriate to the intended level of study
- Revise CLOs for key courses with paying more attention while delivering these CLOs to improve PLOs assessment

C. Program Learning Outcomes Assessment

1. Program Learning Outcomes Assessment Results.

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results
Knowledge and Understanding				
K1	State essential facts, fundamentals, concepts, principles and theories relevant to mechanical and materials engineering.	Midterm, and final Exams, HomeWorks	75%	72%
K2	Select concepts and theories of complex engineering problems, basic sciences, mathematics and the technological base relevant to mechanical, materials and energy engineering.	Major , and final Exams, HomeWorks	75%	74%

K3	Describe engineering design principles and techniques and their applications to mechanical, materials and thermal engineering.	Midterm, Major , and final Exams, HomeWorks	80%	76%
K4	Identify the characteristics and properties of materials relevant to mechanical and materials engineering applications.	Midterm, Major , and final Exams, HomeWorks	75%	75%
K..				
Skills				
S1	Solve complex engineering problems by applying principles of engineering design in mechanical, materials and energy systems.	Oral presentations, quizzes Exams, HomeWorks	75%	70%
S2	Apply the appropriate tools of engineering design such as mechanical design and thermofluidic principles with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.	Senior projects, reports, oral Presentations	80%	79%
S3	Develop and conduct appropriate experimentation, analyze and interpret data, and use mechanical engineering judgment to draw conclusions to obtain new data.	Oral presentations, quizzes Exams, HomeWorks, Lab reports	80%	76%
S4	Evaluate mechanical and energy engineering designs, processes and performances and propose improvements.	Oral presentations, quizzes Exams, HomeWorks	85%	78%
S..				
Values				
V1	Communicate effectively with a range of audiences.	Presentations, teamwork projects	85%	77%
V2	Point 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.	Senior projects, Quizzes, Exams	85%	81%
V3	Communicate effectively as a member or leader of a team that establishes goals, plans task, meets deadlines, and creates a collaborative and inclusive	Teamwork projects	80%	66%

	environment in mechanical and materials engineering			
V4	Recognize the ongoing need to acquire new knowledge and ability to have new learning strategies in mechanical and material engineering.	Oral presentations, quizzes and Exams, HomeWorks	75%	68%
V..				

Comments on the Program Learning Outcome Assessment results.

- The successful implementation of online learning via BB
- The experiences added to students and teaching staff in teaching via BB

* Include the results of measured learning outcomes during the year of the report according to the program plan for measuring learning outcomes

** Attach a separate report on the program learning outcomes assessment results for male and female sections and for each branch (if any)

2. Analysis of Program Learning Outcomes Assessment

(including strengths, Areas for Improvement:, and priorities for improvement)

Strengths :

- All students have good knowledge and skills
- All PLOs are measured using rubrics

Areas for Improvement:

- Values should be improved (this may be contributed to COV19)

Priorities for Improvement:

- Values PLOs should be improved

D. Summary of Course Reports

1. Teaching of Planned Courses / Units

List the courses / units that were planned and not taught during the academic year, indicating the reasons and compensating actions.

Course	Units/Topics	Reasons	Compensating Actions
NA	NA	NA	NA

2. Courses with Variations

List courses with marked variations in results that are stated in the course reports, including: (completion rate, grade distribution, student results, etc.), and giving reasons for these variations and actions taken for improvement.

Course Name &Code	variation	Reasons for variation	Actions taken
Internal combustion engines, ENME 341	Results were not 100% satisfied	This semester is considered a special circumstance due to COVID-19, and in the next semester the distribution of exam questions should be modified and improved to achieve the normal .distribution of students' grades	More procedures will be done to improve the facilities for such cases
Automatic control systems, ENME 381	Skills were not totally satisfactory	Some skills required Lab work and experiments which was not available because of COVID-19	The Lab time will be scheduled that low students attend the lab by dividing every section into small groups
All courses	Online teaching via internet	Pandemic	BlackBoard

3. Result Analysis of Course Reports

(including strengths, Areas for Improvement:, and priorities for improvement)

Strengths :

- Most of the course grade distribution are within normal range
- All courses had been taught as scheduled with nearly no variation
- The successful implementation of online learning via BB
- The experiences added to students and teaching staff in teaching via BB

Areas for Improvement:

- Some courses have little high completion rates.

Priorities for Improvement:

- Prepare Labs for better graduates
- Establish a departmental library with associated study room, both equipped with PC and printers, and connected to the internet
- Move to the new building for better infrastructure

E. Program Activities

1. Student Counseling and Support

Activities Implemented	Brief Description*
Academic advising day	Mechanical and Materials department organized

Team design projects day	College of Engineering organized

Comment on Student Counseling and Support **
Electronic service helps the

* including action time, number of participants, results and any other statistics.
** including performance evaluation on these activities

2. Professional Development Activities for Faculty and Other Staff

Activities Implemented	**Brief Description***
Workshop "how to teach using Blackboard"	College of Engineering organized
Staff members attended workshops regarding preparing reports and accreditation	Department of Mechanical and materials engineering
Dean, Vice dean, and some HoDs attended workshops regarding leadership and accreditation	During semester 20201, however pandemic hold these workshops

Comment on Professional Development Activities for Faculty and Other Staff **

* including action time, number of participants, results and any other statistics.
** including performance evaluation on these activities

3. Research and Innovation

Activities Implemented	**Brief Description***
Workshop "new trends in internal combustion engines"	Department of Mechanical and materials engineering
Periodic teamwork research	Department of Mechanical and materials engineering
Student club	

Comment on Research and Innovation **

* including action time, number of participants, results and any other statistics.
** including performance evaluation on these activities

4. Community Partnership

Activities Implemented	Brief Description*
Smart Jeddah Food truck	
Improvement of Usfan Road	
Water Desilnation company visit	
Forging workshop Al waha	
Comment on Community Partnership **	

* including action time, number of participants, results and any other statistics.
** including performance evaluation on these activities

5. Analysis of Program Activities

(including strengths, Areas for Improvement:, and priorities for improvement)

Strengths :

- **Effective workshop for students' advising**

Areas for Improvement:

- Direct and indirect assessment for every LO is performed via a spreadsheet for accurate assessment and instant feedback
- The community activities were limited and need to be more active

Priorities for Improvement:

- Online workshops can be organized

F. Program Evaluation

1. Evaluation of Courses

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
ENME 101	Engineering graphics	Yes	Course coordinator	CR not submitted, only Excel spreadsheet
ENME 102	Basics workshops	Yes	CLO Survey	Assignments and more tutorials for all the CLOs are recommended to improve the performance of all the CLOs
ENME 203	Dynamics	Yes		More practical classes on 3rd, 5th, 7th, 9th and 11th week will be conducted
ENME 204	Thermodynamics I	Yes		
ENME 205	Fluid mechanics	Yes		
ENME 210	Mechanical Engineering Drawing	Yes		
ENME 212	Mechanics of Materials	Yes		
ENME 313	Mechanical Design	Yes		
ENME 331	Manufacturing Technology	Yes		
ENME 341	Internal Combustion Engines	Yes		
ENME 351	Thermodynamics II	Yes		
ENME 352	Heat Transfer	Yes		
ENME 353	Applied Fluid Mechanics	Yes		
ENME 381	Automatic Control Systems	Yes		
ENME 415	CAD design	Yes		
ENME 455	Mechanical Measurements	Yes		
ENME 454	Refrigeration and A/C I	Yes		
ENME 414	Machine Dynamics & Vibrations	Yes		
ENME 456	Power Plants	Yes		
ENME 457	Pumps and Hydraulics	Yes		
ENME 457	Senior Project	Yes		

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
ENME 442	Automotive Engineering	Yes		
ENME 464	Thermal destination	Yes		
ENME 432	Advanced manufacturing technology	Yes		
ENME 423	Welding technology	Yes		

2. Students Evaluation of Program Quality

Evaluation Date : (May 2020)	**Number of Participants: 6**
Students Feedback	**Program Response**
Strengths: • Academic help and support	Academic help and support % of satisfied students (60%) Average Score (4.25) Learning Evaluation % of satisfied students (60%) Average Score (4.18)
Areas for Improvement:: • Academic advisory •	
Suggestions for improvement: • Libraries and study rooms supported with IT means	

* Attach report on the students evaluation of program quality

3. Other Evaluations

(e.g. Evaluations by independent reviewer, program advisory committee, and stakeholders (e.g., faculty members, alumni, and employers)

Evaluation method : survey	**Date: 10-06-2020**	**Number of Participants : 86**
Summary of Evaluator Review		**Program Response**
Strengths: • •		
Points for Improvements:: • •		
Suggestions for improvement • •		

* Attach independent reviewer's report and stakeholders' survey reports (if any)

4. Key Performance Indicators (KPIs)

List the results of the program key performance indicators (including the key performance indicators required by the National Center for Academic Accreditation and evaluation)

No	KPI	Target Benchmark	Actual Value	Internal Benchmark	Analysis	New Target Benchmark
1	**KPI-P-01: Percentage of achieved indicators of the program operational plan objectives.**	**80%**	**78%**	**85%**		**82%**
2	**KPI -P-02: Evaluate students' quality of learning experiences in the program**	**90 %**	**85 %**	**90 %**		**90 %**
3	**KPI -P-03: Evaluation of students' quality of courses**	**90 %**	**90 %**	**90 %**		**90 %**
4	**KPI -P-04: Virtual completion rate**	**100 %**	**100 %**	**100 %**		**100 %**
5	**KPI -P-05: Retention rate for first year students**	**100 %**	**100 %**	**100 %**		**100 %**
6	**KPI -P-06: The level of performance of students in national tests**	**80 %**	**--**	**85 %**		**--**
7	**KPI -P-07: Employment of graduates and admission to graduate programs**	**75 %**	**70 %**	**80 %**		**80 %**
8	**KPI -P-08: Average number of students per class**	**25**	**19**	**25**	It is intended to reduce the number of students because of COVID- 19	**25**
9	**KPI -P-09 Evaluating recruitment agencies for the efficiency of program graduates**	**80 %**	**80 %**	**85 %**		**85 %**
10	**KPI -P-10: Satisfaction of students with the services provided**	**95 %**	**92 %**	**95 %**		**95 %**

11	**KPI -P-11: Percentage of students to faculty**	**12:1**	**15:1**	**12:1**		**12:1**
12	**KPI -P-12: Percentage of faculty distribution**	**10% Prof 40 % Assoc. Prof 30% Ass Prof 20% Lecturer**	**7.14 % Prof 50 % Assoc. Prof 35.72% Ass Prof 7.14% Lecture r**	**10% Prof 40 % Assoc. Prof 30% Ass Prof 20% Lecturer**		**10% Prof 50 % Assoc. Prof 20% Ass Prof 20% Lecturer**
13	**KPI -P-13: Dropout rate of faculty from the program**	**0 %**	**7.14 %**	**5 %**		**0 %**
14	**KPI -P-14: Percentage of scientific publication of faculty members**	**90 %**	**85.7 %**	**90 %**		**90 %**
15	**KPI -P-15: The rate of research published per faculty member**	**2**	**1.5**	**2**		**2**
16	**KPI -P-16: Quotation rate in court journals for each faculty member**	**12**	**8**	**12**		**12**
Comments on the Program KPIs and Benchmarks results :						

5. Analysis of Program Evaluation

(including strengths, Areas for Improvement:, and priorities for improvement)

Strengths :

- **Number of students/Staff member is appropriate**
- **Staff research are acceptable**

Areas for Improvement:

- Qias or FE exams are not done
- No enough lab rooms especially for engineering graphics and basic workshops courses

Priorities for Improvement:

- Move to the new buildings for more infrastructure and Labs

G. Difficulties and Challenges Faced Program Management

Difficulties and Challenges	Implications on the Program	Actions Taken
Lack of licensed software needed for some courses	**Difficulties in teaching some courses**	**Ask to buy licenses**
Shortage of Lab facilities	**Difficulties in teaching some courses**	**Ask to move to the new buildings as soon as possible**

*Internal and external difficulties and challenges

H. Program Improvement Plan

No.	Priorities for Improvement	Actions	Action Responsibility	Date		Achievement Indicators	Target Benchmark
				Start	End		
1	Moving to the new building, and preparing classrooms suitable for students, as well as workshops and laboratories	**Moving to the new building**	**University of Jeddah**	**--**	**--**	**--**	**--**
2							
3							
4							
5							
6							

I. Report Approving Authority

Council / Committee	
Reference No.	
Date	

J. Attachments :

- **A separate cohort analysis report for male and female sections and for each branch**
- **A report on the program learning outcomes assessment results for male and female sections and for each branch (if any)**
- **A report on the students evaluation of program quality**
- **Independent reviewer's report and other survey reports (if any)**