

Saudi Arabia  
Ministry of Education  
King Khalid University  
Faculty of Engineering



2022-2023

# Student Handbook



Accreditations



Mechanical  
Engineering  
Department

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## 1. Dean's Message



**Dr. Mohammed Khaloufa Al Misfer**

In the name of Allah, the Most Gracious, the Most Merciful, and praise be to Allah, the Lord of the Worlds, and may peace and blessings be upon His servant, His Messenger and His trustee upon His revelation, companion and virtue from among His servants, our Prophet and Master Muhammad bin Abdullah, and upon his family and companions.

The College of Engineering works in all its departments and centers to achieve its mission and the essence of its mission, which is to prepare and create the appropriate environment to ensure the preparation of cadres capable of innovation and the development of new ideas that inspire the vision of the future and achieve leadership and creativity. This college is distinguished by its renewed activities, and its abilities to keep pace with excellence and development , relying on its expertise and capabilities, which it is always proud of. It also contributes to promoting development and building basic foundations to develop

## 2. Message from the Head of the Department



**Dr. Saqr Mubarak Saqr Al-Omari**

My brothers, students of the Department of Mechanical Engineering

Peace be upon you and God's mercy and blessings

I and my colleagues and the faculty members, including doctors, lecturers and teaching assistants, are pleased to welcome you all to the Department of Mechanical Engineering and wish you success and success.

Dear brothers

Since you are the real wealth and human capital to the beloved Kingdom of Saudi Arabia and you are the thinking minds that can

She volunteers her intelligence and energy with the forces of nature and invests what God has deposited in this blessed land of riches and goodness.

To establish the foundations of a better future, and push the wheel of development and renaissance forward in all fields to achieve our Kingdom's ambitious vision 2030, and in an effort by the department to continue continuous excellence, I ask you to work hard.

### 3. About the Department

The Department of Mechanical Engineering is one of the first departments established in the College of Engineering since the beginning of the establishment of the university, in the first semester of the academic year 1422/1423 A.H. Since its inception, the department has always strived for excellence by constantly developing study plans to keep pace with the latest developments in the field of mechanical engineering. The Mechanical Engineering program received the ABET International Accreditation in September 2017 as well as the NCAAA Local Academic Accreditation in 2019.

In line with the latest developments in the field of mechanical engineering, a new study plan has been issued for the Bachelor of Mechanical Engineering program, which consists of 160 credit hours distributed over ten semesters that cover all the requirements of the university (12 credit hours), the college (56 credit hours), and the department (73 credit hours) and covers all the required skills To prepare a distinguished and qualified graduate with skills and information in the field of mechanical engineering with its two tracks (energy engineering, production engineering, and design) that make him able to develop and develop society and implement the Kingdom's ambitious development plans. The plan also offers free courses (5 credit hours) and specialized elective courses (14 credit hours) through which the student's orientation is categorized

into the energy engineering track or production and design engineering. During the preparation of the plan, the following were taken into account:

- Keeping pace with the Kingdom's Vision 2030, which aims to build an educational system linked to the needs of the labor market and seek to bridge the gap between higher education outputs and the requirements of the labor market by providing courses in the proposed study plan that provide educational outcomes and skills that achieve the goals and vision of 2030.
- Full alignment of the learning outcomes of the study plan with the learning outcomes of the National Qualifications Framework (NQF ) and all the requirements of the International Accreditation (ABET) and the local academic accreditation (NCAAA).
- Matching the learning outcomes and skills provided by the plan with the skills measured at the National Center for Measurement as well as the outputs and skills required by the Saudi Council of Engineers. These skills include the knowledge and cognitive skills required for the specialization of Mechanical Engineering in its tracks, in addition to the following skills:
  - Communication skills , information technology, and arithmetic (numerical) skills.
  - Interpersonal skills and responsibility.
  - Problem-solving skills.
  - Continuous learning and performance improvement skills.

## 4. Vision, Mission and Objectives of the Department

### Vision

To achieve academic and technological leadership in the field of mechanical engineering and to contribute through academic and applied research and participation in the development of the community.

### Mission

Preparing qualified engineers capable of developing, innovating, and competing in the field of mechanical engineering, participating in scientific research and community service.

### Objectives

- Preparing graduates with a high-quality education to be creative, distinguished and capable of managing industrial facilities.
- Prepare graduates who are able to develop their personal and professional skills through continuous learning.
- To prepare graduates who are able to apply their academic and research skills in the field of mechanical engineering.
- Prepare graduates who are able to participate effectively in the sustainable development of society.

## Study Plan (Arabic Version) .5

رمز المقرر	اسم المقرر	الساعات المعتمدة				المتطلب المتزامن (إن وجد)	متطلب سابق (إن وجد)
		نظري	عملي	مجموع	اتصال		
<b>السنة الأولى - المستوى الأول</b>							
011-نجل-6	برنامج اللغة الانجليزية المكثف -1	-	6	6	12	--	--
107-كيم-4	كيمياء عامة	3	1	4	5	--	--
119-رياض-3	تفاضل وتكامل-1	3	-	3	3	--	--
111-سلم-2	المدخل الى الثقافة الإسلامية	2	-	2	2	--	--
201-عرب-2	المهارات اللغوية	2	-	2	2	--	--
المجموع		10	7	17	24		
<b>السنة الأولى - المستوى الثاني</b>							
012-نجل-6	برنامج اللغة الانجليزية المكثف -2	-	6	6	12	011-نجل-6	--
104-حال-2	علوم الحاسب	1	1	2	3	--	--
219-رياض-3	فاضل وتكامل-2	3	-	3	3	119-رياض-3	--
129-فيز-4	يزياء -1	3	1	4	5	--	--
112-سلم-2	ثقافة الإسلامية -2	2	-	2	2	--	--
المجموع		9	8	17	25		
<b>السنة الثانية - المستوى الثالث</b>							
111-همم-3	رسم هندسي	-	3	3	6	--	--
211-همم-3	علم المواد	2	1	3	4	129-فيز-4	--
212-همم-2	بيكانيا هندسية (استاتيكا)	2	-	2	2	107-كيم-4	--
211-همم-2	مهارات تعلم	2	-	2	2	--	--
219-فيز-4	يزياء -2	3	1	4	5	129-فيز-4	--
229-رياض-3	فاضل وتكامل-3	3	-	3	3	219-رياض-3	--
المجموع		12	5	17	22		
<b>السنة الثانية - المستوى الرابع</b>							
221-همم-3	تكنولوجيا الإنتاج والورش	1	2	3	5	111-همم-3	--
222-همم-3	ديناميكا حرارية -1	2	1	3	4	129-فيز-4	--
223-همم-3	مقاومة المواد واختباراتها	2	1	3	4	119-رياض-3	--
221-همم-2	الإبداع و الابتكار	2	-	2	2	211-همم-3	--
202-عرب-2	التحرير العربي	2	-	2	2	--	--
222-همم-2	برمجة هندسية	1	1	2	3	104-حال-2	--
319-رياض-3	معادلات تفاضلية	3	-	3	3	219-رياض-3	--
المجموع		13	5	18	23		
<b>السنة الثالثة - المستوى الخامس</b>							

--	211-همك-3 221-همك-3	4	3	1	2	عمليات قطع المعادن	3-همك-311
--	3-همم-111	5	3	2	1	رسم ميكانيكي	3-همك-312
--	--	2	2	-	2	ميكانيكا هندسية (ديناميكا)	2-همك-313
--	129-فيز-4 119-رياض-3	4	3	1	2	هندسة كهربائية -1	3-كهر-218
--	--	2	2	-	2	الثقافة الإسلامية -3	2-سلم-113
--	--	3	3	-	3	الجبر الخطي	3-رياض-329
--	012-نجل-6	2	2	-	2	كتابة التقارير الفنية	2-نجل-301
		22	18	4	14	المجموع	
السنة الثالثة - المستوى السادس							
--	212-همك-2 313-همك-2	4	3	1	2	نظرية آلات	3-همك-321
--	3-همك-222	4	3	1	2	ميكانيكا الموائع	3-همك-322
--	3-كهر-218	4	3	1	2	هندسة كهربائية -2	3-كهر-328
--	3-رياض-319	3	3	-	3	طرق عددية	3-رياض-419
--	--	2	2	-	2	مبادئ الإحصاء والاحتمالات	2-إحص-329
--	--	2	2	-	2	الثقافة الإسلامية -4	2-سلم-114
		19	16	3	13	المجموع	
التدريب الصيفي							
--	اجتياز 95 ساعة معتمدة	0	0	0	0	التدريب الصيفي	0-همك-400
السنة الرابعة - المستوى السابع							
--	3-همك-223 3-همك-312	4	3	1	2	تصميم أجزاء ماكينات	3-همك-411
--	3-همك-211 3-همك-221	4	3	1	2	عمليات تشكيل معادن	3-همك-412
--	3-همك-322	4	3	1	2	انتقال الحرارة	3-همك-413
--	3-همك-321	3	2	1	1	أجهزة قياس	2-همك-414
--	--	2	2	-	2	أخلاقيات وممارسة المهنة	2-همم-411
--	--	3	3	-	3	مقرر حر-1	XXX
		20	16	4	12	المجموع	
السنة الرابعة - المستوى الثامن							
--	3-همك-411	4	3	1	2	تصميم الات	3-همك-421
--	3-همك-222	4	3	1	2	ديناميكا حرارية-2	3-همك-422
--	3-همك-322	4	3	1	2	آلات هيدروليكية وأنظمة طاقة الموائع	3-همك-423
--	3-همك-321 3-رياض-319	4	3	1	2	ديناميكا النظم والاهتزازات الميكانيكية	3-همك-424
--	--	2	2	-	2	الاقتصاد الهندسي	2-حصن-311
--	--	2	2	-	2	مقرر اختياري-1	
		20	16	4	12	المجموع	
المستوى التاسع- السنة الخامسة							

--	424-همك-3	4	3	1	2	أنظمة التحكم	511-همك-3
--	اجتياز 125 ساعة معتمدة	2	2	-	2	مشروع تخرج-1	512-همك-2
--	--	2	2	-	2	ريادة الأعمال الهندسية	511-همك-2
--	--		3			مقرر اختياري-2	
--	--		3			مقرر اختياري-3	
--	--	2	2	-	2	مقرر حر-2	XXX
			15			المجموع	
السنة الخامسة - المستوى العاشر							
--	512-همك-2	2	2	-	2	مشروع تخرج-2	521-همك-2
--	--	2	2	-	2	الإدارة الهندسية	411-همك-2
--	--		3			مقرر اختياري-4	
--	--		3			مقرر اختياري-5	
			10			المجموع	

### المقررات الاختيارية

يتم اختيار المقررات الاختيارية (2) و (3) و (4) و (5) طبقاً للاتي :

- 1- الطالب الراغب في مسار هندسة القوى: يختار مقررات هندسة القوى فقط من قائمة المقررات الاختيارية
- 2- الطالب الراغب في مسار هندسة التصميم و الإنتاج: يختار مقررات هندسة التصميم و الإنتاج فقط من قائمة المقررات الاختيارية
- 3- الطالب الراغب في مسار عام: يختار المقررات الاختيارية دون التقيد بأي مسار

#### قائمة مقرر اختياري-1

رمز المقرر	اسم المقرر	الساعات المعتمدة				متطلب سابق (إن وجد)	المتطلب المتزامن (إن وجد)
		نظري	عملي	مجموع	اتصال		
321-همك-2	إدارة المعرفة	2	-	2	2	--	
322-همك-2	التفكير التصميمي	2	-	2	2	--	
323-همك-2	ديناميكا النظم	2	-	2	2	--	

#### قائمة المقررات الاختيارية 2 و 3 و 4 و 5

المسار	رمز المقرر	اسم المقرر	الساعات المعتمدة				متطلب سابق (إن وجد)	المتطلب المتزامن (إن وجد)
			نظري	عملي	مجموع	اتصال		
هندسة القوى	531-همك-3	محركات الاحتراق الداخلي	2	1	3	4	3-همك-413	
	532-همك-3	تحويل الطاقة	3	-	3	3	3-همك-422	
	533-همك-3	محطات الطاقة	2	1	3	4	3-همك-413	
	541-همك-3	المباني الموفرة للطاقة	3	-	3	3	3-همك-413	
	542-همك-3	تحلية المياه	3	-	3	3	3-همك-422	
	543-همك-3	التبريد وتكييف الهواء	2	1	3	4	3-همك-413	
	534-همك-3	التصنيع بمساعدة الحاسب	2	1	3	4	3-همك-311	
هندسة التصميم والإنتاج	535-همك-3	السلوك الميكانيكي للمواد	2	1	3	4	3-همك-211	
	536-همك-3	مواد مركبة	3	-	3	3	3-همك-211	
	544-همك-3	أساسيات المعالجة الحرارية	2	1	3	4	3-همك-211	
	545-همك-3	تحليل العناصر المحدودة في التصميم الميكانيكي	1	2	3	5	3-همك-421 3-همك-419-رياضة	
	546-همك-3	تكنولوجيا النانو	3	-	3	3	3-همك-211	

## (English Version) Study Plan .6

Course Code	Course Title	Weekly Distribution of Credit Hours				Prerequisites
		Lectures	Lab	Credit Hours	Contact Hour	
<b>First Year - First Level</b>						
011-ENG-6	Intensive English Program-1	-	6	6	12	--
107-CHEM- 4	General Chemistry	3	1	4	5	--
119-MATH-3	Differentiation and Integration-1	3	-	3	3	--
111-ICI-2	The Entrance to the Islamic Culture	2	-	2	2	--
201-ARAB-2	Language Skills	2	-	2	2	--
<b>Total Number of Hours</b>		<b>10</b>	<b>7</b>	<b>24</b>	<b>17</b>	
<b>First Year – Second Level</b>						
012-ENG-6	Intensive English Program-2	-	6	6	12	011-ENG-6
104-CMS-2	Computer Science	1	1	2	3	--
219-MATH-3	Differentiation and Integration-2	3	-	3	3	119-MATH-3
129-PHYS-4	Physics-1	3	1	4	5	--
112-IC1-2	Islamic Culture-2	2	-	2	2	--
<b>Total Number of Hours</b>		<b>9</b>	<b>8</b>	<b>17</b>	<b>25</b>	
<b>Second Year – Third Level</b>						
111-GE-3	Engineering Drawing	-	3	3	6	--
211-ME-3	Material Science	2	1	3	4	129-PHYS-4 107-CHEM- 4
212-ME-2	Engineering Mechanics (statics)	2	-	2	2	--
211-GE-2	Learning skills	2	-	2	2	--
219-PHYS-4	Physics-2	3	1	4	5	129-PHYS-4
229-MATH- 3	Differentiation and Integration-3	3	-	3	3	219-MATH-3
<b>Total Number of Hours</b>		<b>12</b>	<b>5</b>	<b>17</b>	<b>22</b>	
<b>Second Year – Fourth Level</b>						
221-ME-3	Production Technology and Workshop	1	2	3	5	111-GE-3
222-ME-3	Thermodynamics-1	2	1	3	4	129-PHYS-4 119-MATH-3
223-ME-3	Strength of Materials & Testing	2	1	3	4	211-ME-3
221-GE-2	Creativity and Innovation	2	-	2	2	--
202-ARAB-2	Arabic Writing	2	-	2	2	--
222-GE-2	Engineering Programming	1	1	2	3	104-CMS-2
319-MATH- 3	Differential Equations	3	-	3	3	219-MATH-3

Total Number of Hours		13	5	18	23	
<b>Third Year – Fifth Level</b>						
311-ME-3	<u>Metal Cutting Processes</u>	2	1	3	4	211-ME-3 221-ME-3
312-ME-3	<u>Mechanical Engineering Drawing</u>	1	2	3	5	111-GE-3
313-ME-2	<u>Engineering Mechanics (dynamics)</u>	2	-	2	2	--
218-EE-3	Electric Engineering-1	2	1	3	4	129-PHYS-4 119-MATH-3
113-IC1-2	Islamic Culture-3	2	-	2	2	--
329-MATH- 3	Linear Algebra	3	-	3	3	--
301-NGL-2	Technical Reports Writing	2	-	2	2	012-ENG-6
<b>Total Number of Hours</b>		<b>14</b>	<b>4</b>	<b>18</b>	<b>22</b>	
<b>Third Year – Sixth Level</b>						
321-ME-3	<u>Theory of Machines</u>	2	1	3	4	212-ME-2 313-ME-2
322-ME-3	<u>Fluid Mechanics</u>	2	1	3	4	222-ME-3
328-EE-3	Electric Engineering-2	2	1	3	4	218-EE-3
419-MATH-3	Numerical Methods	3	-	3	3	319-MATH- 3
329-STAT-2	Principles of Statistics and Probability	2	-	2	2	--
114-IC1-2	Islamic Culture-4	2	-	2	2	--
<b>Total Number of Hours</b>		<b>13</b>	<b>3</b>	<b>16</b>	<b>19</b>	
<b>Summer Internship</b>						
400-ME-0	Summer Internship	0	0	0	0	Completion of 95 credit hours
<b>Fourth Year–Seventh Level</b>						
411-ME-3	<u>Machine Elements Design</u>	2	1	3	4	223-ME-3 312-ME-3
412-ME-3	<u>Metal Forming Processes</u>	2	1	3	4	211-ME-3 221-ME-3
413-ME-3	<u>Heat Transfer</u>	2	1	3	4	322-ME-3
414-ME-2	<u>Measuring Devices</u> Engineering	1	1	2	3	321-ME-3
411-GE-2	<u>Professional Ethics and practice</u>	2	-	2	2	--
xxx	Free course- 1	3	-	3	3	--
<b>Total Number of Hours</b>		<b>12</b>	<b>4</b>	<b>16</b>	<b>20</b>	
<b>Fourth Year– Eighth Level</b>						
421-ME-3	<u>Machine Design</u>	2	1	3	4	411-ME-3
422-ME-3	<u>Thermodynamics-2</u>	2	1	3	4	222-ME-3
423-ME-3	<u>Hydraulic Machines &amp; Fluid Power Systems</u>	2	1	3	4	322-ME-3
424-ME-3	<u>System Dynamics &amp; Mechanical Vibrations</u>	2	1	3	4	321-ME-3 319-MATH- 3
311-INE-2	Engineering Economy	2	-	2	2	--
	Elective-1	2	-	2	2	--
<b>Total Number of Hours</b>		<b>12</b>	<b>4</b>	<b>16</b>	<b>20</b>	
<b>Fifth Year–Ninth Level</b>						
511-ME-3	<u>Control Systems</u>	2	1	3	4	424-ME-3

512-ME-2	<u>Senior Design Project-1</u>	2	-	2	2	Completion of 125 credit hours
511-GE-2	Engineering Entrepreneurship	2	-	2	2	--
	Elective -2			3		--
	Elective -3			3		--
xxx	Free course-2	2	-	2	2	--
<b>Total Number of Hours</b>				<b>15</b>		
<b>Fifth Year–Tenth Level</b>						
521-ME-2	<u>Senior Design Project-2</u>	2	-	2	2	512-ME-2
411-INE-2	Engineering Managements	2	-	2	2	
	Elective-4			3		
	Elective-5			3		
<b>Total Number of Hours</b>				<b>10</b>		

## Elective courses

Elective courses (2), (3), (4) and (5) are selected according to the following:

- 1 - **Students interested in power engineering path:** choose the courses of power engineering path only from the list of elective courses
- 2 - **Students interested in engineering design and production path:** Choose the courses of engineering design and production path only from the list of elective courses
- 3 - **Students interested in general path:** choose elective courses without follow any path

### List of Elective course -1

Course Code	Course Title	Weekly Distribution of Credit Hours				Prerequisites
		Lectures	Lab	Credit Hours	Contact Hour	
<b>First Year - First Level</b>						
321 GE-2	Knowledge Management	2	-	2	2	--
322 GE-2	Design Thinking	2	-	2	2	--
323 GE-2	System Dynamics	2	-	2	2	--

### List of Elective courses (2), (3), (4) and (5)

Path	Course Code	Course Title	Weekly Distribution of Credit Hours				Prerequisites
			Lectures	Lab	Credit Hours	Contact Hour	
Power Engineering	531-ME-3	<u>Internal Combustion Engines</u>	2	1	3	4	413-ME-3
	532-ME-3	<u>Energy Conversion</u>	3	-	3	3	422-ME-3
	533-ME-3	<u>Power Plants</u>	2	1	3	4	413-ME-3
	541-ME-3	<u>Energy Efficient Buildings.</u>	3	-	3	3	413-ME-3
	542-ME-3	<u>Desalination</u>	3	-	3	3	422-ME-3
	543-ME-3	<u>Refrigeration and Air Conditioning</u>	2	1	3	4	413-ME-3
Design and Production Engineering	534-ME-3	<u>Computer Aided Manufacturing</u>	2	1	3	4	311-ME-3
	535-ME-3	<u>Mechanical Behavior of Materials</u>	2	1	3	4	211-ME-3
	536-ME-3	<u>Composite Material</u>	3	-	3	3	211-ME-3
	544-ME-3	<u>Fundamentals of Heat Treatment</u>	2	1	3	4	211-ME-3
	545-ME-3	<u>Finite Element Analysis in Mechanical Design</u>	1	2	3	5	421-ME-3 419-MATH-3
	546-ME-3	<u>Nano technology</u>	3	-	3	3	211-ME-3









## 7. Faculty Members

	
<p>Saqr Mubarak Saqr Al-Omari  <a href="https://goo.gl/maps/zcBYs9yz4YFfnQC79">https://goo.gl/maps/zcBYs9yz4YFfnQC79</a></p>	<p>Salem Ahmed Mohammed Al , Qarni  <a href="https://goo.gl/maps/ynFvZVbQMJpfirwy5">https://goo.gl/maps/ynFvZVbQMJpfirwy5</a></p>
	
<p>Ali Muhammad Ali Al Khuzaim Al Qahtani  <a href="https://maps.app.goo.gl/Nu2hqf9goJQ4oE4WA">https://maps.app.goo.gl/Nu2hqf9goJQ4oE4WA</a></p>	<p>Ali Issa Mohammed Anghi  <a href="https://goo.gl/maps/ynFvZVbQMJpfirwy5">https://goo.gl/maps/ynFvZVbQMJpfirwy5</a></p>
	
<p>Saeed Thamer Mohammed Al Thamer  <a href="https://goo.gl/maps/3ANDcBCuyXj1WksSA">https://goo.gl/maps/3ANDcBCuyXj1WksSA</a></p>	<p>Amir Ibrahim Ali Arabi  <a href="https://maps.app.goo.gl/6sgd6PFsJsPAYH8ZA">https://maps.app.goo.gl/6sgd6PFsJsPAYH8ZA</a></p>
	
<p>Fawzi bin Bashir Askari  <a href="https://goo.gl/maps/44Eao6hcSPvDsYHK6">https://goo.gl/maps/44Eao6hcSPvDsYHK6</a></p>	<p>Ahmed Saeed Abd El , Hafiz Zeidan  <a href="https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8">https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8</a></p>

	
<p>Abelach Ida Cherin  <a href="https://goo.gl/maps/8rJSzbdVqYag1AgYA">https://goo.gl/maps/8rJSzbdVqYag1AgYA</a></p>	<p>Mohamed Abdulaziz Sayed Mohamed  <a href="https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8">https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8</a></p>
	
<p>Bayoumi Taha Abd El , Muati Al , Assal  <a href="https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8">https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8</a></p>	<p>Mustafa Abdul Muhaimen Hussein  <a href="https://goo.gl/maps/qHrNgmBkbe7LgXEP8">https://goo.gl/maps/qHrNgmBkbe7LgXEP8</a></p>
	
<p>Mohamed Abdulghani Al-Qutb Abdul Ghani  <a href="https://goo.gl/maps/qHrNgmBkbe7LgXEP8">https://goo.gl/maps/qHrNgmBkbe7LgXEP8</a></p>	<p>Amir Bin Mohammed Al-Constantini  <a href="https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8">https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8</a></p>
	
<p>Ibrahim Elsayed Awwad El-Sisi  <a href="https://goo.gl/maps/ynFvZVbQMJpfrwy5">https://goo.gl/maps/ynFvZVbQMJpfrwy5</a></p>	<p>Ahmed Salil Shandu Fateel  <a href="https://goo.gl/maps/8rJSzbdVqYag1AgYA">https://goo.gl/maps/8rJSzbdVqYag1AgYA</a></p>

	
<b>Vinette Tert</b> <a href="https://goo.gl/maps/ynFvZVbQMJpfirwy5">https://goo.gl/maps/ynFvZVbQMJpfirwy5</a>	<b>Irfanangzimbaddudin Magami</b> <a href="https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8">https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8</a>
	
<b>Mohamed Abdul Bastaliusfi</b> <a href="https://goo.gl/maps/qHrNgmBkbe7LgXEP8">https://goo.gl/maps/qHrNgmBkbe7LgXEP8</a>	<b>Munther Wali</b> <a href="https://goo.gl/maps/3ANDcBCuyXj1WksSA">https://goo.gl/maps/3ANDcBCuyXj1WksSA</a>
	
<b>Fahmi Al-Bashir Ali Qamoun</b> <a href="https://goo.gl/maps/3ANDcBCuyXj1WksSA">https://goo.gl/maps/3ANDcBCuyXj1WksSA</a>	<b>Muhammad Yunus Khan</b> <a href="https://goo.gl/maps/8rJSzbdVqYag1AgYA">https://goo.gl/maps/8rJSzbdVqYag1AgYA</a>
	
<b>Safaraz Kammergar Abdul Ghani Sahib</b> <a href="https://goo.gl/maps/8rJSzbdVqYag1AgYA">https://goo.gl/maps/8rJSzbdVqYag1AgYA</a>	<b>Syed Javed Jaffar</b> <a href="https://goo.gl/maps/iR9tnFyzxmffwkS7">https://goo.gl/maps/iR9tnFyzxmffwkS7</a>

	
<p><b>Sultan Dahman Mohammed Al Shehri</b>  <a href="https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8">https://maps.app.goo.gl/8kqsPiL4s6JDgRYE8</a></p>	<p><b>Ali Ahmed Yahya Rajhi</b>  <a href="https://goo.gl/maps/qHrNgmBkbe7LgXEP8">https://goo.gl/maps/qHrNgmBkbe7LgXEP8</a></p>
	
<p><b>Saad Ayed Saeed Al-Shahrani</b>  <a href="https://goo.gl/maps/3ANDcBCuyXj1WksSA">https://goo.gl/maps/3ANDcBCuyXj1WksSA</a></p>	<p><b>Dr. Yousefgaza</b>  <a href="https://goo.gl/maps/ZSdKZMVWENyFB8nz5">https://goo.gl/maps/ZSdKZMVWENyFB8nz5</a></p>
	
<p><b>Dr. Sultan Alqahtani</b></p>	<p><b>Dr. Talal Alqahtani</b></p>
<p>College of Engineering</p>	<p>كلية الهندسة KKU</p>
<p><b>Afroz Ahmad Khan Sudagur</b></p>	<p><b>Abd El , Siddiq Sheikh</b></p>

	
<p>Mohamed Shafi Eddin  <a href="https://maps.app.goo.gl/m7VAJnt38gYtEZAk6">https://maps.app.goo.gl/m7VAJnt38gYtEZAk6</a></p>	<p>Sayed Wahidullah Ghori  <a href="https://maps.google.com/?q=18.250568,42.557320">https://maps.google.com/?q=18.250568,42.557320</a></p>
	
<p>Azam Ali Muhammad  <a href="https://goo.gl/maps/zcBYs9yz4YFfnQC79">https://goo.gl/maps/zcBYs9yz4YFfnQC79</a></p>	<p>Suhail Pasha Sayed Pasha  <a href="https://maps.app.goo.gl/zLDePWkpJcv34Nty5">https://maps.app.goo.gl/zLDePWkpJcv34Nty5</a></p>
	
<p>Adel Saad Salman Al Ghouri  <a href="https://maps.app.goo.gl/m7VAJnt38gYtEZAk6">https://maps.app.goo.gl/m7VAJnt38gYtEZAk6</a></p>	<p>Mohamed Ramadan Jamaan Al , Zahrani  <a href="https://maps.google.com/?q=18.250568,42.557320">https://maps.google.com/?q=18.250568,42.557320</a></p>
	
<p>Waleed Saeed Mohammed Al-Muhajri  <a href="https://goo.gl/maps/ynFvZVbQMJpfirwy5">https://goo.gl/maps/ynFvZVbQMJpfirwy5</a></p>	<p>Muhammad Hassan Ali Albarqi  <a href="https://maps.app.goo.gl/zLDePWkpJcv34Nty5">https://maps.app.goo.gl/zLDePWkpJcv34Nty5</a></p>
	
<p>Ahmed Yahya Ibrahim Al Ghanem  <a href="https://maps.app.goo.gl/zLDePWkpJcv34Nty5">https://maps.app.goo.gl/zLDePWkpJcv34Nty5</a></p>	

## 8. Registration

Page	Content
19	What to Know Before You Start the Registration Process .1.7
19	Log in to the Academia system .2.7
20	E-Services in Academia System .3.7
20	View the Laws and Regulations .1.3.7
21	Student Domains .2.3.7
22	Contact the Academic Advisor .3.3.7
23	Register, add, delete and convert sections of courses .4.3.7
23	Review the study schedule .5.3.7
24	Review of Academic Record .6.3.7
25	Tawasul service to process registration status .7.3.7
25	Overview of Forests in Courses .8.3.7
26	View the completed courses in the study plan .9.3.7
27	Apologizing for a Rapporteur .10.3.7
28	View the final exam schedule .11.3.7
28	View the study plan .13.3.7
29	Calculating the expected GPA (quarterly – cumulative) .13.3.7
30	Remaining courses in the study plan .14.3.7
30	Review of course results .15.3.7
30	Introduction of academic movements (apology for the semester and postponement) .16.3.7
31	Change of Specialization .17.3.7
32	Request a visitor for a university student outside his premises (regular semester or summer semester) .18.3.7
33	Print a scene or statement .19.3.7



## 1.7. What to Know Before You Start the Registration Process

The student should know the following before the start of the registration process

- The completed and remaining hours and the cumulative average that allows the student to register in the new semester with a maximum of study units according to the table shown:

Modules	GPA
15	Less than 2
17	2.25 - 2
18	2.99 - 2.26
19	3.5 - 3
20	5 - 3.51

- Prerequisites and higher levels for the courses of the new semester (according to the student's plan).
- Pathways for elective courses (the student can communicate with the academic advisor and discuss it) and free courses – it is very important to know the levels for these courses.
- The possibility of registering the graduation project and summer internship if the registration conditions for each of them are met.
- Zero-level courses that are enrolled and not deleted after enrollment.

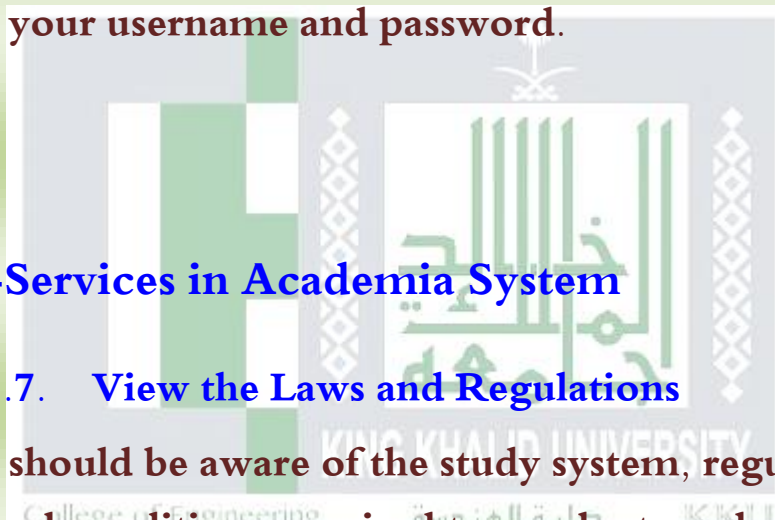
- **Zero Level:** This is the lowest level of courses that the student has not completed.

## 2.7. SIGN IN To Academia System

The student can access the Academia page for e-services provided by the Deanship of Admission and Registration :through the following links

- <https://registration.kku.edu.sa/kku/init>
- **King Khalid University Page**(<https://www.kku.edu.sa>)

Then enter your username and password.



## 3.7. E-Services in Academia System

### 1.3.7. View the Laws and Regulations

Each student should be aware of the study system, regulations, regulations, and conditions required to conduct academic movements during the study and graduation requirements. The student can consult his academic advisor whenever needed.

**Implementation Steps: Academia – Academia – Important Links**

عمادة القبول والتسجيل

الفصل الأول 1442

خطة الطالب

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام

روابط مهمة

روابط مهمة
دليل الطالب
لائحة الدراسة والاختبارات للمرحلة الجامعية وقواعدها التنفيذية في جامعة الملك خالد
دليل استخدام اكاديميا

أكاديمي

- جدول الاختبارات النهائية
- خطة الطالب
- احتساب المعدل المتوقع
- مكتبي
- المكافآت
- نتائج الاختبارات الفصلية
- المقررات المتبقية في الخطة
- إخلاء طرف
- روابط مهمة
- الغياب
- نتائج المقررات
- العقوبات
- السجل الأكاديمي
- المقررات المجتازة في الخطة



### 2.3.7. Student Domains

A service to know the level of academic performance of the student and classify him in ranges according to specific colors

## Implementation Steps : Academia – Click on the box at the top left of the page

خدمة النطاقات الطلابية	
خدمة تتيح توزيع الطلاب ضمن نطاقات يمكن للطلاب من معرفه مستواه ادائه الأكاديمي وفق ألوان محددة كما تم الاتفاق عليه في المقررات المعتمد من مجلس الجامعة	
التصنيف	المميزات او المخاطر
<b>الطبعي</b> معدل من 2.5 - 4	<ul style="list-style-type: none"> <li>- القدرة على رفع المستوى إلى مستوى أعلى.</li> <li>- احتماليه انخفاض المعدل.</li> <li>- خسارة بعض الفرص العليا في التوظيف و الابدعات</li> </ul>
<b>خطر</b> معدل من 2 - 2.5	<ul style="list-style-type: none"> <li>- احتماليه انخفاض المعدل</li> <li>- احتماليه تجاوز المدة المقررة لإنهاء البرنامج والفصل من الجامعة.</li> <li>- احتماليه التعتير.</li> <li>- احتماليه عدم اجتياز الاختبارات التخصصية المطلوبة للتوظيف.</li> </ul>
<b>متعثر</b> اقل من 2	<ul style="list-style-type: none"> <li>- الفصل من الجامعة.</li> <li>- إنهاء الخطة وعدم الحصول على الوثيقة بسبب تدني المعدل.</li> <li>- إمكانية التحويل إلى دبلوم</li> <li>- تسجيل مقررات من خارج الخطة إذا اجتاز المقررات ورسب في المعدل.</li> </ul>
<b>التميز</b> معدل 4.5 فأعلى	<ul style="list-style-type: none"> <li>- زيادة فرص للاستقطاب كمعيد بالجامعة.</li> <li>- زيادة فرص للقبول ببرامج الابدعات أو الدراسات العليا.</li> <li>- التميز على مستوى الجامعة.</li> <li>- زيادة الفرص الوظيفية أكثر.</li> <li>- تكليفه بالعمل في نادي الطلاب الإرشادي</li> <li>- تهيئته ليكون الطالب الخبير في الجامعة</li> <li>- يمنح مرتبة الشرف الأولى في الوثيقة او الثانيه.</li> </ul>
<b>التفوق</b> معدل من 4 - 4.5	<ul style="list-style-type: none"> <li>- زيادة فرص للاستقطاب كمعيد بالجامعة.</li> <li>- زيادة فرص للقبول ببرامج الابدعات أو الدراسات العليا.</li> <li>- التميز على مستوى الجامعة.</li> <li>- فرص وظيفيه أكثر.</li> <li>- تكليفه بالعمل في نادي الطلاب الإرشادي</li> </ul>

### 3.3.7. Contact the Academic Advisor

**Implementation Steps: Academically, Communication, Communication with the Academic Advisor, Entering a new request and writing the text of the thesis with the ability to upload attachments.**



تواصل

الفصل الأول 1442

عمادة القبول والتسجيل

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	منتظم

القسم المختص

[إسمح لك بإدخال 350 حرف فقط]

نص الطلب

عدد الحروف المتبقية للإدخال (350)

No file chosen Choose File المرفقات

- أكاديمي
- خدماتي
- التسجيل الإلكتروني
- بياناتي
- شخصي
- تواصل

إرسال بريد إلكتروني

التواصل مع المرشد الأكاديمي

تواصل

تقييم المحاضرين

طلب حذف وإضافة مقرر

- طلباتي
- نماذج

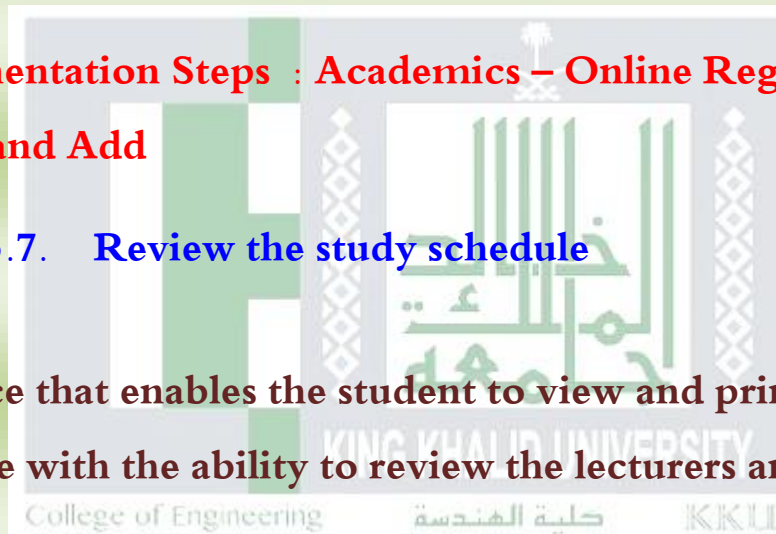
#### **4.3.7. Register Or add, delete and convert divisions to courses**

A service that enables the student to register the semester courses at the beginning of each semester at a specific time (review the academic calendar for the semester).

**Implementation Steps : Academics – Online Registration – Delete and Add**

#### **5.3.7. Review the study schedule**

A service that enables the student to view and print the study schedule with the ability to review the lecturers and halls of the divisions



**Implementation Steps: Academically – Online Registration – Schedule**

صفحة: جدول الطالب | الفصل الأول 1442

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	التظام
منتظم		

\* ملاحظة : المقررات بالانفاق لا تظهر في هذا الجدول

جدول الطالب - الفصل الأول 1442

الوقت	الاسم	الدرجة	الاسم	الدرجة	الاسم	الدرجة
8.00 - 9.00	107-فيز4	8.00				
9.00 - 10.00						
10.00 - 10.50	129-فيز4	10.00				
10.00 - 10.50	129-فيز4	10.00				
10.00 - 12.00	221-معم2	10.00				
10.00 - 10.50	129-فيز4	10.00				

الخدمات الإلكترونية

المقررات المقروحة وفق الخطة

زائر لطالب الجامعة خارج مقره ( فصل امتحائي - صيفي )

جدولي

الهدف والاضافة

- بياناتي
- شخصي
- تواصل
- طلباتي
- تحتاج

### 6.3.7. Review of Academic Record

Implementation Steps: Academics – Academics – Academic Record



اسم الطالب	البراء كمال عبدالرحيم عبدالله	الكلية	الهندسة
رقم الطالب	441813860	التخصص	هندسة مدنية
الوضع العام	منتظم	نوع الدراسة	انتظام

عدد إجازات الطالب : 0			
الفصل الأول 1442 (421)		الوضع الأكاديمي : منتظم	
التخصص : هندسة مدنية		نوع الخطة : رئيسي	
عدد الإجازات : 0			
رمز المقرر	اسم المقرر	التقدير	النقاط
4-كيم107	كيمياء عامة	4	4
2-سلم114	الثقافة الاسلامية 4-	2	2
4-فيز129	فيزياء 1-	4	4
2-عرب202	التحري العربي	2	2
2-معم211	مهارات تعلم	2	2
2-معم221	الإبداع والابتكار	2	2

أكاديمي
جدول الاختبارات النهائية
خطة الطالب
احتماب المعدل المتوقع
مكتبي
المكافآت
نتائج الاختبارات الفصلية
المقررات المتبقية في الخطة
إخلاء طرف
روابط مهمة
الغياب
نتائج المقررات
العقوبات
السجل الأكاديمي
المقررات المجتازة في الخطة



### 7.3.7. Tawasul service to process registration status

A service that enables the student to submit an electronic request after closing the registration service through the

electronic portal at a specific time to process the study schedule

## Implementation Steps: Academics – Communication – Request to Delete and Add a Course

### 8.3.7. View absences in courses

## Implementation Steps: Academics – Academics – Absence

السجل الأكاديمي الفصل الأول 1442

اسم الطالب	البراه كمال عبدالرحيم عبدالله	الكلية	الهندسة
رقم الطالب	441813860	التخصص	هندسة مدنية
الوضع العام	منتظم	نوع الدراسة	انتظام

عدد إجازات الطالب : 0

الفصل الأول 1442 (421) الوضع الأكاديمي : منتظم

التخصص : هندسة مدنية	نوع الخطة : رئيسي	عدد الإجازات : 0		
رمز المقرر	اسم المقرر	التقدير	الساعات	النقاط
107-كيم4	كيمياء عامة		4	
114-سلم2	الثقافة الاسلامية-4		2	
120-فيز4	فيزياء 1-		4	
202-عرب2	التحري العربي		2	
211-معم2	مهارات تعلم		2	
221-معم2	الابداع والابتكار		2	

أكاديمي

- جدول الاختبارات النهائية
- خطة الطالب
- احتماب المعدل المتوقع
- مكتبي
- المكافآت
- نتائج الاختبارات الفصلية
- المقررات المتبقية في الخطة
- إخلاء طرف
- روابط مهمة
- الغياب
- نتائج المقررات
- العقوبات
- السجل الأكاديمي
- المقررات الممتازة في الخطة

### 9.3.7. View Courses Passed in the Study Plan

## Implementation Steps: Academics – Academics – Completed Courses in the Study Plan

عمادة القبول والتسجيل

الفصل الأول 1442

نتائج المقررات

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام

الفصل الأول 1442

رمز المقرر	اسم المقرر	التقدير	النقاط
114-سلم-2	الثقافة الاسلامية-4		
202-عرب-2	التحرير العربي		
107-كيم-4	كيمياء عامة		
129-فيز-4	فيزياء-1		
229-رياض-3	تفاضل وتكامل-3		
211-معم-2	مهارات تعلم		
221-معم-2	الإبداع والابتكار		

أكاديمي

- جدول الاختبارات النهائية
- خطة الطالب
- احتماب المعدل المتوقع
- مكتبي
- المكافآت
- نتائج الاختبارات الفصلية
- المقررات المنبثقة في الخطة
- إخلاء طرف
- روابط مهمة
- الغياب
- نتائج المقررات
- العقوبات
- السجل الأكاديمي
- المقررات المجتازة في الخطة

### 10.3.7. Apologizing for a Rapporteur

## Implementation Steps: Academically, My Services, Apologizing for a Course



# عمادة القبول والتسجيل

الفصل الأول 1442

الاعتذار عن مقرر

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام

الساعات	اسم المقرر	رمز المقرر	
2	الثقافة الاسلامية-4	114سلم-2	<input type="checkbox"/>
2	التحرير العربي	202عرب-2	<input type="checkbox"/>
4	كيمياء عامة	107كيم-4	<input type="checkbox"/>
4	فيزياء-1	129فيز-4	<input type="checkbox"/>
3	تفاضل وتكامل-3	229رياض-3	<input type="checkbox"/>
2	مهارات تعلم	211معم-2	<input type="checkbox"/>
2	الإبداع والابتكار	221معم-2	<input type="checkbox"/>

أكاديمي

خدماتي

تحويل درجة علمية

طلب إسقاط من الجامعة

إستمارة الطالب الزائر خارج الجامعة

الاعتذار عن مقرر

طلب بطاقة جامعية

تحديد مسار

طلب معادلات خارجية

إدخال حركات أكاديمية

طلب تحديث الأبيان

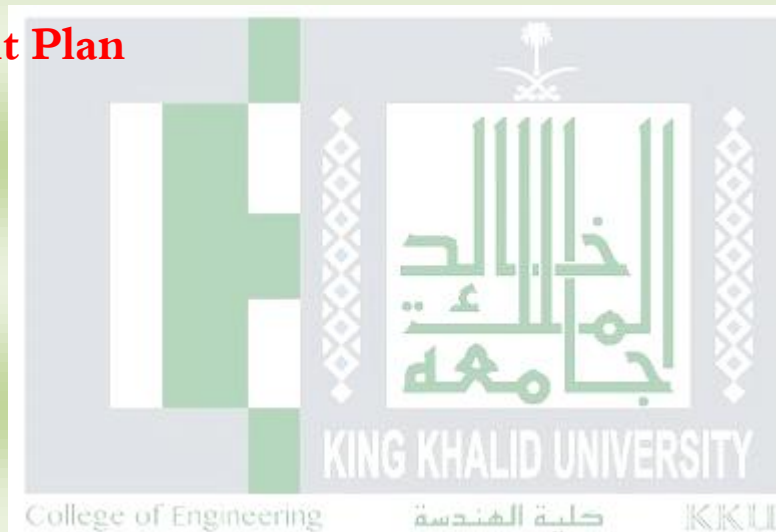
تغيير نوع الدراسة

### 11.3.7. View the final exam schedule

**Implementation Steps: Academics – Academics – Final Exam Schedule**

### 12.3.7. View the study plan

**Implementation Steps: Academically – Academically – Student Plan**



عمادة القبول والتسجيل

الفصل الأول 1442

خطة الطالب

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام

لقد تم تحديث محتوى المقرر يرجى الضغط على اسم المقرر

مجموع الساعات	المقررات المتبقية في الخطة	المقررات المجتازة في الخطة
162	129	33

الأول (1)

الثاني (2)

الثالث (3)

الرابع (4)

الخامس (5)

السادس (6)

السابع (7)

الثامن (8)

التاسع (9)

أكاديمي

جدول الاختبارات النهائية

خطة الطالب

احتمال المعدل المتوقع

مكتبي

المكافآت

نتائج الاختبارات الفصلية

المقررات المتبقية في الخطة

إخلاء طرف

روابط مهمة

الغياب

نتائج المقررات

العقوبات

السجل الأكاديمي

المقررات المجتازة في الخطة

خدماتي

التسجيل الإلكتروني

بياناتي

شخصي

تواصل

طلبياتي

نماذج

KING KHALID UNIVERSITY  
College of Engineering كلية الهندسة KKU

### 13.3.7. Calculating the expected GPA (quarterly – cumulative)

This service allows the student to calculate the expected average through Academia

**Implementation Steps: Academics – Academics – Calculating the Expected Average**

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام
منتظم		



## احتساب المعدل المتوقع

يتم استخدام هذه الخدمة قبل البدء في رصد الدرجات النهائية من قبل مدرس المقرر وفي حال تم رصد أي درجة وتم استخدام الخدمة فإن نتائج احتساب المعدل ستكون غير صحيحة

الدرجة المتوقعة	اسم المقرر	رمز المقرر
<input type="text"/>	الثقافة الاسلامية-4	114-سلم-2
<input type="text"/>	التحرير العربي	202-عرب-2
<input type="text"/>	كيمياء عامة	107-كيم-4
<input type="text"/>	فيزياء-1	129-فيز-4
<input type="text"/>	تفاضل وتكامل-3	229-رياض-3
<input type="text"/>	مهارات تعلم	211-معم-2
<input type="text"/>	الابداع والابتكار	221-معم-2

المعدل التراكمي : 0.0

المعدل الفصلي : 0.0

حساب المعدل

أكاديمي
جدول الاختبارات النهائية
خطة الطالب
احتساب المعدل المتوقع
مكتبي
المكافآت
نتائج الاختبارات الفصلية
المقررات المتبقية في الخطة
إخلاء طرف
روابط مهمة
الغياب
نتائج المقررات
العقوبات
السجل الأكاديمي
المقررات المحذرة في الخطة
خدماتي
التسجيل الإلكتروني
بياناتي
شخصي
تواصل
طلبياتي
نماذج

### 14.3.7. Remaining courses in the study plan

## Implementation Steps: Academics – Academics – Remaining Courses in the Plan

### 15.3.7. Review of course results

## Implementation Steps: Academically – Academically – Course Results

### 16.3.7. Introduction of academic actions (apology for the semester and postponement)

## Implementation Steps: Academics – My Services – Introduction of Academic Movements

إدخال حركات أكاديمية

عمادة القبول والتسجيل

الفصل الأول 1442

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام
منتظم		

نوع الحركة

السبب

الاعتذار عن الفصل الدراسي

أخر من القائمة

التالي

أكاديمي

خدماتي

تحويل درجة علمية

طلب إسقاط من الجامعة

إستمارة الطالب الزائر خارج الجامعة

الإعتذار عن مقرر

طلب بطاقة جامعية

تحديد مسار

طلب معادلات خارجية

إدخال حركات أكاديمية

### 17.3.7. Change of Specialization

A service that enables the student to take an electronic view to change the specialization

### Implementation Steps: Academics – Services – Change of Specialization

The screenshot shows the 'عمادة القبول والتسجيل' (Admission and Registration Office) portal. The page title is 'الفصل الأول 1442'. The main navigation menu includes 'أكاديمي' (Academic) and 'خدمي' (Services). Under 'أكاديمي', there is a sub-menu 'تحويل درجة علمية' (Change of Degree). The 'تحويل درجة علمية' sub-menu is expanded, showing a list of services: 'طلب إنسحاب من الجامعة', 'إستمارة الطالب الزائر خارج الجامعة', 'الإعتذار عن مقرر', 'طلب بطاقة جامعية', 'تحديد مسار', 'طلب معادلات خارجية', 'إدخال حركات أكاديمية', 'طلب تحديث التبيان', 'تغيير نوع الدراسة', 'إعادة التصحيح', and 'تغيير تخصص' (Change of Specialization), which is highlighted with a red box. On the left side, there is a table with columns for 'اسم الطالب', 'رقم الطالب', 'الوضع العام', 'الكلية', 'التخصص', 'نوع الدراسة', and 'الهندسة'. Below the table, there is a link 'طلب تغيير تخصص'.

اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام

طلب تغيير تخصص

أكاديمي

خدمي

تحويل درجة علمية

طلب إنسحاب من الجامعة

إستمارة الطالب الزائر خارج الجامعة

الإعتذار عن مقرر

طلب بطاقة جامعية

تحديد مسار

طلب معادلات خارجية

إدخال حركات أكاديمية

طلب تحديث التبيان

تغيير نوع الدراسة

إعادة التصحيح

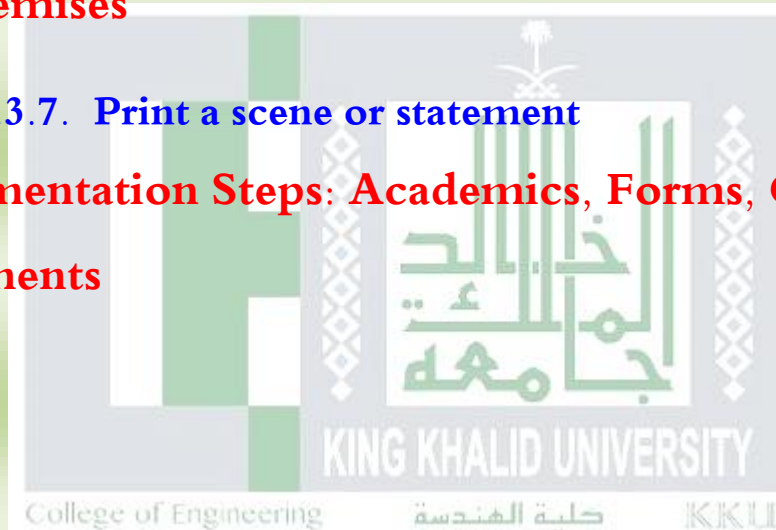
تغيير تخصص

**18.3.7. Request a visitor for a university student outside his premises (regular semester or summer semester)**

**Implementation Steps: Academically, Electronic Registration, Visiting the University Student Outside His Premises**

**19.3.7. Print a scene or statement**

**Implementation Steps: Academics, Forms, Official Documents**



اسم الطالب	الكلية	الهندسة
رقم الطالب	التخصص	
الوضع العام	نوع الدراسة	انتظام
		منتظم

ملاحظة: يرجى التأكد من تفعيل ال Pop-up للموقع في حالة عدم ظهور التقرير.

اسم النموذج	عرض
السجل الأكاديمي	عرض
مشهد لمن يهمة الأمر	عرض
نموذج تحويل خارج الجامعة لجامعة الامام محمد بن سعود الاسلامية	عرض
وثيقة التخرج المؤقتة للكلية الصحية	عرض
مشهد للمتوقع تخرجهم	عرض
إفادة بعدد الساعات المجتازة	عرض
مشهد التأهيل الشامل	عرض
مشهد مقدار مكافأه	عرض
مشهد عدم إستلام مكافأه	عرض
مشهد الإنقطاع عن المكافأه	عرض
مشهد لمن يهمة الأمر - باللغة الإنجليزية	عرض
مشهد بموعد الإختبارات النهائية	عرض
إشعار طالب زائر لمقر آخر	عرض
إفادة بعدد الساعات المجتازة - باللغة الانجليزية	عرض

- أكاديمي
- خدمي
- التسجيل الالكتروني
- بياناتي
- شخصي
- تواصل
- طلباتي
- نماذج

الإصدارات الطلابية

المستندات الرسمية



## 8. Academic Advising

Page	Content
34	Introduction .1.8
34	Excuses .2.8
36	Rules for Apologizing for a Course .1.2.8
36	Rules for apologizing for a semester .2.2.8
37	Re-enrollment controls .3.2.8
37	Rules for Requesting an Alternative Final Exam .4.2.8
38	Rules for requesting an exceptional opportunity .5.2.8
39	Regulations for lifting deprivation .6.2.8
40	Acceptable Excuses for Absence of Lectures and Alternative Semester Tests .7.2.8
40	Models .3.8
41	.Form No. (1) :Apologies for Course .1.3.8
42	.Form No. (2) :Apologizing for a semester .2.3.8
43	.Form No. (3) :Re-enrollment .3.3.8
44	.Form No. (4) :Request for an alternative final exam .4.3.8
45	Request for an Exceptional Opportunity for .Form No. (5) :Academically Dismissed .5.3.8
46	Form No. (6) This form : Request to Lift the Deprivation .6.3.8 is used in the event that there is a deprivation of the student and he has lifted the absence and the course .professor cannot lift the absence from his account
47	.Form No. (8) :Excuse for Absence from Lectures .7.3.8
48	Form No. :Excuse for Absence from the Semester Exam .8.3.8 (9)
49	Form No. (10) This form is used : Student Review Form .9.3.8 in case of the need to submit a personal problem that needs to be presented to the head of the department or .the dean of the college
50	Form No. (12) – Request for Final Test Correction .10.3.8

## 1.8. Introduction

Academic advising is one of the main pillars of the educational process. Academic advising means managing the student's academic life through the academic advisor, who is the primary responsible for the student within the university and the student's main advisor. Therefore, one of the necessary and primary things once the student enters the Department of Mechanical Engineering, is to know , communicate with and get to know the academic advisor. The following academics:

- Assist the student in choosing the courses he or she enrolls in each semester.
- Studying the student's case and the obstacles that may face him and affect his performance in the educational process. He guides the student on the steps that should be followed to solve his problem and contribute to solving it.
- Follow up on the student's activity and attendance in the courses registered with him through Academia.
- Communicating with the professors of the courses taught by the student in case of any problem that may affect the student's performance.
- The student can submit various requests from raising absences, apologies for a course, alternative tests, and others through the academic advisor.

## 2.8. Excuses

Excuses are divided into two types:

- Excuses are presented to the Academic Advising Committee of the College.
- Excuses shall be presented to the Departmental and College Councils.

*First: Excuses presented to the Academic Advising Committee at the College:*

- Excuse for Absence from Lectures (Form No. (8))
- Excuse for Absence from the Semester Exam (Form No. (9)).
- Student Review Form (Form No. (10)), which is used in case of the need to submit a personal problem that needs to be presented to the head of the department or the dean of the college.

You can get these forms through this guide or through the following link

<https://engineering.kku.edu.sa/ar/content/1044>

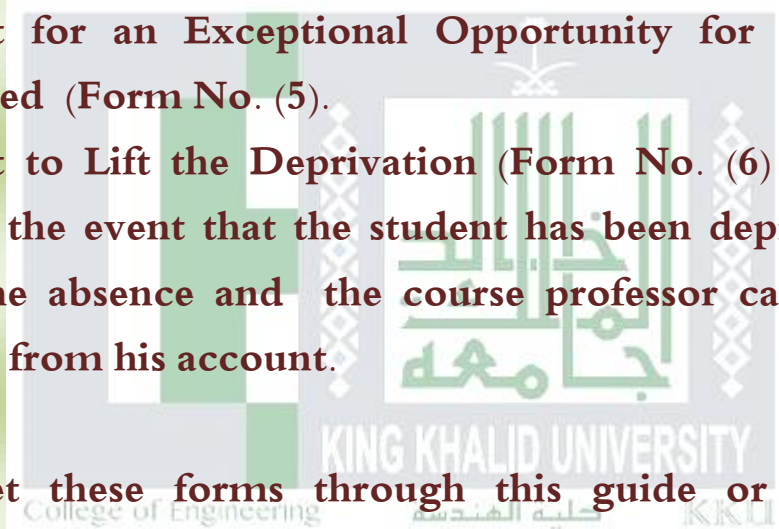
The steps followed to apply are that the student should do the following:

- Fill out the excuse form to be submitted.
- Attach documents proving the excuse occurred.
- Submit all documents to the academic advisor, who in turn attaches the student's academic record and submits the excuse and its attachments to the department's academic advising committee to present and decide on them.

- In the event that the excuse is approved, the committee will address the professors of the courses to take the necessary action.

***Second: Excuses to be presented to the Departmental and Faculty Councils:***

- Apologizing for a Decision (Form No. (1).
- Apologizing for a semester (Form No. (2).
- Re-enrollment (Form No. (3).
- Request for an alternative final exam (Form No. (4).
- Request for an Exceptional Opportunity for Academically Dismissed (Form No. (5).
- Request to Lift the Deprivation (Form No. (6) This form is used in the event that the student has been deprived and has lifted the absence and the course professor cannot lift the absence from his account.



You can get these forms through this guide or through the following link

<https://engineering.kku.edu.sa/ar/content/1044>

The steps followed to apply are that the student should do the following:

- Fill out the excuse form to be submitted.
- Attach the documents that support the submitted excuse.
- Submit all documents to the academic advisor, who in turn attaches the student's academic record and submits the excuse and its attachments to the department's academic

advising committee to present them to the department's and college councils.

- In case the excuse is approved, the student can follow up on his/her academic record to see if his/her status has changed. Except in the case of the alternative final exam, where the committee will address the student directly to notify him of the approval and schedule the exam.

#### **1.2.8. Rules for Apologizing for a Course**

- A student may apologize for only one course automatically.
- The student has the right to submit an apology after the end of the specified period electronically, by submitting a request for an apology for a course to the academic advisor, who in turn presents it to the concerned councils for study.
- The student can apologize for only two courses per semester and not more than 4 courses for the duration of his stay at the university.
- It is not permissible to apologize for a course more than once during the student's studies at the university.
- The student is not entitled to apologize for a course in previous semesters that exceeds one semester for the regular semester in which the student is assigned, nor is he entitled to apologize for a course whose grade has been monitored, and the apology is only for what was assigned to him (H) or (G).

- The minimum number of credits registered for a student after apology must be at least 12 credits.
- Filling out the form does not mean approving the submitted application, and the student must attend the study regularly and follow up on the application on the electronic portal.
- The student will be assigned a grade of (P) or (W) in the apology course(s).

#### 2.2.8. Rules for apologizing for a semester

- The student may automatically apologize for continuing to study a semester without being considered a failure if he submits the apology five weeks before the start of the final exams according to the academic calendar of the university, otherwise the apology request shall be submitted to the academic advisor/head of the department to be presented to the concerned councils.
- If the student submits a request for an apology for a previous semester, the request shall be submitted to the concerned councils, so that the semester to be deleted does not exceed one semester of the regular semester in which the student is not entitled to apologize for that semester and has a subject observed in the same semester.
- The student follows up on the result of the apology request on the electronic portal, and in case the request is not approved, the student is obliged to attend according to the schedule.
- The apologetic student will be assigned a grade withdrawn with an excuse (A, W) in all courses of that semester.

- The apologetic student must continue his automatic registration in the next semester or he will be counted as interrupted.
- The apology period is counted towards the period required to complete the graduation requirements.
- The student has no right to postpone and apologize for more than two consecutive semesters, or three non-consecutive semesters during his stay at the university.

### 3.2.8. Re-enrollment controls

- The application for re-enrollment along with the student's academic record shall be submitted to the Department's Academic Advisor within the first two weeks of the start of the semester.
- The student must submit a request for re-enrollment not more than four semesters from the date of closing the enrollment.
- The College Council must approve the student's re-enrollment within the first two weeks of the start of the semester, and in case the College Council's approval is late for this period, the student will be re-enrolled in the next semester.
- A student may not be re-enrolled more than once, except under exceptional conditions.
- A student may not be re-enrolled if he or she is academically dismissed.
- The student must not have committed serious violations in his behavior during the interruption period.

- The student must not have enrolled in another university during the interruption period and has been dismissed from it for a disciplinary or academic term.
- The applicant must obtain a reference approval for the study, if he works in a government or private entity.
- It is not permissible to re-enroll a student whose enrollment has been suspended from the university or withdrawn from the university if he has more than two academic warnings.
- If the student has been closed for four semesters or more, he can apply to the university as a new student without referring to his previous academic record, provided that he meets all the admission conditions announced at the time, and the University Council may make an exception to this in accordance with the regulations issued by the Council.

#### 4.2.8. Rules for Requesting an Alternative Final Exam

- A student who is absent from the final exam shall submit his excuse to the department to which the course is followed before the beginning of the next semester – by the student or his representative, provided that the percentage of absenteeism in the course is >50%.
- In case of the approval of the College Council, the alternative exam will be held no later than two weeks from the beginning of the semester.
- The alternative exam may be held during the final exam period if the excuse is submitted early and approved.

- If the medical report period includes a semester exam, it will be estimated by the department head and the course professor, to repeat the student's scheduled semester exam.
- Acceptable excuses for substitute tests for final exams include:
  - A medical report for the student is certified by the university's medical services or a government hospital, and a "sick leave report", "review report", "affidavit letter", or "report from the emergency department" is not accepted.
    - The death of a first-degree family member (father, mother, brother, sister, son, daughter) and the original excuse is provided along with the photo for review.
    - A traffic accident that resulted in injuries that prevent movement, and the student must deliver the necessary medical report by a relative immediately after the test.
    - Suspension or imprisonment, and the student must request that the college be informed of a letter from the entity in which he was suspended, addressed to his college to which he belongs.
    - Confirmed appointments from official authorities (court hearings certified by a judge or notary, or appointments for hospitals outside the region, etc.)
    - Personal and family circumstances are compelling and emergency, and these cases are assessed by the Guidance and Counseling Unit, the department's and the college's councils.
- Submitting the application does not mean that it is accepted, the student must follow up with the concerned department and the course professor to know the result of the application.

#### **5.2.8. Rules for requesting an exceptional opportunity**

- The request for the exceptional opportunity with the student's academic record shall be submitted to the academic advisor of the scientific department during the first week of the start of the study, and in case of delay, the student is only entitled to register in the next semester.
- The student shall be dismissed if he receives three consecutive warnings and the student shall be considered an academic suspension until a decision to the contrary is issued by the Faculty Council.
- The College Council may give a fourth chance to the student who can raise his cumulative average assuming that he obtains 60 points from studying 15 study units.
- The College Council may give a fifth chance to the student who can raise his cumulative average assuming that he obtains 45 points from the study of 15 study units.
- The Faculty Council may, if necessary, give the student a sixth chance to those who can raise their cumulative average assuming that they obtain 37.5 points from studying 15 study units.

#### **6.2.8. Regulations for lifting deprivation**

- This form is used in cases where students are deprived due to their absence rate in a course(s) exceeding 25% and less than 50%.

- The Dean of the College may consider lifting the deprivation if the student submits an acceptable excuse (provided that the absence rate does not exceed 50% of the total lectures and practical and field lessons of the course), provided that this is one week before the start of the final exams for the general preparation subjects.
- The department's and college councils may consider lifting the deprivation if the student submits an acceptable excuse (provided that the absence rate does not exceed 50% of the total lectures and practical and field lessons of the course) after the beginning of the final exams, and in case the deprivation is approved, the department will conduct an alternative test for the student, and inform the Deanship of Admission and Registration of the student's result.
- Acceptable excuses for Rafah deprivation include acceptable excuses for the student's inability to attend the university's headquarters, which are described in the executive regulations of Article (11 and 12) of the university's study and examinations regulations, and include:
  - A medical report for the student is certified by the university's medical services or a government hospital, and a "sick leave report", "review report", "affidavit letter", or "report from the emergency department" is not accepted.
  - The death of a first-degree family member (father, mother, brother, sister, son, daughter) and the original excuse is provided along with the photo for review.

- A traffic accident that resulted in injuries that prevent movement, and the student must deliver the necessary medical report by a relative immediately after the test.
  - Suspension or imprisonment, and the student must request that the college be informed of a letter from the entity in which he was suspended, addressed to his college to which he belongs.
  - Confirmed appointments from official authorities (court hearings certified by a judge or notary, or appointments for hospitals outside the region, etc.)
  - Personal and family circumstances are compelling and emergency, and these cases are assessed by the Guidance and Counseling Unit, the department's and the college's councils.
- Submitting the application does not mean that it is accepted, the student must follow up with the concerned department.

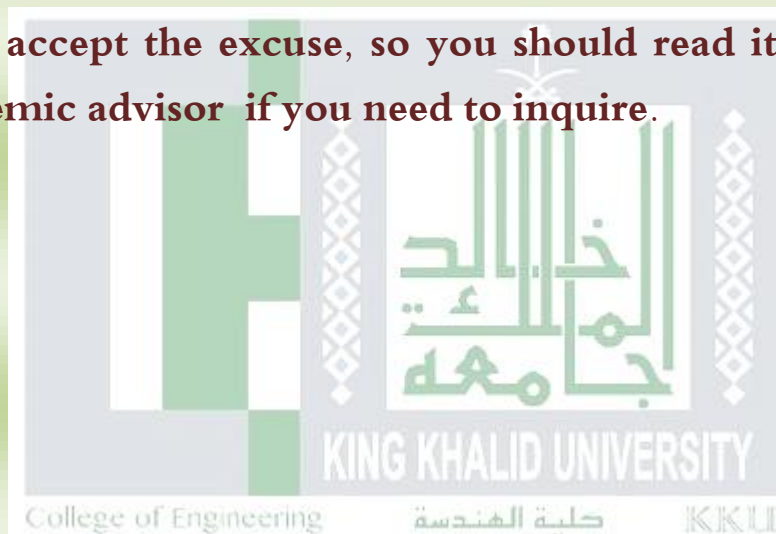
#### 7.2.8. Excuses Accepted due to the absence of lectures and alternative semester exams

- Medical report from a government hospital
- A medical report certified by the university's medical services.
- Medical report from a private hospital certified by the Health Affairs in Asir
- Death of a family member (father, mother, brother, sister, son, daughter).
- A traffic accident resulting in injury accompanied by a medical report

- Letter addressed to the college from a suspension or imprisonment authority
- Dates of Certified Court Hearings
- Appointments for Hospitals Outside the Region
- Compulsive personal and family circumstances estimated by the counselor and the head of the department

### 3.8. Models

**Note:** Each form contains the rules and regulations that are followed to accept the excuse, so you should read it carefully and ask the academic advisor if you need to inquire.



## Form No. (1) – Apology for a

الاسم رباعي:	الاسم الجامعي.					
رقم الهوية:	رقم الجوال:					
القسم:	الفصل الدراسي:					
المعدل الفصلي:	المعدل التراكمي:	عدد الساعات المسجلة في الفصل:				
عدد المقررات التي سبق الاعتذار عنها: <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3						
بيانات المقرر/المقررات						
رقم الاسبوع	رمز المقرر	اسم المقرر	عدد الوحدات	رقم الشعبة	نسبة الغياب	سبب الاعتذار
ضوابط الاعتذار عن مقرر						
<p>1. يجوز للطالب الاعتذار عن مقرر واحد فقط بشكل آلي، وذلك قبل بداية الاختبارات النهائية بثلاثة أسابيع حسب التقويم الأكاديمي للجامعة.</p> <p>2. يحق للطالب تقديم الاعتذار بعد انتهاء الفترة المحددة الكترونياً، وذلك بتقديم طلب اعتذار عن مقرر الى المرشد الأكاديمي الذي يقوم بدوره بعرضه على المجالس المعنية لدراسته.</p> <p>3. يجوز الاعتذار عن مقرر أو أكثر في الفصل الدراسي، وبما لا يتجاوز 4 مقررات دراسية كحد أقصى طيلة بقائه في الجامعة.</p> <p>4. لا يجوز الاعتذار عن مقرر أكثر من مرة خلال دراسة الطالب بالجامعة، ويرصد للطالب تقدير (ع) أو (W) في مقرر/مقررات الاعتذار.</p> <p>5. يجب ألا يقل الحد الأدنى للوحدات المسجلة للطالب بعد الاعتذار عن 12 وحدة دراسية.</p> <p>6. يمكن للطالب الاعتذار عن مقرر في فصل سابق (بأثر رجعي) وفق الشروط التالية:</p> <ul style="list-style-type: none"> <li>▪ لا يحق للطالب الاعتذار عن مقرر تم رصد درجته، ويكون الاعتذار فقط لما رصد له (ح) أو (ع).</li> <li>▪ لا يحق للطالب الاعتذار عن مقرر ما في فصول ماضية تتجاوز فصل دراسي واحد للفصل المنتظم به الطالب.</li> <li>▪ أن يكون تقديم الطلب للمقرر المراد الاعتذار عنه في الفصل الدراسي التالي لذلك المقرر مباشرة حتى لو كان الطالب منقطعاً عن الدراسة أو مطوياً قيده.</li> <li>▪ أن تكون شروط الاعتذار عن المقرر منطبقة على الطالب في ذلك الفصل، وأن يكون للطالب رصيد يمكنه من الاعتذار بأثر رجعي.</li> </ul> <p>7. تعبئة النموذج لا يعني الموافقة على الطلب المقدم، ويجب على الطالب الانتظام في الدراسة ومتابعة الطلب على البوابة الالكترونية.</p> <p>8. يحق للطالب الاحتفاظ بنسخة من هذا النموذج.</p>						
الطالب: أتعهد بصحة جميع البيانات المدونة في النموذج وأقر بالعلم بجميع الضوابط المكتوبة أعلاه.						
توقيع الطالب: .....				التاريخ: / / 143.... هـ		
خاص بالمرشد الأكاديمي						
<input type="checkbox"/> الطالب استوفى شروط الاعتذار.				<input type="checkbox"/> الطالب لم يستوفى شروط الاعتذار بسبب		
<input type="checkbox"/> تجاوز عدد المقررات المسموح بها للاعتذار.				<input type="checkbox"/> تجاوز عدد المقررات المسموح بها للاعتذار.		
<input type="checkbox"/> سبق الاعتذار عن المقرر في الفصل الدراسي.....				<input type="checkbox"/> سبق الاعتذار عن المقرر في الفصل الدراسي.....		
<input type="checkbox"/> تجاوز الفترة المحددة للاعتذار عن مقرر.				<input type="checkbox"/> تجاوز الفترة المحددة للاعتذار عن مقرر.		
<input type="checkbox"/> المقرر تم رصد درجته في الفصل الدراسي السابق.				<input type="checkbox"/> المقرر تم رصد درجته في الفصل الدراسي السابق.		
<input type="checkbox"/> عدد الساعات المسجلة سيقل عن الحد الأدنى.				<input type="checkbox"/> عدد الساعات المسجلة سيقل عن الحد الأدنى.		
اسم المرشد: .....				التاريخ: / / 143.... هـ		
توقيع المرشد: .....				التاريخ: / / 143.... هـ		
رأي رئيس القسم: للعرض على مجلس القسم				التاريخ: / / 143.... هـ		
قرار مجلس القسم: بناء على المادة (13) من لائحة الدراسة والاختبارات والقواعد المنظمة لهما، قرر مجلس القسم						
<input type="checkbox"/> الموافقة على طلب الاعتذار عن المقرر				<input type="checkbox"/> رفض طلب الاعتذار عن المقرر بسبب .....		
رقم مجلس القسم: .....	رقم قرار مجلس القسم: .....	تاريخ مجلس القسم: .....				
اسم رئيس القسم: .....	توقيع رئيس القسم: .....					

## Form 2 - Apologizing for a

الاسم رباعي:	رقم الجوال:
رقم الهوية:	العام الجامعي:
القسم:	الفصل الدراسي الحالي: <input type="checkbox"/> الأول ..... <input type="checkbox"/> الثاني ..... <input type="checkbox"/> الصيفي .....
عدد الفصول الدراسية التي سبق للطالب التأجيل/الاعتذار عنها: <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	آخر فصل دراسي سبق للطالب التأجيل/الاعتذار عنه: .....
<b>إقرار</b>	
أقر أنا الطالب الموقع أدناه بأنني أرغب بالاعتذار عن الفصل الدراسي الحالي وذلك بسبب (يتم إرفاق أصل عذر الطالب وسجله الأكاديمي) .....	
<b>ضوابط الاعتذار عن فصل دراسي</b>	
1. يجوز للطالب الاعتذار بشكل آلي عن الاستمرار في دراسة فصل دراسي دون أن يعد راسباً، إذا تقدم بالاعتذار، وذلك قبل بداية الاختبارات النهائية بخمسة أسابيع حسب التقويم الأكاديمي للجامعة، ما عدا ذلك يقدم طلب الاعتذار إلى المرشد الأكاديمي/رئيس القسم ليعرض على المجالس المعنية. 2. في حالة تقدم الطالب للاعتذار بعد آخر يوم في المدة المقررة للاعتذار وحتى قبل بدء الاختبارات النهائية لمواد الإعداد العام، يقدم طلب الاعتذار إلى المرشد الأكاديمي/رئيس القسم ليعرض على المجالس المعنية (القسم/الكلية) وفي الموافقة على الطلب، ترفع الكلية لعمادة القبول والتسجيل للتنفيذ. 3. إذا تقدم الطالب بعد بدء الاختبارات النهائية فعلى الكلية الرفع للجنة الدائمة للشؤون الطلابية. 4. لا يحق للطالب الاعتذار عن الفصل ولديه مادة مرصودة في نفس الفصل. 5. يرصد للطالب المعتذر تقدير منسحب بعذر (ع، و) في جميع مقررات ذلك الفصل. 6. لا يحق للطالب التأجيل والاعتذار أكثر من فصلين دراسيين متتاليين، أو ثلاثة فصول غير متتالية طيلة بقائه في الجامعة. 7. لا يحق للطالب المستجد الاعتذار عن فصل دراسي إلا بعد مضي عام دراسي، وللجنة الأكاديمية استثناء بعض الكليات من ذلك. 8. إذا تقدم الطالب بطلب اعتذار عن فصل دراسي سابق يعرض الطلب على المجالس المعنية بحيث لا يتجاوز الفصل المراد الاعتذار عنه فصل دراسي واحد من الفصل المنتظم فيه الطالب، واستيفائه لشروط الاعتذار. 9. يتابع الطالب نتيجة طلب الاعتذار على البوابة الإلكترونية، وفي حالة عدم الموافقة على الطلب فإن الطالب ملزم بالحضور حسب جدولته. 10. يجب على الطالب المعتذر متابعة تسجيله الآلي في الفصل التالي وإلا عد منقطعاً. 11. تحسب مدة الاعتذار ضمن الفترة اللازمة لإنهاء متطلبات التخرج. 12. يحق للطالب الاحتفاظ بنسخة من هذا النموذج.	
<b>الطالب:</b> أتعهد بصحة جميع البيانات المدونة في النموذج وأقر بالعلم بجميع الضوابط المكتوبة أعلاه.	
توقيع الطالب: .....	التاريخ: / / 143... هـ
<b>خاص بالمرشد الأكاديمي</b>	
<input type="checkbox"/> الطالب استوفى شروط الاعتذار.	<input type="checkbox"/> الطالب لم يستوفى شروط الاعتذار بسبب <input type="checkbox"/> تجاوز عدد الفصول الدراسية المسموح بها للاعتذار. <input type="checkbox"/> تجاوز الفترة المحددة للاعتذار عن فصل دراسي. <input type="checkbox"/> الطالب اعتذر عن فصلين سابقين متتاليين. <input type="checkbox"/> الطالب سيتجاوز المدة اللازمة لإنهاء متطلبات التخرج (نصف المدة المقررة لتخرجه علاوة على مدة البرنامج). <input type="checkbox"/> تجاوز شرط الفصل الدراسي السابق (فصل واحد). <input type="checkbox"/> الطالب لديه مقرر مرصود في نفس الفصل.
اسم المرشد: .....	التاريخ: / / 143... هـ
توقيع المرشد: .....	
رأي رئيس القسم: للعرض على مجلس القسم	التاريخ: / / 143... هـ
قرار مجلس القسم: بناء على المادة (13) من لائحة الدراسة والاختبارات والقواعد المنظمة لهما، قرر مجلس القسم <input type="checkbox"/> الموافقة على الاعتذار عن الفصل الدراسي ..... <input type="checkbox"/> رفض طلب الاعتذار بسبب .....	
رقم مجلس القسم: .....	رقم قرار مجلس القسم: .....
اسم رئيس القسم: .....	تاريخ مجلس القسم: .....
اسم رئيس القسم: .....	توقيع رئيس القسم: .....

## Form No. (3) - Re-

الاسم رباعي:	الرقم الجامعي:
رقم الهوية:	رقم الجوال:
القسم:	العام الجامعي:
سنة الالتحاق بالجامعة:	تاريخ طي القيد:
عدد فصول الانقطاع:	إجمالي عدد الساعات التي تم دراستها:
المعدل التراكمي من 5:	عدد الإنذارات:
سبب طي القيد:	
<b>ضوابط إعادة القيد</b>	
<p>1. يمكن للطالب المطوي قيده للمرة الأولى إذا كانت تطبيق عليه شروط إعادة القيد من إعادة قيده بشكل آلي عبر النظام الأكاديمي.</p> <p>2. يقدم طلب إعادة القيد مع السجل الأكاديمي للطالب إلى المرشد الأكاديمي للقسم ولا بد من موافقة مجلس الكلية على إعادة قيد الطالب خلال الأسبوعين الأولين من بدء الفصل الدراسي وفي حال تأخر موافقة مجلس الكلية عن هذه الفترة، فيعاد قيد الطالب في الفصل التالي.</p> <p>3. يحيل المرشد الأكاديمي قوائم الطلبة الذين يحق لهم إعادة القيد بعد إنتهاء الفصل الدراسي مباشرة إلى رئيس القسم بعد إبلاغ الطلبة بضرورة طباعة نموذج إعادة القيد وتوقيعه، ويقوم رئيس القسم بعرض الموضوع على أول مجلسي قسم/كلية في فصل إعادة القيد ومن ثم ترسل قوائم الطلاب الموافق على إعادة قيدهم إلى عمادة القبول والتسجيل في الفترة المحددة.</p> <p>4. يمكن للطالب التقدم بطلب إعاد القيد بما لا يزيد عن أربع فصول دراسية من تاريخ طي القيد على أن يتم احتساب فصول الإنقطاع من الفصل التالي لفصل الإنقطاع.</p> <p>5. لا يجوز إعادة قيد الطالب أكثر من مرة واحدة ولمجلس الجامعة - في حال الضرورة - الإستثناء من ذلك بعد عرض الموضوع على مجلسي القسم والكلية وتوصية اللجنة الدائمة للشؤون الطلابية.</p> <p>6. لا يجوز إعادة قيد الطالب المطوي قيده إذا كان مفصول أكاديميا ويجوز للجنة الشؤون الطلابية الإستثناء من ذلك عند الضرورة.</p> <p>7. يشترط لإعادة القيد (أ) ألا يكون الطالب قد ارتكب خلال فترة الإنقطاع ما يدل على سوء السلوك، (ب) ألا يكون قد التحق خلال فترة الإنقطاع بجامعة أخرى وفصل منها فصلا تاديبيا أو أكاديميا، (ج) أن يحصل على موافقة مرجعة بالدراسة، إذا كان يعمل في جهة حكومية أو خاصة، (د) لا يجوز إعادة قيد الطالب المطوي قيده من الجامعة أو المنسحب من الجامعة إذا كان لديه أكثر من انذارين أكاديميين ولمدير الجامعة في حلة الضرورة الإستثناء من ذلك بعد عرض الموضوع على مجلسي القسم والكلية وتوصية اللجنة الدائمة للشؤون الطلابية.</p> <p>8. إذا مضى على طي قيد الطالب خمسة فصول دراسية فأكثر فيخبر الطالب بين ما يأتي: (أ) يتقدم الطالب للجامعة كطالب مستجدا في درجة البكالوريوس في الفترة المعلنة للقبول دون الرجوع إلى سجله الدراسي السابق على أن تنطبق عليه كافة شروط القبول المعلنة في الفصل أو السنة الدراسية، (ب) يتقدم الطالب للجامع كطالب مستجد في إحدى كليات المجتمع، دون الرجوع إلى سجله الأكاديمي السابق وفق شروط القبول في حينه.</p> <p>9. يحق للطالب الاحتفاظ بنسخة من هذا النموذج.</p>	
<p><b>الطالب:</b> أقر بأن الأسباب التي أدت إلى انقطاعي عن الدراسة قد زالت وأني لم ألتحق بأية جامعة أخرى خلال فترة انقطاعي عن الدراسة. كما أتعهد بصحة جميع البيانات المدونة في النموذج وأقر بالعلم بجميع الضوابط المكتوبة أعلاه.</p>	
توقيع الطالب:	التاريخ: / / 143... هـ
<b>خاص بالمرشد الأكاديمي</b>	
<input type="checkbox"/> الطالب استوفى شروط إعادة القيد على خطته الحالية. <input type="checkbox"/> الطالب استوفى شروط إعادة القيد على الخطه.....	<input type="checkbox"/> الطالب لم يستوفي شروط إعادة القيد بسبب <input type="checkbox"/> تجاوز عدد الفصول الدراسية المسموح بها للإنقطاع. <input type="checkbox"/> الطالب مفصول أكاديميا أو تاديبيا. <input type="checkbox"/> الطالب التحق بجامعة أخرى وفصل منها.
اسم المرشد:	التاريخ: / / 143... هـ
توقيع المرشد:	
رأي رئيس القسم: للعرض على مجلس القسم	التاريخ: / / 143... هـ
قرار مجلس القسم: بناء على المادة (17 و 18) من لائحة الدراسة والاختبارات والقواعد المنظمة لهما، قرر مجلس القسم	<input type="checkbox"/> الموافقة على إعادة القيد للطالب <input type="checkbox"/> رفض طلب إعادة القيد بسبب.....
رقم مجلس القسم:	رقم قرار مجلس القسم:
تاريخ مجلس القسم:	توقيع رئيس القسم:
اسم رئيس القسم:	

Kingdom of Saudi Arabia King Khalid University College of Engineering		المملكة العربية السعودية جامعة الملك خالد كلية الهندسة
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## Form No. (4) - Alternative

الاسم رباعي:	الرقم الجامعي:
رقم الهوية:	رقم الجوال:
القسم:	العام الجامعي:
اسم المقرر:	رقم ورمز المقرر:
القسم الاكاديمي:	رقم الشعبة:
اسم استاذ المقرر:	
تاريخ الاختبار:	الفصل الدراسي:
نوع العذر:	الجهة الوارد منها:
فترة العذر:	من / / 14هـ إلى / / 14هـ

### ضوابط طلب اختبار نهائي بديل

1. يتقدم الطالب المتغيب عن الاختبار النهائي بعذره الى المرشد الاكاديمي قبل بداية الفصل الدراسي التالي بواسطة الطالب أو من ينوب عنه والذي بدوره يحيل العذر الى مجلس القسم.
2. في حال عدم قبول العذر من قبل مجلس الكلية فيجب إبلاغ الطالب بذلك رسمياً، وفي حال الاقتناع بالعذر، يكلف القسم بعقد الاختبار البديل بما لا يتجاوز اسبوعين من بداية الفصل.
3. تدخل درجات الطالب الذي تم الموافقة على عقد الاختبار البديل له على البرنامج الاكاديمي في مده أقصاها نهاية الاسبوع الثاني من الفصل الدراسي ويتاح للطالب معالجة التسجيل.
4. عند وصول نتيجة الاختبار البديل بداية الاسبوع الثالث من الفصل الدراسي تقوم عمادة القبول والتسجيل بتعديل الدرجة، وحذف المقرر من تسجيله، مع تعذر معالجة التسجيل.
5. يجوز عقد الاختبار البديل أثناء فترة الاختبارات النهائية إذا تم تقديم العذر مبكراً، وتمت الموافقة عليه.
6. لا يسمح للطالب المحروم والذي تجاوزت نسبة غيابه بالمقرر عن 50% بعمل اختبار بديل.
7. إذا كانت فترة العذر تشتمل على اختبار فصلي (في حال تقدم الطالب بالعذر خلال سبعة أيام من تاريخ الاختبار الفصلي والمحدد آخر موعد له بأن يكون نهاية الاسبوع الذي يسبق الاختبارات النهائية لمواد الإعداد العام)، يتم إعادة الاختبار الفصلي للطالب.
8. الأعدار المقبولة للاختبارات البديلة عن الاختبارات النهائية تشمل:
  - 1.8 تقرير طبي- خاص بالطالب- مصدقاً عليه من الخدمات الطبية بالجامعة، أو من مستشفى حكومي، ولا يتم قبول "تقرير بإجازة مرضية" أو "تقرير مراجعة" أو "خطب إفادة" أو "تقرير من قسم الطوارئ".
  - 2.8 وفاة أحد أفراد العائلة من الدرجة الأولى (الأب - الأم - الأخ - الأخت - الابن - البنت) ويقدم أصل العذر مع الصورة للاطلاع.
  - 3.8 حادث مروري نتج عنه إصابات تمنع الحركة، ويجب على الطالب إيصال التقرير الطبي اللازم بواسطة أحد الأقارب بعد الاختبار مباشرة الى المرشد الاكاديمي/القسم.
  - 4.8 الإيقاف أو السجن، وعلى الطالب طلب إبلاغ الجامعة بخطاب من الجهة التي أوقف فيها موجه إلى كليته التي ينتمي إليها من الجهة التي أوقف فيها.
  - 5.8 مواعيد مثبتة من جهات رسمية (جلسات محاكم مصدقة من أحد القضاة أو كتاب العدل، أو مواعيد لمستشفيات خارج المنطقة، وغيرها)
  - 6.8 الظروف الشخصية والأسرية القاهرة والطارئة مثل العنف الأسري، مشاكل النقل، الأعراض الصحية التي لا يوجد لها تقارير طبية، وتقدر هذه الحالات بواسطة وحدة التوجيه والإرشاد ومجلسي القسم والكلية.
9. تقديم الطلب لا يعني قبوله، يجب على الطالب المتابعة مع القسم المعني واستاذ المقرر لمعرفة نتيجة الطلب.
10. يحق للطالب الاحتفاظ بنسخة من هذا النموذج.

الطالب: أتعهد بصحة جميع البيانات المدونة في النموذج وأقر بالعلم بجميع الضوابط المكتوبة أعلاه.

توقيع الطالب:..... التاريخ: / / 143.....هـ

### خاص بالمرشد الاكاديمي

<input type="checkbox"/> الطالب استوفى شروط طلب اختبار بديل	<input type="checkbox"/> الطالب لم يستوفي شروط طلب اختبار بديل بسبب
<input type="checkbox"/> تجاوز الفترة المحددة لتقديم طلب اختبار بديل.	<input type="checkbox"/> عذر الطالب ليس ضمن الاعذار المنصوص عليها.
اسم المرشد:	التاريخ: / / 143.....هـ
توقيع المرشد:	
رأي رئيس القسم: للعرض على مجلس القسم	التاريخ: / / 143.....هـ
قرار مجلس القسم: بناء على المادة (11 و 12) من لائحة الدراسة والاختبارات والقواعد المنظمة لهما، قرر مجلس القسم	
<input type="checkbox"/> الموافقة على عقد اختبار بديل للطالب	<input type="checkbox"/> رفض طلب عقد اختبار بديل للطالب بسبب.....
رقم مجلس القسم:	رقم قرار مجلس القسم:
اسم رئيس القسم:	توقيع رئيس القسم:

## Form No. (5) – Request for an Exceptional

بيانات تملأ بمعرفة الطالب وتراجع من قبل المرشد الأكاديمي	الاسم رباعي:	الرقم الجامعي:
	رقم الهوية:	رقم الجوال:
	القسم:	الفصل الدراسي:
	المعدل التراكمي:	عدد الإنذارات:
	الساعات التراكمية المكتسبة:	النقاط التراكمية المكتسبة:
	عدد الفصول الدراسية بالسجل الأكاديمي للطالب:	الفرصة الاستثنائية المطلوبة:
<b>ضوابط الفرص الاستثنائية</b>		
<p>1. يفصل الطالب من الجامعة إذا حصل على ثلاثة إنذارات متتالية على الأكثر لإنخفاض معدله التراكمي عن 2.00 أو لعدم تمكنه من إنهاء متطلبات التخرج خلال مدة أقصاها نصف المدة المقررة لتخرجه علاوة على مدة البرنامج.</p> <p>2. يقدم الطالب طلب الفرصة الاستثنائية (نموذج رقم 5) مع سجله الأكاديمي الرسمي الى المرشد الأكاديمي للقسم خلال الأسبوعين الأولين من الفصل الدراسي وفي حال التأخر عن ذلك فلا يحق للطالب التقدم للحصول على فرصة استثنائية إلا في الفصل الدراسي التالي.</p> <p>3. لا يجوز للطالب التقدم للحصول على الفرصة الاستثنائية في الفصل الدراسي الصيفي.</p> <p>4. لمجلس الكلية إعطاء الطالب فرصة رابعة لمن يمكنه رفع معدله التراكمي بإقتراض حصوله على 75 نقطة من دراسة 15 وحدة دراسية.</p> <p>5. لمجلس الكلية إعطاء الطالب فرصة خامسة لمن يمكنه رفع معدله التراكمي بإقتراض حصوله على 60 نقطة من دراسة 15 وحدة دراسية.</p> <p>6. يمكن للطالب الحصول على الفرصة السادسة والأخيرة بتقديم أعذاره الى اللجنة الدائمة للشؤون الطلابية.</p> <p>7. يحق للطالب الاحتفاظ بنسخة من هذا النموذج.</p>		
<p><b>الطالب:</b> أتعهد بصحة جميع البيانات المدونة في النموذج وأقر بالعلم بجميع الضوابط المكتوبة أعلاه.</p>		
توقيع الطالب:.....	التاريخ: / / 143.... هـ	
<b>خاص بالمرشد الأكاديمي</b>		
<p><b>سبب الفصل لأكاديمي:</b> <input type="checkbox"/> حصول الطالب على ثلاث إنذارات أو أكثر <input type="checkbox"/> عدم إنهاء متطلبات التخرج في سبع سنوات ونصف <input type="checkbox"/> عدم إنهاء متطلبات التخرج في عشر سنوات ونصف <input type="checkbox"/></p>		
يجب أن يكون المعدل الإفتراضي أكبر من أو يساوي 2.00	المعدل الإفتراضي للفرصة الرابعة =	$\frac{\text{النقاط التراكمية المكتسبة} + 75 \text{ نقطة}}{\text{الساعات التراكمية المكتسبة} + 15 \text{ وحدة دراسية}}$
	المعدل الإفتراضي للفرصة الخامسة =	$\frac{\text{النقاط التراكمية المكتسبة} + 60 \text{ نقطة}}{\text{الساعات التراكمية المكتسبة} + 15 \text{ وحدة دراسية}}$
	الفرصة السادسة	يتقدم الطالب بأعذاره الى اللجنة الدائمة للشؤون الطلابية للبت في إمكانية حصوله على الفرصة السادسة والأخيرة
الطالب إستوفي شروط الفرصة الاستثنائية لأن	الطالب لم يستوفي شروط الفرصة الاستثنائية بسبب	
<input type="checkbox"/> المعدل الإفتراضي للفرصة الإستثنائية أكبر من أو يساوي 2.00	<input type="checkbox"/> المعدل الإفتراضي للفرصة الإستثنائية أقل من 2.00	
<input type="checkbox"/> يمكن للطالب الحصول على فرصة استثنائية لإنهاء البرنامج.	<input type="checkbox"/> لتجاوز الفترة الزمنية المحددة لإنهاء البرنامج.	
اسم المرشد: .....	التاريخ: / / 143.... هـ	
توقيع المرشد: .....		
رأي رئيس القسم: للعرض على مجلس القسم	التاريخ: / / 143.... هـ	
قرار مجلس القسم: بناء على المادة (20) من لائحة الدراسة والاختبارات والقواعد المنظمة لهما، قرر مجلس القسم	<input type="checkbox"/> الموافقة على إعطاء الطالب فرصة إستثنائية رقم .....	<input type="checkbox"/> رفض طلب الفرصة الإستثنائية بسبب .....
رقم مجلس القسم: .....	رقم قرار مجلس القسم: .....	تاريخ مجلس القسم: .....
إسم رئيس القسم: .....	توقيع رئيس القسم: .....	

## Form No. (6) - Lifting the

الاسم رباعي:	اسم الطالب:
رقم الهوية:	رقم الجوال:
القسم:	الفصل الدراسي:
المعدل الفصلي:	عدد الساعات المسجلة في الفصل:
عدد المقررات المسجلة في الفصل الحالي:	عدد المقررات المحروم فيها الطالب:

### بيانات المقرر/المقررات المحروم فيها الطالب

رمز المقرر	اسم المقرر	عدد الوحدات	رقم الشعبة	نسبة الغياب	العذر المقدم

### ضوابط رفع الحرمان عن الطالب

1. يستخدم هذا النموذج عند بدء الاختبارات النهائية بهدف رفع الحرمان عن الطالب نظراً لتجاوز نسبة غيابه في مقرر أو أكثر عن نسبة الـ 20% وأقل من نسبة الـ 50%.
2. لا يسمح للطالب المحروم بدخول الاختبار النهائي للمقرر قبل موافقة مجلسي القسم والكلية على رفع الحرمان.
3. يتم مراعاة البنود التالية من قبل اللجان/الأقسام/المجالس المعنية عند البت في رفع الحرمان:
  - يجب على الطالب أو من ينوب عنه تقديم أعذاره إلى المرشد الأكاديمي خلال سبعة أيام من تاريخ المحاضرة كحد أقصى لتحويل الغياب إلى غياب بعذر أو لرفع الحرمان.
  - يتم رصد غياب الطلبة في المحاضرات من قبل استاذ المقرر خلال 14 يوم من تاريخ المحاضرة كحد أقصى.
  - يتحمل الطالب تبعات الحضور في غير الشعبة المحددة في جدولته ولن يتم رفع الحرمان للطالب بسبب الأخطاء التي ترد عن ذلك.
  - رئيس القسم هو المسؤول عن قبول أو رفض أعذار الطلاب من بداية الفصل الدراسي حتى نهاية أسبوع الاختبارات النهائية لمواد الإعداد العام سواء لتحويل الغياب إلى غياب بعذر أو لرفع الحرمان.
4. لمجلسي القسم والكلية النظر في رفع الحرمان إذا تقدم الطالب بعذر مقبول (على ألا تزيد نسبة الغياب عن 50% من مجموع المحاضرات والدروس العملية والميدانية للمقرر) بعد بداية الاختبارات النهائية، وفي حال الموافقة على رفع الحرمان، يقوم القسم بإجراء اختبار بديل للطالب، وإبلاغ عمادة القبول والتسجيل بنتيجة الطالب.
5. الأعداء المقبولة لرفع الحرمان تشمل الأعذار المقبولة لعدم تمكن الطالب من الحضور إلى مقر الجامعة والموضحة في اللائحة التنفيذية للمادة (11، 12) من لائحة الدراسة والاختبارات بالجامعة وتشمل:
  - تقرير طبي - خاص بالطالب - مصدقاً عليه من الخدمات الطبية بالجامعة، أو من مستشفى حكومي، ولا يتم قبول "تقرير بإجازة مرضية" أو "تقرير مراجعة" أو "خطاب إفادة" أو "تقرير من قسم الطوارئ".
  - وفاة أحد أفراد العائلة من الدرجة الأولى (الأب - الأم - الأخ - الأخت - الابن - البنت) ويقدم أصل العذر مع الصورة للاطلاع.
  - حادث مروري نتج عنه إصابات تمنع الحركة، ويجب على الطالب إيصال التقرير الطبي اللازم بواسطة أحد الأقارب بعد الاختبار مباشرة إلى المرشد الأكاديمي/القسم.
  - الإيقاف أو السجن، وعلى الطالب طلب إبلاغ الجامعة بخطاب من الجهة التي أوقف فيها موجه إلى كليته التي ينتمي إليها من الجهة التي أوقف فيها.
  - مواعيد مثبتة من جهات رسمية (جلسات محاكم مصدقة من أحد القضاة أو كتاب العدل، أو مواعيد لمستشفيات خلج المنطقه، وغيرها)
  - الظروف الشخصية والأسرية القاهرة والطارئة مثل العنف الأسري، مشاكل النقل، الأعراض الصحية التي لا يوجد لها تقارير طبية، وتقدر هذه الحالات بواسطة وحدة التوجيه والإرشاد ومجلسي القسم والكلية.
6. تقديم الطلب لا يعني قبوله، ويجب على الطالب المتابعة مع القسم المعني.
7. يحق للطالب الاحتفاظ بنسخة من هذا النموذج.

### الطالب: أتعهد بصحة جميع البيانات المدونة في النموذج وأقر بالعلم بجميع الضوابط المكتوبة أعلاه.

توقيع الطالب: .....	التاريخ: / / 143... هـ
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### خاص بالمرشد الأكاديمي

<input type="checkbox"/> الطالب استوفى شروط رفع الحرمان.	<input type="checkbox"/> الطالب لم يستوفي شروط رفع الحرمان بسبب
	<input type="checkbox"/> عدم قناعة لجنة الإرشاد الأكاديمي بالأعداء المقدمة.
	<input type="checkbox"/> عدم كفاية الفترة الزمنية المحددة بالأعداء لرفع الحرمان.

اسم المرشد: .....	التاريخ: / / 143... هـ
توقيع المرشد: .....	

رأي رئيس القسم: للعرض على مجلس القسم	التاريخ: / / 143... هـ
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قرار مجلس القسم: بناء على المادة (9، 10) من لائحة الدراسة والاختبارات والقواعد المنظمة لهما، قرر مجلس القسم	<input type="checkbox"/> الموافقة على طلب رفع الحرمان	<input type="checkbox"/> رفض طلب رفع الحرمان بسبب .....
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رقم مجلس القسم: .....	رقم قرار مجلس القسم: .....	تاريخ مجلس القسم: .....
اسم رئيس القسم: .....	توقيع رئيس القسم: .....	

## Form No. (8) - Excuse for Absence

الإسم رباعي:		رقم الطالب:
الرقم الجامعي:	من	الفترة الزمنية للعد:
رقم الجوال:	إلى	
القسم: <input type="checkbox"/> صناعية <input type="checkbox"/> ميكانيكية <input type="checkbox"/> مدنية <input type="checkbox"/> كيميائية <input type="checkbox"/> كهربائية <input type="checkbox"/> عمارة		
العدر المقدم من الطالب (مرفق بالطلب الوثائق الثبوتية)		

1. تقرير طبي من مستشفى حكومي.
2. تقرير طبي مصدق عليه من الخدمات الطبية بالجامعة.
3. وفاة أحد أفراد العائلة (أب - أم - أخ - أخت - ابن - بنت).
4. حادث مروري نتج عنه إصابة تمنع الحركة.
5. خطاب موجه إلى الكلية من جهة إيقاف.
6. خطاب موجه إلى الكلية من جهة سجن.
7. مواعيد جلسات محاكم مصدقة من قضاة أو كتاب عدل.
8. مواعيد لمستشفيات خارج المنطقة.
9. ظروف شخصية وأسرية قهريه تقدر من قبل المرشد ورئيس القسم.
10. ظروف طارئة تقدر من قبل المرشد ورئيس القسم.

### ضوابط الإعتذار عن غياب المحاضرات

1. يستخدم هذا النموذج من قبل الطلاب حتى نهاية الاسبوع الذي يسبق الاختبارات النهائية لمواد الإعداد العام والعملى تحديدا لتحويل الغياب عن المحاضرات الى غياب بعذر.
2. يجب على الطالب أو من ينوب عنه تقديم أذاره الى المرشد الأكاديمي خلال سبعة أيام من تاريخ المحاضرة كحد أقصى لتحويل الغياب الى غياب بعذر.
3. يتم رصد غياب الطلبة في المحاضرات من قبل استاذ المقرر خلال 14 يوم من تاريخ المحاضرة كحد أقصى.
4. يتحمل الطالب تبعات الحضور في غير الشعبة المحددة في جدولته ولن يتم رفع الحرمان للطلاب بسبب الأخطاء التي ترد عن ذلك.
5. يسمح للطلاب المحروم في المقرر بدخول الاختبارات الفصلية ولا يمنع من حضور المحاضرات النظرية والعملية.
6. الأذار المقبولة هي الأذار الموضحة أعلاه في النموذج.
7. رئيس القسم هو المسؤول عن قبول أو رفض الأذار ، وله الإعتد على من يراه من لجان إذا إقتضت الضرورة ويتولى المرشد الأكاديمي التنسيق مع أسلذة المقررات لتحويل الغياب إلى غياب بعذر في حالة قبول عذره.

سم الطالب: ..... توقيع الطالب: ..... التاريخ: ...../...../..... 143هـ

### بيانات المقررات

م	اسم المقرر	رمز ورقم المقرر	رقم الشعبة	مدرس المقرر		توقيع المرشد الأكاديمي
				عدد مرات الغياب	رأي المرشد الأكاديمي	
1						
2						
3						
4						

### رأي المرشد الأكاديمي

تاريخ تقديم الطلب: ...../...../..... 143هـ

سعادة الدكتور أستاذ المقرر: بعد دراسة الطلب يرجى إعتبار الطالب متغيبا بعذر عن المقررات التالية:

-1	-3
-2	-4

واحتساب الغيابات عن المقررات التالية بدون عذر

-1	-3
-2	-4

المرفقات	إسم المرشد:	إسم رئيس القسم:
مرفق 1:	توقيع المرشد:	توقيع رئيس القسم:
مرفق 2:	التاريخ: ...../...../..... 143هـ	التاريخ: ...../...../..... 143هـ

Kingdom of Saudi Arabia King Khalid University College of Engineering		المملكة العربية السعودية جامعة الملك خالد كلية الهندسة
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### Form No. (9) – Request for a Semester

بيانات الطالب	الاسم رباعي:	الرقم الجامعي:
	القسم:	رقم الجـوال:
	الفصل الدراسي:	رقم الطالب:

#### العذر المقدم من الطالب (مرفق بالطالب الوثائق الثبوتية)

<input type="checkbox"/>	1. تقرير طبي من مستشفى حكومي.	<input type="checkbox"/>	6. خطاب موجه إلى الكلية من جهة سجن.
<input type="checkbox"/>	2. تقرير طبي مصدق عليه من الخدمات الطبية بالجامعة.	<input type="checkbox"/>	7. مواعيد جلسات محاكم مصدقة من قضاة أو كتاب عدل.
<input type="checkbox"/>	3. وفاة أحد افراد العائلة(أب – أم – أخ – أخت – ابن - بنت).	<input type="checkbox"/>	8. مواعيد لمستشفيات خارج المنطقة.
<input type="checkbox"/>	4. حادث مروري نتج عنه اصابة تمنع الحركة.	<input type="checkbox"/>	9. ظروف شخصية وأسرية قهرية تقدر من قبل المرشد ورئيس القسم.
<input type="checkbox"/>	5. خطاب موجه إلى الكلية من جهة إيقاف.	<input type="checkbox"/>	10. ظروف طارئة تقدر من قبل المرشد ورئيس القسم.

بيانات المقرر	اسم المقرر:	رقم ورمز المقرر:
	القسم الاكاديمي:	رقم الشعبة:
	توقيع الطالب:	تاريخ تقديم الطلب:
استاذ المقرر:	تاريخ الاختبار:	زمن الاختبار:
		التوقيع:

المرشد الأكاديمي:	فترة العذر: من ...../...../14 هـ إلى ...../...../14 هـ طبقاً للاوراق الثبوتية المقدمة من الطالب
	تاريخ تقديم الطلب: ...../...../143 هـ
<input type="checkbox"/>	أوصي بعقد اختبار فصلي بديل للطالب
<input type="checkbox"/>	أوصي بعدم عقد اختبار بديل للطالب
	اسم المرشد:
	توقيع المرشد:

#### راي لجنة الاختبارات بالقسم/الكلية

<input type="checkbox"/>	الموافقة على عقد اختبار بديل للطالب
<input type="checkbox"/>	رفض طلب عقد اختبار بديل للطالب بسبب
	.....
	.....
	.....
	.....

#### توقيع أعضاء لجنة الاختبارات بالقسم

رئيس لجنة الاختبارات بالقسم		العضو الثاني		العضو الأول	
الاسم:		الاسم:		الاسم:	
التوقيع:		التوقيع:		التوقيع:	
التاريخ:		التاريخ:		التاريخ:	

#### اعتماد رئيس القسم

اسم رئيس القسم:	توقيع رئيس القسم:	التاريخ:
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Model No. (10)  
Student Review

وزارة التعليم  
جامعة الملك خالد  
كلية الهندسة

\*يهدف هذا النموذج إلى تسهيل إنجاز معاملات الطلاب وتوثيقها

معلومات الطالب/الطلب			
اسم الطالب:	البريد الإلكتروني:		
الرقم الجامعي:	المعدل التراكمي:		
القسم العلمي:	الساعات المجتازة:	من أصل	ساعة
الجـوال:	نوع الدراسة:	<input type="checkbox"/> إنتظام	<input type="checkbox"/> تكميلي
توصيف الموضوع			
عنوان المراجعة:	١. يتم وصف الموضوع بخط واضح. ٢. في حال لديك معاملة خاصة بالموضوع يتم إرفاقها. ٣. يمكن استخدام ورقة إضافية لتوضيح تفاصيل الموضوع.		
وصف الموضوع:			
توقيع الطالب:	عدد المرفقات:	تاريخ تقديم الطلب:	144 هـ / /
الخطوة (١) توصية المرشد الأكاديمي	رقم المراجعة:		
	هل سبق للطالب أن راجع في نفس الموضوع:	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
الخطوة (٢) التوجيه والإرشاد	منتظم في الخطة:	<input type="checkbox"/> نعم <input type="checkbox"/> لا	
	الإسم:		
الخطوة (٣) رأي رئيس القسم	التوقيع:	<input type="checkbox"/> يمكن للطالب مراجعة وحدة التوجيه والإرشاد. <input type="checkbox"/> يمكن للطالب مراجعة رئيس القسم.	
	التاريخ:	144 هـ / /	
الخطوة (٤) الكلية المختص	الإسم:		
	التوقيع:	<input type="checkbox"/> يمكن للطالب مراجعة عميد الكلية. <input type="checkbox"/> نوصي الطالب بعدم مراجعة أي جهة أخرى نظراً لتعارض طلبه مع اللوائح والأنظمة.	
الخطوة (٥) رأي العميد	التاريخ:	144 هـ / /	
	الإسم:	د. إبراهيم بن إدريس فلفي	
التوقيع:			
التاريخ:	144 هـ / /		

ملاحظات

١. ترفق جميع المستندات الثبوتية/الرسمية مع نموذج المراجعة وتقديمها أولاً إلى المرشد الأكاديمي.
٢. يحق للطالب استخدام حق المراجعة إذا كان هناك مبرر. وعدم جدية الطالب في استخدام هذا الحق أو تكرار المراجعات غير الجادة أو غير المبررة نظاماً يعرضه للمساءلة.

Form No. (12) – Request for Final Test Correction

بيانات الطالب/الطلب		
الاسم الرباعي:	الرقم الجامعي:	عدد الطلبات السابقة المماثلة:
رقم ورمز المقرر:	اسم المقرر:	نسبة الغياب في المقرر:
رقم الشعبة:	الفصل الدراسي:	رقم الجوال:
المعدل التراكمي:	عدد الإنذارات:	البريد الإلكتروني:
اسم مدرس المقرر:	تاريخ الاختبار:	زمن الاختبار:

ميررات طلب إعادة التصحيح
اسم الطالب:.....التوقيع:.....التاريخ:.....

رئيس القسم المسؤول عن تدريس المقرر
رأي رئيس القسم: يحال الأمر الى استاذ المقرر الدكتور/..... وتوجيه طلب لسعادة رئيس اللجنة العامة للاختبارات بالكلية لتسهيل عمل جميع اجراءات الفحص الخاصة بالمقرر الموضح بياناته أعلاه. اسم رئيس القسم:.....التوقيع:.....التاريخ:.....

رأي أستاذ المقرر																	
بيانات درجات المقرر بعد فحص الطلب	بيانات درجات المقرر قبل فحص الطلب																
<table border="1"> <thead> <tr> <th>التقدير</th> <th>الاجمالي</th> <th>درجة الاختبار النهائي</th> <th>درجة الاعمال الفصلية</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	التقدير	الاجمالي	درجة الاختبار النهائي	درجة الاعمال الفصلية					<table border="1"> <thead> <tr> <th>التقدير</th> <th>الاجمالي</th> <th>درجة الاختبار النهائي</th> <th>درجة الاعمال الفصلية</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	التقدير	الاجمالي	درجة الاختبار النهائي	درجة الاعمال الفصلية				
التقدير	الاجمالي	درجة الاختبار النهائي	درجة الاعمال الفصلية														
التقدير	الاجمالي	درجة الاختبار النهائي	درجة الاعمال الفصلية														
بناءً على مراجعة درجة الاعمال الفصلية وكراسة اجابة الاختبار النهائي للطالب نرى التالي:																	
<input type="checkbox"/> لا حاجة لتعديل درجات/تقدير الطالب بسبب:..... <input type="checkbox"/> هناك حاجة الى تعديل درجات/تقدير الطالب بسبب:..... اسم أستاذ المقرر:.....التوقيع:.....التاريخ:.....																	

رئيس القسم المسؤول عن تدريس المقرر
<input type="checkbox"/> يتم تعديل درجات وتقديرات الطالب طبقاً لإفادة أستاذ المقرر الدكتور/.....على النظام الأكاديمي. <input type="checkbox"/> لا حاجة لتعديل الدرجة ويبلغ الطالب عن طريق رسالة الى الجوال/البريد الإلكتروني الرسمي للطالب بواسطة وحدة التعلم الإلكتروني. <input type="checkbox"/> عرض الموضوع على مجلس الكلية للموافقة على إعادة تصحيح ورقة الإجابة من قبل لجنة من ثلاثة من أعضاء هيئة التدريس. اسم رئيس القسم:.....التوقيع:.....التاريخ:.....

اللجنة الثلاثية لإعادة تصحيح كراسة الإجابة	
تقوم اللجنة بإعادة تصحيح ورقة إجابة الطالب وإبلاغ الطالب بقرارها	قرار اللجنة
أعضاء اللجنة	(مع حفظ حق الطالب بالاطلاع على ورقة إجابته)
1. الدكتور/.....التوقيع:.....	<input type="checkbox"/> لا حاجة لتعديل درجات/تقدير الطالب <input type="checkbox"/> هناك حاجة الى تعديل درجات/تقدير الطالب بسبب:.....
2. الدكتور/.....التوقيع:.....	.....
3. الدكتور/.....التوقيع:.....	.....

ملحوظة:

1. على طالب التقدم بطلب المراجعة (إعادة تصحيح الاختبار النهائي) بمدة لا تتجاوز اسبوعين بعد ظهور النتيجة النهائية.
2. تشكل اللجنة الثلاثية من قبل رئيس القسم بعد موافقة مجلس الكلية وترفع بتقريرها الى وكيل الكلية للشؤون الأكاديمية/صيد الكلية ويعتبر قرارها نهائياً.

## 9. Summer Training

<b>Page</b>	<b>Content</b>
52	Objectives of the Summer Training .1.9
52	Academic Requirements for Summer Internships .2.9
52	Duration of Summer Internship .3.9
53	How to choose a training entity .4.9
53	Student's Commitments Before Training .5.9
54	Student Obligations During Training .6.9
54	Training Cancellations .7.9
54	Outdoor Summer Training .8.9
55	Summer Training Entities .9.9
59	Models .10.9
60	Evaluation of training by the student .1.10.9
61	Summer Training Nomination Application Form .2.10.9
62	Summer Internship Opportunity Model .3.10.9
63	Nomination Application Form for Summer Internship Abroad .4.10.9

## 1.9. Objectives of the Summer Training

The summer training aims to provide the student with practical experience, develop his functional abilities, and deepen the concepts that have been studied theoretically by linking them to the practical reality, and some of the objectives can be summarized as follows:

- Providing the student with the opportunity to gain practical experience and training before graduation.
- Deepen the student's understanding of the theoretical sciences in their field of specialization through practical practice.
- Enhancing the student's abilities to assume responsibility and adhere to deadlines.
- Prepare the student to prepare and write technical reports.
- Enhancing the student's abilities to deal with community members outside the university and to live with experienced.
- Enhancing the student's abilities to respect others, listen to their opinions, and practical leadership applications.

- Providing industrial institutions with information on the quality of human resources that will contribute to the industry in the future.
- Providing these institutions with the opportunity to evaluate the student's performance during the training period and to know the extent of benefiting from him and employing him after graduation and the student's benefit from their observations.

### **2.9. Academic Requirements for Summer Internships**

- Completion of the sixth level of the study plan in full or a minimum of 95 hours.
- The student must not be suspended from studying.
- The student does not enroll in any courses during the summer semester in which the student is training.
- Registration is done electronically at the specified dates.

### **3.9. Duration of Summer Internship**

A minimum of 8 weeks during the summer period.

#### 4.9. How to choose a training entity

- The Training and Alumni Unit is responsible for coordinating and communicating with companies and institutions in order to find and advertise training opportunities for students during the second semester.
- The student is allowed to agree with the training body directly for training there, provided that he obtains approval from the training body and the accreditation of the department, the training unit and the graduates.
- In the event that the training unit selects the training entity, the student will fill out a nomination application form for the summer internship.
- In case the student chooses the training entity from the list approved by the department, the student fills out the summer internship opportunity form and brings him to a training program from the entity.
- Students are selected for the training entity based on the nomination application form according to their desire to match their averages.

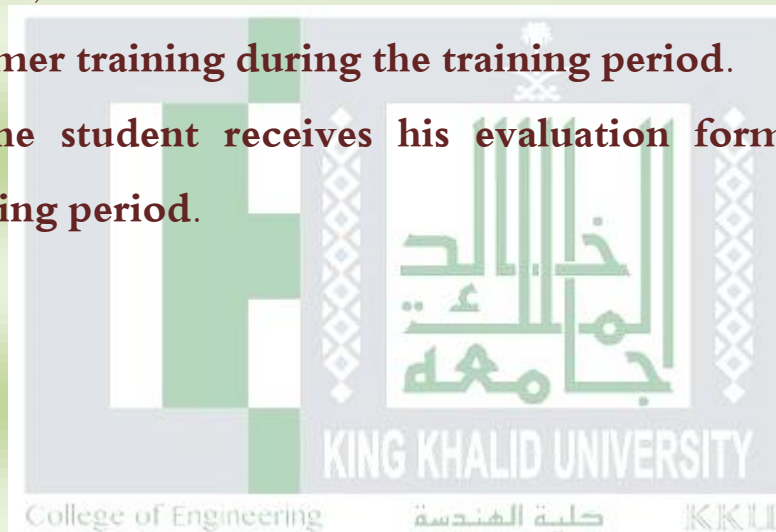


#### 5.9. Student's Commitments Before Training

- Ensure that the student is not on the list of students whose enrollment is folded after the end of the semester preceding the internship period.

- Completion of all administrative procedures at the Department Coordinator, which includes:

- Receiving the official letter addressed from the college to the training entity, which includes an introduction to the student and his specialization.
- The student must sign his undertaking for the summer training at the addressee and write down his address, mobile number, and email address during the training period, and his commitment to the conditions of the summer training during the training period.
- The student receives his evaluation forms during the training period.



### 6.9. Student Obligations During Training

- The student should spend the entire training period (8 weeks) at the training body that was appointed for him or approved by the Training and Graduates Unit and not transfer to any other entity unless obtaining official approval from both the college and the training body.

- Adherence to the rules and regulations of the training entity.
- Emphasizing on the training entity to send the student's evaluation during the training period to the department coordinator for the training unit and graduates, so that the report must arrive at the end of the training period.
- The student gathers the necessary information and elements that the student needs to write the final report of the summer internship.

### 7.9. Cases Cancellation Training

- Absence of four days or more during the training period.
- If the student's evaluation from the training side is unsatisfactory.
- Failure to bring the original report.
- Failure to submit the final report or a copied report (the percentage of copies exceeding 20% of the previous reports submitted to the department).
- Obtain a score less than 60% of the final grade.

### 8.9. Training Summer Outdoor

The College of Engineering trains 25 students from the College (5 from each department) at one of the international universities abroad. Interested students who meet the conditions can submit their application to the department coordinator on the specified date.

#### *Eligibility Criteria:*

- Pass 95 study hours (including the hours of this semester).

- The applicant has at least one semester left after this semester.
- Not be registered for the summer semester this year.
- Pass the STEP English language test

**Application Methodology:**

Fill out the summer internship form available on the college website and submit it along with a copy of the academic record, a copy of the STEP English language test , and a copy of the national ID to the coordinator of the training unit in the department.

**Differentiation criteria:**

- 60% GPA
- 40% for STEP English Language Test

**9.9. Summer Training Entities**



How to Apply	Means of communication (link)	Location	Training Entity	Number
Through the training unit and the dates announced in the student's guide for summer training	<a href="https://www.se.com.sa/ar-sa/Pages/CommunityService.aspx">https://www.se.com.sa/ar-sa/Pages/CommunityService.aspx</a>	Southern Employment and Recruitment Department	Saudi Electricity Company	1
		Central		

		Region Southern Business District Khamis Mushait Electricity Services		
Through the training unit and the dates announced in the student's guide for summer training	<a href="https://www.my.gov.sa/wps/portal/snp/pages/agencies/agencyDetails/AC384">https://www.my.gov.sa/wps/portal/snp/pages/agencies/agencyDetails/AC384</a>	Asir Region	Directorate of Water Services	2
Through the training unit and the dates announced in the student's guide for summer training	<a href="https://www.mod.gov.sa/NEWS/MilitaryNews/Pages/NEWS_10437.aspx">https://www.mod.gov.sa/NEWS/MilitaryNews/Pages/NEWS_10437.aspx</a>		King Khalid Air Base in the Southern Sector: Operation and Maintenance Department	3
Through the Authority's website on the specified dates	<a href="https://www.rciy.gov.sa/ar-SA/jubail/Pages/default.aspx">https://www.rciy.gov.sa/ar-SA/jubail/Pages/default.aspx</a>	Jubail	Royal Commission of Jubail	4
Through the training unit and the dates announced in the student's guide for summer training	<a href="http://www.sbg.com.sa/index_a.html">http://www.sbg.com.sa/index_a.html</a>	Abha	Saudi Binladin Group Abha Airport Location	5
Through the training unit and the dates announced in the student's guide for summer training		The Two Holy Mosques	Saudi Binladin Group	6

Through the training unit and the dates announced in the student's guide for summer training	<a href="http://www.cgs.com.sa/">http://www.cgs.com.sa/</a>	Riyadh	Saudi Cold Room Production Company	7
Through the Institute's website on the specified dates	<a href="http://www.jti.edu.sa/ar/eservices/Pages/default.aspx">http://www.jti.edu.sa/ar/eservices/Pages/default.aspx</a>	Jubail	Jubail Technical Institute	8
Through the company's website on the specified dates	<a href="https://www.sabic.com/ar/careers/middle-east-africa/students-and-fresh-graduates">https://www.sabic.com/ar/careers/middle-east-africa/students-and-fresh-graduates</a>	Riyadh	Saudi Basic Industries Corporation : SABIC	9
Through the training unit and the dates announced in the student's guide for summer training	<a href="https://baytur.com.sa/">https://baytur.com.sa/</a>	News	Baytur saudia arabian	10
Through the company's website on the specified dates	<a href="https://www.schem.com/ar/pages/default.aspx">https://www.schem.com/ar/pages/default.aspx</a>	Jubail	saudi chevron	11
Through the training unit and the dates announced in the student's guide for summer training	<a href="https://www.dar.com/careers/ourculture">https://www.dar.com/careers/ourculture</a>		Dar Al-Handasa Design & Consulting Company	12
Through the company's website on the specified dates	<a href="https://www.aramco.com/ar/careers">https://www.aramco.com/ar/careers</a>		Saudi Aramco	13
Through the training unit and the dates announced in the student's guide for summer training		Brother	Al-Shuqaiq Desalination Plants	14
Through the training unit and the dates announced in			University Vice Presidency for	15

the student's guide for summer training			Projects	
Through the company's website on the specified dates	<a href="https://coop.kacst.edu.sa">https://coop.kacst.edu.sa</a>		King Abdulaziz City for Science and Technology	16
Through the training unit and the dates announced in the student's guide for summer training	<a href="https://saic.com.sa/">https://saic.com.sa/</a>	Riyadh	Saudi Advanced Industries Company	17
Through the training unit and the dates announced in the student's guide for summer training	<a href="http://psdsarc.gov.sa/">http://psdsarc.gov.sa/</a>	Riyadh	Prince Sultan Center for Defense Studies and Research	18
Through a student internship opportunity model with an internship program	<a href="https://connect.slb.com/locations/dammam-doha-saudi-arabia-31942.aspx">https://connect.slb.com/locations/dammam-doha-saudi-arabia-31942.aspx</a>	Dammam	Schlumberger – Saudi Arabia	19
Through a student internship opportunity model with an internship program	<a href="http://www.gdcme.com/index-ar.php">http://www.gdcme.com/index-ar.php</a>	Riyadh	Saudi Aircraft Configuration & Maintenance (GDC Middle East)	20
Through a student internship opportunity model with an internship program	<a href="https://avf.com.sa/">https://avf.com.sa/</a>	Dammam	Armored vehicles & heavy equipment factory	21
Through a student internship opportunity model with an internship program	<a href="https://www.saei.aero/Pages/Home.aspx">https://www.saei.aero/Pages/Home.aspx</a>	Jeddah	Saudi Aerospace Engineering Industries	22
Through a student	<a href="https://www.motabaqah">https://www.motabaqah</a>	Dammam	Saudi Industrial	23

internship opportunity model with an internship program	<a href="http://www.com.sa/ar/">.com.sa/ar/</a>	m	Inspection Services Company (Conformity)	
Through a student internship opportunity model with an internship program	<a href="https://www.gso.org.sa/orgs-db/qms/profile/1856/saudi-iron-&amp;-steel-company-?lang=ar">https://www.gso.org.sa/orgs-db/qms/profile/1856/saudi-iron-&amp;-steel-company-?lang=ar</a>	Jubail	Saudi Iron & Steel Company (Hadid)	24
Through a student internship opportunity model with an internship program	<a href="https://www.gso.org.sa/orgs-db/qms/profile/4252/-arabian-industrial-fibers-company-(ibn-rushd)?lang=ar">https://www.gso.org.sa/orgs-db/qms/profile/4252/-arabian-industrial-fibers-company-(ibn-rushd)?lang=ar</a>	Yanbu	Arab Industrial Fiber Company (Ibn Rushd)	25
Through a student internship opportunity model with an internship program	<a href="https://www.maaden.com.sa/ar/">https://www.maaden.com.sa/ar/</a>	Riyadh	Saudi Arabian Mining Company (Ma'aden)	26
Through a student internship opportunity model with an internship program	<a href="https://www.saudirailways.org">https://www.saudirailways.org</a>	Dammam	General Corporation for Railways	27
Through a student internship opportunity model with an internship program	<a href="https://www.gso.org.sa/orgs-db/cab/profile/3544/national-methanol-company-">https://www.gso.org.sa/orgs-db/cab/profile/3544/national-methanol-company-</a>	Jubail	National Methanol Company (Ibn Sina)	28
Through a student internship opportunity model with an internship program	<a href="https://www.gso.org.sa/orgs-db/qms/profile/4246/saudi-yanbu-petrochemical-company-(yanpet)?lang=ar">https://www.gso.org.sa/orgs-db/qms/profile/4246/saudi-yanbu-petrochemical-company-(yanpet)?lang=ar</a>	Yanbu	Saudi Yanbu Petrochemical Company (Yanbat)	29
Through a student internship opportunity	<a href="https://www.sabic.com">https://www.sabic.com</a>	Jubail	Eastern Petrochemical	30

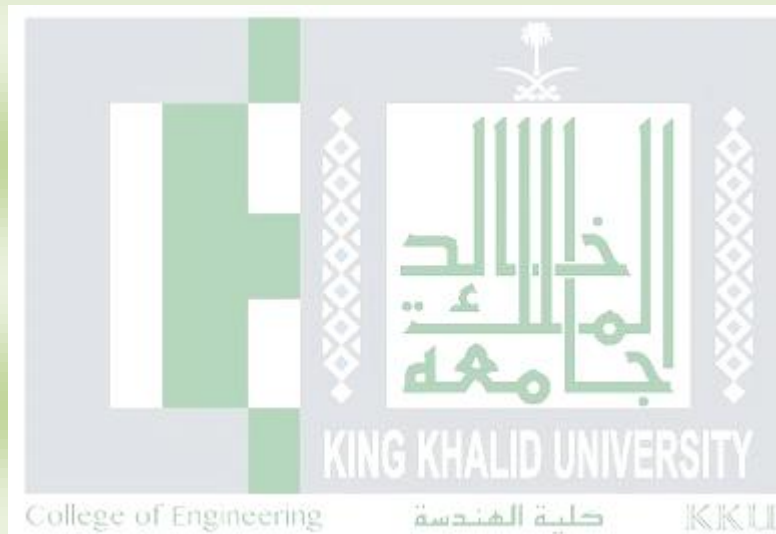
model with an internship program			Company (Sharq)	
Through a student internship opportunity model with an internship program	<a href="https://www.sabic.com">https://www.sabic.com</a>	Jubail	Saudi Petrochemical Company (SADAF)	31
Through a student internship opportunity model with an internship program	<a href="https://www.sabic.com">https://www.sabic.com</a>	Jubail	Jubail Petrochemical Company (Kimia)	32
Through a student internship opportunity model with an internship program	<a href="https://www.sabic.com">https://www.sabic.com</a>	Jubail	Jubail Fertilizer Company (Al-Biruni)	33
Through a student internship opportunity model with an internship program	<a href="https://www.sabic.com">https://www.sabic.com</a>	Jubail	Saudi Methanol Company (Al-Razi)	34
Through a student internship opportunity model with an internship program	<a href="https://www.saudikayan.com.sa/ar">https://www.saudikayan.com.sa/ar</a>	Jubail	Saudi Kayan Petrochemical Company (Saudi Kayan)	35
Through a student internship opportunity model with an internship program	<a href="https://www.safco.com.sa/ar">https://www.safco.com.sa/ar</a>	Jubail	Saudi Arabian Fertilizer Company (SAFCO)	36
Through a student internship opportunity model with an internship program	<a href="http://www.yansab.com.sa/ar">http://www.yansab.com.sa/ar</a>	Yanbu	Yanbu National Petrochemical Company (Yansab)	37
Through a student internship opportunity model with an internship program	<a href="https://www.sabic.com">https://www.sabic.com</a>	Yanbu	National	38

internship opportunity model with an internship program			Industrial Gases Company (GAS)	
Through a student internship opportunity model with an internship program	<a href="https://www.sabic.com">https://www.sabic.com</a>	Jubail	Jubail United Petrochemical Company (United)	39
Through a student internship opportunity model with an internship program	<a href="https://www.sabic.com">https://www.sabic.com</a>	Jubail	Saudi European Petrochemical Company (Ibn Zahr	40
Through a student internship opportunity model with an internship program	<a href="https://www.dermabit.com">https://www.dermabit.com</a>	News	Waterproofing Materials Industries Co. .Ltd	41
Through a student internship opportunity model with an internship program	<a href="https://www.almasafi.com.sa/">https://www.almasafi.com.sa/</a>	Jeddah	Saudi Arabian Refineries Company	42
Through a student internship opportunity model with an internship program	<a href="https://www.saudiceramics.com">https://www.saudiceramics.com</a>	Riyadh	Saudi Ceramics Company	43
Through a student internship opportunity model with an internship program	<a href="https://www.tasnee.com/ar">https://www.tasnee.com/ar</a>	Riyadh	National Industrialization Company	44
Through a student internship opportunity model with an internship program	<a href="http://www.spimaco.com.sa">http://www.spimaco.com.sa</a>	Buraidah	Saudi Pharmaceutical Industries Company	45

Through a student internship opportunity model with an internship program	<a href="https://gasco.com.sa/ar/Pages/default.aspx">https://gasco.com.sa/ar/Pages/default.aspx</a>	Riyadh	National Gas and Industrialization Company	46
Through a student internship opportunity model with an internship program	<a href="http://www.saudicable.com/ar/">http://www.saudicable.com/ar/</a>	Jeddah	Saudi Cable Company	47
Through a student internship opportunity model with an internship program	<a href="https://www.zoujaj-glass.com/ar/">https://www.zoujaj-glass.com/ar/</a>	Riyadh	National Glass Industries Company	48
Through a student internship opportunity model with an internship program	<a href="https://www.amiantit.com/ar/site/">https://www.amiantit.com/ar/site/</a>	Dammam	Saudi Arabian Amiantit Company	49
Through a student internship opportunity model with an internship program	<a href="https://www.fipco.com.sa/en/">https://www.fipco.com.sa/en/</a>	Riyadh	Packaging Materials Manufacturing Company	50
Through a student internship opportunity model with an internship program	<a href="http://www.al-babtain.com.sa">http://www.al-babtain.com.sa</a>	Riyadh	Al Babtain Power & Telecommunications Company	51
Through a student internship opportunity model with an internship program	<a href="http://zentech-co.com">http://zentech-co.com</a>	Jubail	Jubail Summit Company for Technical and Industrial Services Limited	52
Through a student internship opportunity model with an internship program	<a href="http://www.solbsteel.co">http://www.solbsteel.co</a>	Jazan	Steel Company	53

internship opportunity model with an internship program	<a href="#">m/ssc/</a>			
Through a student internship opportunity model with an internship program	<a href="https://www.alfanar.com/arabic/">https://www.alfanar.com/arabic/</a>	Khamis Mushait	Alfanar Company	54

### 10.9. Models



## 14 الفصل الصيفي

### Evaluation of training by the student

اسم الطالب: ..... الرقم الجامعي: .....  
القسم: .....  
جهة التدريب: ..... موقع التدريب: .....

لا	نعم	بنود التقويم
		هل ترى أن فترة التدريب
		هل استفدت من التدريب
		هل كان التدريب على مستوى توقعاتك
		هل استفدت من وقتك كاملاً أثناء التدريب
		هل تحصلت على معلومات فنية أثناء التدريب
		هل كان التدريب في مجال تخصصك
		هل كان هناك إرشاد و توجيه أثناء التدريب
		هل ترشح جهة التدريب مستقبلاً لطلاب القسم
		هل وجدت ارتباط بين الدراسة وما تعلمته في التدريب

ملاحظات:

.....  
.....

اسم الطالب: ..... التوقيع: ..... التاريخ: .....

## Summer Training

معلومات عن الطالب	اسم الطالب	الرقم الجامعي	
	التخصص	المعدل التراكمي	
	المستوى وعدد الساعات المكتسبة بنهاية الفصل الدراسي الحالي		
	الهاتف	المستوى :	الساعات:
	الإيميل	الجوال	
	العنوان		

مخرجات التدريب	هل تستطيع إحضار عرض خاص؟			نعم	لا	○
	الجهات التي ترغب التدريب فيها مبتدئاً بالرغبة الأولى			الأولى	الثانية	الثالثة
	المدينة التي تفضل التدريب فيها اذا كان لجهة التدريب أكثر من فرع			الأولى	الثانية	الثالثة

للمعلومية	١- تتولى وحدة التدريب والخريجين مهمة التنسيق والاتصال مع الشركات والمؤسسات بهدف إيجاد فرص تدريبية لجميع الطلاب المرشحين للتدريب الصيفي حسب الرغبة الأولى وإذا لم يكن هناك إمكانية في الجهة او المدينة الأولى سيبحث في الرغبة الثانية التي تم اختيارها وهكذا.
	٢- يسمح للطلاب الاتفاق مع جهة التدريب مباشرة شريطة أن يحصل على الموافقة بين كل من جهة التدريب و وحدة التدريب والخريجين.
	٣- يجب التفرغ التام للتدريب الصيفي وفي حالة تسجيل الطالب لأي مادة فسوف يتم إلغاء التدريب.
	٤- إذا لم تتمكن الوحدة من إيجاد فرصة تدريبية للطلاب في الرغبات المسجلة فسيتم إضافته لقائمة الطلاب الذين لم تتمكن الوحدة من إيجاد فرصة مناسبة، وستبحث الوحدة عن إيجاد فرصة تدريب اخرى في جهات مختلفة غير الجهات التي سجلها الطالب.

إقرار	أقر أنا الطالب /	بأن جميع البيانات المدونة أعلاه صحيحة ويحق لوحدة
	التدريب والخريجين اتخاذ ما تراه مناسباً في حالة ثبوت غير ذلك.	التوقيع /
	التاريخ /	

للاستخدام الرسمي	إمكانية تحقق الرغبة الأولى		إمكانية تحقق الرغبة الثانية		إمكانية تحقق الرغبة الثالثة	
	الجهة	المدينة	الجهة	المدينة	الجهة	المدينة

الملاحظات	.....
	.....
	.....

## Summer Internship

اسم الطالب:	
الرقم الجامعي:	
التخصص:	

### معلومات عن جهة التدريب

اسم الشركة / المؤسسة:	
العنوان:	
موقع التدريب:	
الموظف المشرف على تدريب الطالب:	
الاسم:	
الوظيفة:	
هاتف:	
فاكس:	
E-Mail:	

### وصف مختصر للتدريب

التوقيع:	التاريخ: / / ١٤٥٥	الختم
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### موافقة القسم الأكاديمي

<input type="checkbox"/> لا يسمح للطالب بالالتحاق بالتدريب لهذا الفصل	
<input type="checkbox"/> يسمح للطالب بالالتحاق بالتدريب لهذا الفصل وذلك في	
التوقيع:	التاريخ: / / ١٤٥٥
وحدة التدريب والخريجين	

### الرجاء إرسال هذا النموذج بعد تعبئته إلى:

كلية الهندسة – جامعة الملك خالد وحدة التدريب والخريجين تليفاكس: ٠١٧٢٤١٩٧١٦
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## Nomination Application Form for Summer Internship Abroad

	الرقم الجامعي		اسم الطالب	معلومات عن الطالب
	المعدل التراكمي		التخصص	
	المستوى : الساعات:	المستوى وعدد الساعات المكتسبة بنهاية الفصل الدراسي الحالي		
		الجوال	الهاتف	
			الأيمل	
			العنوان	

<p>1- اجتياز 95 ساعة دراسية (شاملة ساعات هذا الفصل).</p> <p>2- ألا يكون مسجلاً للفصل الصيفي لهذا العام.</p> <p>3- عدم اجتياز مقرر التدريب الصيفي مسبقاً.</p>	الشروط
--	--------

<p>أقر أنا الطالب /</p> <p>بأن جميع البيانات المدونة أعلاه صحيحة وبحق</p> <p>لوحة التدريب والخريجين اتخاذ مآثره مناسباً في حالة ثبوت غير ذلك.</p> <p>التاريخ /</p> <p>التوقيع /</p>	إقرار
---	-------

<p>.....</p> <p>.....</p> <p>.....</p>	الملاحظات
--	-----------

## 10. Training Courses

The specialized training courses offered by the faculty members of the department are announced at the end of the first week of the semester on the college's website and the department's bulletin board, and through the registration link on the college website, which is prepared by the course provider and announced on the college's website and the department's bulletin board a week before the start of the semester, and the student receives a certificate of attendance of the courses after their end.

The department also participates in providing advanced qualitative training courses in cooperation with the Deanship of Community Service and Continuing Education. It is announced on the website of the college and the Deanship of Community Service and Continuing Education.

## 11. Graduation Project

<b>Page</b>	<b>Content</b>
66	?What is the graduation project .1.11
66	Graduation Project Course .2.11 Registration
66	Mechanism for Selecting and .3.11 Distributing Graduation Projects
66	Graduation Project Objectives .4.11
67	Parties involved in the graduation .5.11 project and their responsibilities
69	Student Assessment Criteria .6.11
70	Specifications and format of the .7.11 graduation project report
70	Success, Failure and Procrastination .8.11
71	Frequently Asked Questions in .9.11 Discussing Graduation Projects
72	Project Idea Submission Request .10.11 Form

### 1.11. What is the graduation project?

It is a scientific work (a specific idea that proposes a logical solution to a particular problem) that the graduate student completes, individually or in a group, according to a two-semester schedule under the supervision of a faculty member in the academic department, at the end of which the student submits a printed report that is discussed and evaluated as a course

### 2.11. Graduation Project Course Registration

Registration in the Graduation Project course is allowed for students who have successfully completed **125 credit hours**.

### 3.11. Mechanism for Selecting and Distributing Graduation Projects

The student can choose a graduation project in one of two ways:

\* The first method: The graduate student should search for a project proposal that suits his abilities and meets his wishes and submit it to the graduation projects committee in the department to appoint a supervisor for him after approving the project proposal (the student has the right to choose a supervisor for his proposed project and the form mentioned in this guide must be filled out by the concerned authority).

The second method: The faculty members submit title proposals \* for graduation projects and the student chooses the topic according to his desire and inclinations, then the department, through the graduation projects committee in the department, distributes the students to the titles proposed by the faculty members at the beginning of each semester, based on the student's choice and the .cumulative average

#### 4.11. Graduation Project Objectives

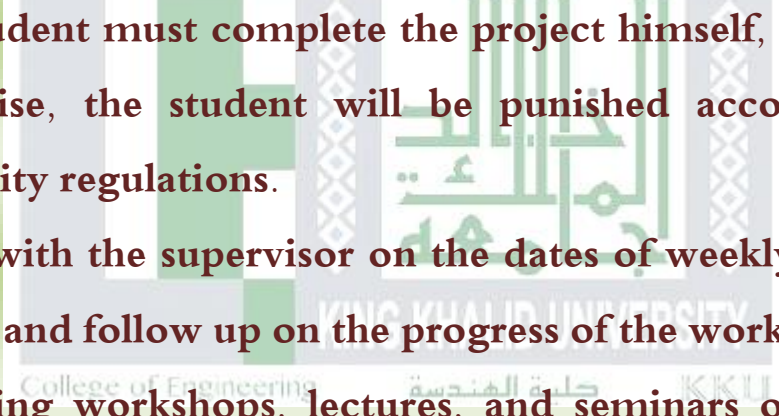
- Testing the ability of the graduate student to apply the knowledge and skills acquired during his undergraduate studies.
- Test the student's ability to work in a team.
- Testing the student's ability to use his/her writing and research abilities in planning a problem.
- Give the graduate student a chance to apply the concepts of professional ethics before actually joining the workforce.
- Studying the extent to which the objectives of the academic program have been achieved.

## 5.11. Parties involved in the graduation project and their responsibilities

To ensure a good completion of the graduation project, the parties involved in its implementation and the specific responsibilities of each party must be identified.

### *Student*

The student is the main party and the first responsible for the implementation of the project and has the following responsibilities and tasks:

- 
- The student must complete the project himself, and if proven otherwise, the student will be punished according to the university regulations.
  - Agree with the supervisor on the dates of weekly meetings to discuss and follow up on the progress of the work.
  - Attending workshops, lectures, and seminars on graduation projects.
  - Write the graduation project report and deliver copies specified by the department for discussion.
  - Preparation of a Power Point Presentation to be reviewed during the discussion before the Committee.
  - Poster preparation to be reviewed on the engineer's day.
  - Attend the discussion session and answer questions and inquiries from the discussion committee.

## *Supervisor*

The supervisor is the second main party in the implementation of the project and has a number of responsibilities, including:

- Schedule weekly appointments to discuss projects with students and provide them with the necessary guidance and guidance.
- Follow up on the implementation of the work plan for the project and ensure that the work has been completed by the student's efforts, and that it is not fully quoted.
- Submit a report to the Chairman of the Projects Committee on the student's progress in the project implementation stages.
- Attend the discussion of the project he supervises, without participating in the evaluation of the discussion committee.
- Evaluate the student by giving him a score of (50).
- Inform the Department's Graduation Projects Committee of any material changes that occur to the project.
- Submitting a report on the status of the project by mentioning one of the cases: (submitted for discussion, postponed or repeated) with the reasons stated.

- Follow up the observations of the discussion committee and ensure the implementation of the amendments required by the committee.

### ***Graduation Projects Committee of the Department***

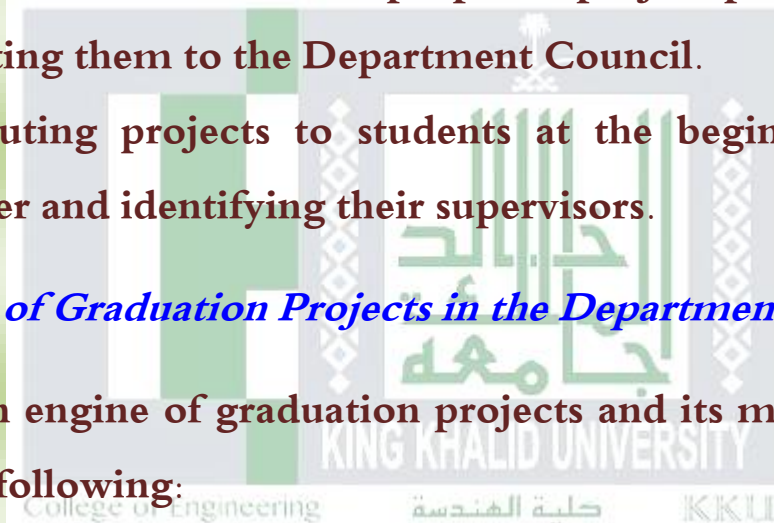
The Graduation Projects Committee is an important party in the process of completing projects, as it is responsible for overall coordination and follow-up. Its tasks can be summarized as follows:

- Supervise the collection of proposed project proposals before presenting them to the Department Council.
- Distributing projects to students at the beginning of each semester and identifying their supervisors.

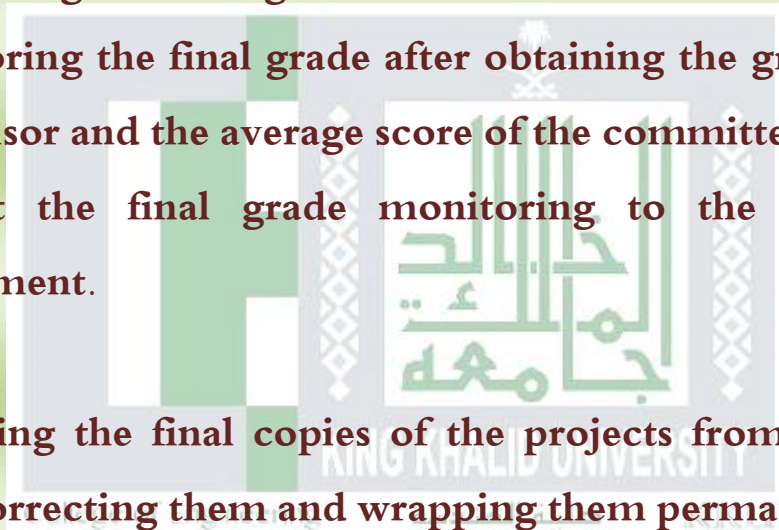
### ***Coordinator of Graduation Projects in the Department***

It is the main engine of graduation projects and its most important tasks are the following:

- Follow-up the implementation of the timetable for organizing graduation projects.
- Coordinate with third parties in case of a situation that requires the intervention of the coordinator to assist the student.
- Announcing the dates of the graduation project discussions.
- Serve as a liaison between students and the supervisor.



- Receiving ( 3) copies of the report for discussion from the students, provided that it is temporarily wrapped.
- Distributing project reports to the discussion committee one week before the discussion, unless this is not possible, for review and evaluation.
- Distributing the Committee's project discussion forms to the members before the discussion.
- Retrieving forms from the committee and extracting and monitoring the average scores.
- Monitoring the final grade after obtaining the grade from the supervisor and the average score of the committee.
- Submit the final grade monitoring to the head of the department.
- Receiving the final copies of the projects from the students after correcting them and wrapping them permanently.



### ***Graduation Projects Discussion Committee***

The committee includes two examiners (one of whom is the chairman of the committee), and includes the project supervisor next to them, and its tasks include:

- Review the graduation project report and make feedback on it to give to students to make corrections.

- Give the students a good time to provide a detailed explanation of their project and then the discussion and questions begin.
- Evaluation of students (each examiner separately) during the discussion of the project and giving them a score out of (60) and monitored as follows:
  - The first seminar of 10 grades is monitored by the discussion committee only
  - The last seminar of 50 degrees is monitored by the discussion committee only.
- Fill out the form prepared for evaluation and submit it to the Graduation Projects Coordinator in the department.

### 6.11. Student Evaluation Criteria

The following criteria can be guided by the supervisor and discussion committee when evaluating the student and placing them in the evaluation form (taking into account the differences between disciplines and projects):

#### *Criteria for Student Supervisor Evaluation*

- Meet follow-up schedules and execute tasks
- Adherence to the project action plan
- Choosing the right methodology for work
- Ability to learn independently
- Percentage of goals achieved
- Clarity of the language of writing and scientific content

#### *Criteria for Evaluating a Student's Discussion Committee*

- Clarity of the action plan and selection of the appropriate methodology
- Presentation clarity and on-time completion
- Ability to discuss and interpret findings and conclusions
- Respond clearly to questions
- Clarity of the language of writing the report and its absence of grammatical and spelling errors

Percentage of goals achieved -

### 7.11. Specifications and format of the graduation project report

The written report is an important part of a graduation project because it reflects the effort put in by the student and the work they have accomplished. It will also be considered a reference for students and researchers who want to learn about the subject.

Therefore, you should pay special attention to writing the report, arranging the scientific ideas contained in it, and using the language of instruction (English) to write the graduation project report. There are general recommendations on writing the report that the student should adhere to (see the report writing form)

### 8.11. Success, Failure and Procrastination

**Success:** *The* student is declared successful if he obtains an overall score in all assessments of not less than 60%.

***Failing:*** The student is considered to have failed in one of the following cases:

- Overall score less than 60%.
- Based on the supervisor's opinion and the justifications he provided about the student's status, in this case, the project is not passed for discussion and the student's failure is announced directly.

***Postponement:*** Projects can be postponed in the following cases:

- The first case: The student is unable to finish the project on time for reasons related to the nature of the project, which the supervisor deems relevant and deserves postponement.
- Second case: The project is submitted for discussion and the discussion committee proposes an additional period to make some amendments or to complete missing parts of the project. In both cases, the appropriate period for postponement must be determined, provided that the project is discussed no later than the second week of the following semester.

**Third Case:** The impossibility of completing the project due to special circumstances related to the student (health or otherwise). In this case, the matter is presented to the department council to consider the student's case and the justifications he has provided, and the supervisor's opinion

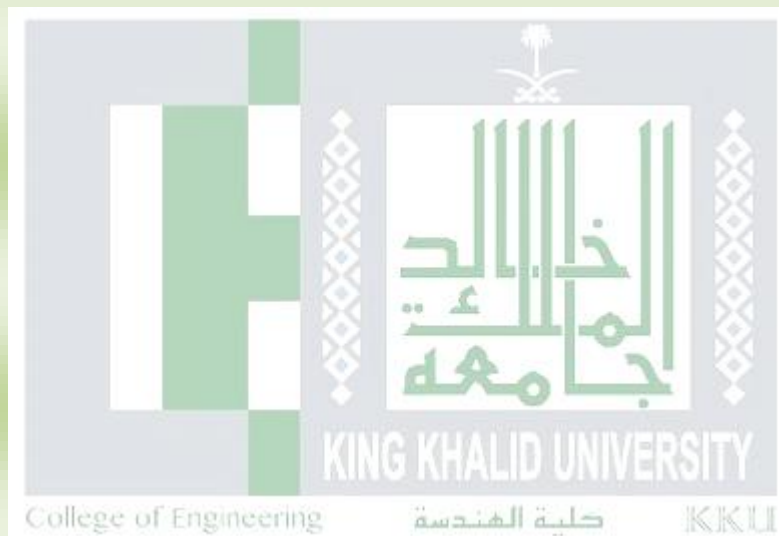
istaken into account if he has worked with the student for some time. The postponement period may be up to a full term, depending on the situation and justifications. In the three cases mentioned above, no grade is assigned to the student and the work is considered incomplete. It should be taken into account that the project should not be postponed more than once, otherwise the postponement will turn into a failure

## **9.11. Frequently Asked Questions in Discussing Graduation Projects**

There are no specific questions, but here are some general questions that the student is expected to ask or should consider before and during the discussion:

- What is the primary goal of your project?
- Who is the main beneficiary of this project?
- What are the most important obstacles you have faced and how have you overcome them?
- What is the future plan to build on what you have done and how will you develop this business in the future?
- What mistakes did you take advantage of?
- What method did you take to analyze and solve the problem?
- What did your project add to the college, the community, and the entity to which the project was applied?

- What is the evaluation of the entity for which the project has been implemented?



## 10.11. Project Idea Submission Request Form

Kingdom of Saudi Arabia  
Ministry of Education  
King Khalid University



المملكة العربية السعودية  
وزارة التعليم  
جامعة الملك خالد

College of Engineering  
Mechanical Engineering Department

كلية الهندسة  
قسم الهندسة الميكانيكية

### Project Idea Submission Request Form

Title of the Suggested Idea :

Short description of the suggested Idea (Please write the Stages of the Idea)

Student Names (Max 5 Students)

Student Name	ID Number
1	
2	
3	
4	
5	

Name and Signature of the Supervisor :

.....

**NOTE: Deadline to submit this template to Graduation Projects Coordinator during the Last month of each semester.**

# Course Description .12

## MECHANICAL ENGINEERING DEPARTMENT

### COURSE DESCRIPTION

<b>1. Course Number</b>	111-GE-3	<b>Course Name</b>	<a href="#"><u>Engineering Drawing</u></a>
<b>2. Credit hours</b>	3/P = 3	<b>Contact hours</b>	6 per week
<b>3. Level / Year</b>	3/2		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> David E. Goetsch, William S. Chalk, Raymond L. Rickman, John Nelson. Technical Drawing and Engineering Communication, 6th Edition, 2010.</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Frederick E Giesecke, Ivan L Hill, Henry C Spencer, Alva Mitchell, John T Dygdon, James E. Novak, Shawna Lockhart, Marla Goodman. Technical Drawing with Engineering Graphics, 14th Edition, 2010. Peachpit Press.</li> <li>2. Colin H. Simmons, Dennis E. Maguire, Neil Phelps, "Manual of Engineering Drawing", 3rd Edition, 2009, Elsevier Ltd. ISBN: 978-0-7506-8985-4.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> This course covers an overview of orthographic projections and sectional views, standards and conventions in drawing and dimensioning, detailed drawings, and computer aided drawing.</p>		
<b>b. Prerequisites</b>	Nil		
<b>c. Co-requisites</b>	Nil		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
		<b>Hardware/software usage</b>	For Blackboard, online quizzes

<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. State the principles of geometrical construction and the fundamental of orthographic projection, sectional and isometric views.</li> <li>2. Reconstruct two-dimensional representation into 3D and vice versa.</li> <li>3. Apply imagination skills in projection of machine parts with the use of international standards of dimensioning and other conventions.</li> <li>4. . Illustrate graphical skills including free-hand sketching and drawing to scale.</li> <li>5. Interpret technical drawing.</li> </ol>													
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Sheet Sizes, Scales, Lines and Lettering, Scales</li> <li>2. Lettering - Engineering drawing tools and their using.</li> <li>3. Tangency operations</li> <li>4. Projections – Isometric views</li> <li>5. Projections –Multi-views</li> <li>6. Free hand sketch – Dimensions</li> <li>7. Missing views</li> <li>8. Sectional Orthographic Projections</li> <li>9. Surfaces intersections, relations between point, line and surface</li> </ol>													
<b>8. Any other information</b>	<b>Course Assessment</b>													
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Activity</th> <th style="text-align: left;">Assessment% (Marks)</th> </tr> </thead> <tbody> <tr> <td>Mid Exam 1 (Mandatory)</td> <td>15% (15 Marks)</td> </tr> <tr> <td>Mid Exam 2 (Mandatory)</td> <td>15% (15 Marks)</td> </tr> <tr> <td>CWs &amp; HWs</td> <td>20% (20 Marks)</td> </tr> <tr> <td>Final Exam</td> <td>50% (50 Marks)</td> </tr> <tr> <td><b>Total</b></td> <td><b>100% (100 Marks)</b></td> </tr> </tbody> </table>	Activity	Assessment% (Marks)	Mid Exam 1 (Mandatory)	15% (15 Marks)	Mid Exam 2 (Mandatory)	15% (15 Marks)	CWs & HWs	20% (20 Marks)	Final Exam	50% (50 Marks)	<b>Total</b>	<b>100% (100 Marks)</b>	
Activity	Assessment% (Marks)													
Mid Exam 1 (Mandatory)	15% (15 Marks)													
Mid Exam 2 (Mandatory)	15% (15 Marks)													
CWs & HWs	20% (20 Marks)													
Final Exam	50% (50 Marks)													
<b>Total</b>	<b>100% (100 Marks)</b>													

L Lecture; T Tutorial; P Practical

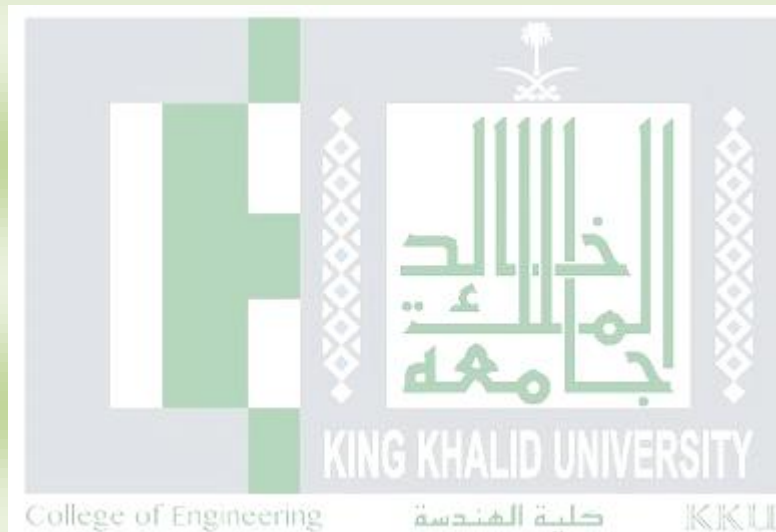
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	211-ME-3	Course Name	<a href="#">Material Science</a>
2. Credit hours	2 L + 1 P = 3	Contact hours	2L + 2P = 4 per week
3. Level / Year	3/2		
4. Textbook, title, author, and year	<b>Textbook:</b> 1. William D. Callister, " Materials Science and Engineering", 2007. 2. Callister, W. D. Jr., "Material Science and Engineering: An Introduction", 6th. Ed., New York, 2006 3. <b>Other supplemental materials:</b>		
5. Specific course information	<b>a. Brief description of the content of the course (catalog description)</b> Material science is a core mechanical engineering subject and a prerequisite for engineering student. This course give student the fundamental information about what are inside the material by this wat student can understand different processing of materials such as mechanical testing and also deformation of materials. The conventional method of classroom interaction between the teacher and student is essential for teaching this subject. At the same time, practical experiments are conducted. All these methods are being followed and any improvement in the implementation shall be made as per the feedback of students. The communication between the teacher and student is regularly maintained and learning material is also provided through blackboard to the students.		
b.Prerequisites	Chemistry/ 107Chem, Physics/ 129 Phys		
c.Co-requisites	Nil		
d.Required, Elective, or Selected elective	Required	Language of instruction	English
6. Course Learning Outcomes	<i>By the completion of the course the student should be able to:</i> 1. State the differences between all types of engineering materials., define and explain the phases and the invariant reactions of phase diagrams. 2. Recognize the structure of metals on the macro/micro – scale 3. Differentiate the material types based on their apparent properties		
7. Brief list of topics to be covered	10. General Introduction about material Science. 11. This course covers and concentrates on principles of material science such as atomic structure and interatomic bounding, 12. crystal structure of materials, theory of diffusion, imperfections in crystals. 13. Mechanical testing and evolution of materials,		

	14. Phase diagram and cooling curves of metals and alloys, iron-carbide diagram for steel and cast iron. 15. Strengthening mechanisms	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b> Mid Exam 1 (Mandatory) Mid Exam 2 (Mandatory) Quizzes Lab Report Oral discussion  Final Exam Total	<b>Assessment% (Marks)</b> 15% (15 Marks) 15% (15 Marks) 10% (10Marks) 10% (10 Marks)  50% (50 Marks) 100% (100 Marks)

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	212-ME-2	Course Name	<a href="#">Engineering Mechanics "STATICS"</a>
2. Credit hours	2L	Contact hours	2L = 2 per week
3. Level / Year	3/2		
4. Textbook, title, author, and year	<p><b>Textbook:</b> Meriam, J. and L.G. Kraige, "Engineering Mechanics", Vol. 1-Statics and Vol.2-Dynamics, John Wiley and Sons Inc, 2001.</p> <p><b>Other supplemental materials:</b> Engineering Mechanics-Statics and Dynamics-Bedford and Fowler</p>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b> This course covers the equilibrium of rigid body of different mechanisms with considering the forces and moments that cause the motion. It treat the 2D and 3D Equilibrium of a rigid body. The calculation of the center of gravity, the shear force and bending moment of a rigid body.</p>		
b. Prerequisites	--		
c. Co-requisites	Nil		
d. Required, Elective, or Selected elective	Required	Language of instruction	English
6. Course Learning Outcomes	<p>By the completion of the course the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Knowledge and Define basic concepts of static, calculation of the moment, resultant force and moment.</li> <li>2. Knowledge and calculation of the center of gravity of a rigid body. Use the Pappus-Guldinus Theorem.</li> <li>3. Knowledge and Construct the shear-bending diagram and plot the curve</li> <li>4. Knowledge Solve and interpret problems of static of real rigid body</li> </ol>		
7. Brief list of topics to be covered	<ol style="list-style-type: none"> <li>1. General Introduction to Engineering Mechanics, coordinates in 2D and 3D of a point, calculation of the vector and scalar product</li> <li>2. Equivalent forces, internal and external forces, calculation of the moment about point and axes, moment transfer from different points, reduction of the forces and the moments.</li> </ol>		

	<p>3. Equilibrium of rigid body, Calculation of the unknowns forces by equilibrium law (2D and 3D), various supports.</p> <p>4. Calculation of the centroid of rigid body, composite area method, Theorems of Pappus-Guldinus, calculation of the concentrated force from distributed load</p> <p>5. Analysis of structures, trusses, frame and machines, calculation of the force using equilibrium law, draw the shear force and bending moment for the concentrated load, draw the shear force and bending moment for the distributed force.</p>																
<b>8. Any other information</b>	<b>Course Assessment</b>																
	<table border="1"> <thead> <tr> <th>Activities</th> <th>Assessment% (Marks)</th> </tr> </thead> <tbody> <tr> <td>Quiz</td> <td>5%</td> </tr> <tr> <td>Midterm exam1</td> <td>15%</td> </tr> <tr> <td>Quiz</td> <td>5%</td> </tr> <tr> <td>Homework</td> <td>15%</td> </tr> <tr> <td>Midterm exam1</td> <td>5%</td> </tr> <tr> <td>Quiz</td> <td>50%</td> </tr> <tr> <td>Total</td> <td></td> </tr> </tbody> </table>	Activities	Assessment% (Marks)	Quiz	5%	Midterm exam1	15%	Quiz	5%	Homework	15%	Midterm exam1	5%	Quiz	50%	Total	
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L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	221-ME-3	Course Name	<a href="#">Production technology and workshop</a>								
2. Credit hours	1 L + 2 P = 3	Contact hours	1L + 4P = 5 per week								
3. Level / Year	4/2										
4. Textbook, title, author, and year	<b>Textbook:</b> Chapman : "Workshop Technology". Vol. : 1 , 2 & 3. Butterworth-Heinemann, latest edition.										
5. Specific course information	<b>a. Brief description of the content of the course (catalog description)</b> The overall aim of the present course is to explain the basics of production technology and workshop operations as well as a brief review of the engineering materials and the principals of automobile and electricity which may be useful in better understanding of the field of manufacturing technology.										
b. Prerequisites	not										
c.Co-requisites	Nil										
d. Required, Elective, or Selected elective	Required	Language of instruction	English								
6. Course Learning Outcomes	<i>By the completion of the course the student should be able to:</i> <ol style="list-style-type: none"> <li>Acquire a general knowledge about the Production technology.</li> <li>Handle the basics of production technology through the theoretical study and practical training at different workshops.</li> </ol>										
7. Brief list of topics to be covered	<ol style="list-style-type: none"> <li>General Introduction about material Science.</li> <li>This course covers and concentrates on principles of workshop</li> <li>Production technology methods ,</li> <li>Carpentry workshop</li> <li>Automobile workshop</li> <li>technology of machining</li> <li>Sheet metal forming and welding</li> <li>Electrical workshop</li> </ol>										
8. Any other information	<b>Course Assessment</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Activity</th> <th style="text-align: left;">Assessment% (Marks)</th> </tr> </thead> <tbody> <tr> <td>Practical work and reports</td> <td>20%</td> </tr> <tr> <td>Midterm exams</td> <td>30%</td> </tr> <tr> <td>Final exam</td> <td>50%</td> </tr> </tbody> </table>			Activity	Assessment% (Marks)	Practical work and reports	20%	Midterm exams	30%	Final exam	50%
Activity	Assessment% (Marks)										
Practical work and reports	20%										
Midterm exams	30%										
Final exam	50%										

L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	222- ME-3	Course Name	<a href="#">Thermodynamics 1</a>
2. Credit hours	2 L + 1 T/P = 3	Contact hours	1L + 2T/P = 4 per week
3. Level / Year	4/2		
4. Textbook, title, author, and year	<p><b>Textbook:</b> Michael J. Moran and Howard N. Shapiro, "Fundamentals of Engineering Thermodynamics",2004</p> <p><b>Other supplemental materials:</b> 1. Richard E. Sonntag, "Fundamentals of Thermodynamics",2004 2. -Richard E. Sonntag, Claus. B. and Gordon J. VanWylen, "Fundamentals of Thermodynamics", John Wiley&amp;Sons,2002</p>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b> This course deals with the fundamental principles of thermodynamics such as heat, work, thermodynamic systems, and the first and second laws of thermodynamics and their applications on thermodynamics engineering problems. Also, this course presents a number of examples and problems concern to processes that occur in some equipment such as power plants, vapor compression refrigerators, thermoelectric coolers and rocket engines.</p>		
b. Prerequisites	119-MATH-3& 129-PHYS-4		
c.Co-requisites			
d. Required, Elective, or Selected elective		Language of instruction	English
6. Course Learning Outcomes	<ol style="list-style-type: none"> <li>1. Use of new technology for the treatment and synthesis of electric generating power plant</li> <li>2. Presents new concepts and definitions of statistical thermodynamics</li> <li>3. Prepare the student to effectively use thermodynamics in the practice of engineering</li> <li>4. Assist the student in gaining an understanding of thermodynamics</li> <li>5. Provide an adequate preparation for the study of more advanced topics in thermodynamics that the department might wish to have included in such course</li> <li>6. Acquire some skills of designing steam power plants, gas turbine power plants, combined cycle power plant, desalination systems and the</li> </ol>		

	<p>measurements that related to its operation</p> <p>7. Understand the theory and application of the first law, second law, and steady flow and steady-state applications</p> <p>8. Present the material on the irreversibility and availability.</p>												
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Fundamental concepts and definitions</li> <li>3. Properties of pure substances</li> <li>4. Work and heat</li> <li>5. First law of thermodynamics and its applications</li> <li>6. The second law of thermodynamics</li> <li>7. Air-standard Brayton cycle</li> <li>8. Entropy, reversibility, and irreversibility</li> <li>9. Applications of steady state and steady flow</li> <li>10. Uniform flow and some processes</li> </ol>												
<b>8. Any other information</b>	<b>Course Assessment</b>												
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Quizzes and assignments on blackboard	15												
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L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	223-ME-3	<b>Course Name</b>	<a href="#"><u>Strength of materials and Their Testing</u></a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	4/2		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b>                      Mechanics of Materials (8th Edition) Hardcover – April 1, 2010 by Russell C. Hibbeler (Author) ISBN-13: 978-0136022305, ISBN- 10: 0136022308, Edition: 8th</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>Mechanics of Materials Hardcover – January 4, 2011 by Ferdinand Beer (Author), Jr., E. Russell Johnston (Author), John DeWolf (Author), David Mazurek (Author) ISBN-13: 978-0073380285, ISBN-10: 0073380288, Edition: 6th</li> <li>SolidWork's is a 3D software can be used for topics taught in the Strength of Materials course</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b>                      ME223, Strength of Materials and their testing is a 3-credit course designed to students at their fourth level in their respective colleges. This course is an initiation to the mechanical engineering design based on the general concept of stress and strain.</p> <p>The objective of this course is that the student acquires the basis of Elasticity and Strength of Materials, such as general assumptions and hypothesis for strength of materials theories; different types of loading; normal stress and strain; mechanical properties of materials; Shear stress and strain; analysis of stress and deformation in axially loaded members, Trion formula in circular shafts; pure bending, shear force and bending moment diagram; stress and strain transformations, MOHR's circle.</p>		
<b>b. Prerequisites</b>	Materials Science - ME212		
<b>c. Co-requisites</b>	Nil		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<p><i>By the completion of the course the student should be able to:</i></p> <ol style="list-style-type: none"> <li>Outline assumptions and general objectives for strength of materials theories.</li> <li>Differentiate the relationship between internal loads and type of loading...</li> <li>Explain the difference between normal stress and shear stress. .</li> <li>. Analyze and calculate simple problems design involving stresses and strain in two dimensions.</li> </ol>		

<p><b>7. Brief list of topics to be covered</b></p>	<ol style="list-style-type: none"> <li>1. Introduction to strength of materials and static review, general objective and assumptions of strength of materials, internal loads, different types of loading</li> <li>2. Tension, compression, normal stress, normal strain, mechanical properties, Hooke's law, Poisson ratio, allowable stress</li> <li>3. Deformation of Axially Loaded Members, thermal stress and Thermal Strain</li> <li>4. Shear stress, Shear strain, Hooke's law, shear modulus</li> <li>5. Torsion formulas, polar moment, Angle of Twist , Torsion of Solid Non-Circular Sections, Thin walled pressure vessels, longitudinal and transversal stresses in cylindrical vessels, stress in spherical vessels</li> <li>6. Pure bending, bending stress, moment of inertia of sectional area, radius of gyration</li> <li>7. Shear Force and Bending Moment diagram</li> <li>8. stress and strain transformations, General equations of plane stress and strain Principal Stresses, Maximum in-plane shear stress and strain, Mohr's Circle, Triaxial stress and strain, Absolute Maximum shear strain</li> </ol>													
<p><b>8. Any other information</b></p>	<p style="text-align: center;"><b>Course Assessment</b></p>													
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Reports and tutorial Work	10%													
Final Exam	50%													

L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	311-ME-3	<b>Course Name</b>	<a href="#"><u>Metal Cutting Processes</u></a>
<b>2. Credit hours</b>	1 L + 2 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	5/3		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. SeropeKalpakjian and Steven R Schmid, “Manufacturing Processes for Engineering Materials”, Pearson Education Limited, 2008</li> <li>2. David A. Stephenson, John S. Agapiou, "Metal Cutting Theory and Practice "Taylor &amp; Francis Group, 2006</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Benjamín W. Niebel, Alan B. Draper, Richard A. Wysk, “Modern Manufacturing Process Engineering”, McGraw-Hill, 2002</li> <li>2. Mikell P. Groover, “Fundamentals of Modern Manufacturing: Materials, Processes, and Systems”, John Wiley &amp; Sons, 2010</li> <li>3. E. Edward Moor Trent, Paul Kenneth, "Metal Cutting", Butterworth-Heinemann, 2000</li> <li>4. Degormo E. P., Black, J.T., and Kohser, R. A., "Materials and Processes in Manufacturing", 9th Edition, John Wiley &amp; Sons, 2003.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b>                  This course aims to cover the principles of the conventional machining processes, the different conventional machining operations, the tool and work piece fixation methods, the machine specifications, and the kinematic systems represent main items in this course. Furthermore, the course includes finishing operations and engineering metrology. This course covers the determination of cutting forces (graphically and numerically), and the estimation of the machining times in each operation. Also, it covers the chip breakers in machining and the concept of machinability and its improvement. This course aims to prepare the student to effectively using the non-conventional machining methods.</p>		
<b>b. Prerequisites</b>	<b>Production Technology and Workshop (221-ME-3) &amp; Material Science (211-ME-3)</b>		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>		<b>Language of instruction</b>	English

<b>6. Course Learning Outcomes</b>	Upon completing this course, it is expected that the students will be able to: <ol style="list-style-type: none"> <li>1. Define the basics and fundamentals of the metals machining.</li> <li>2. List the features and details of each machining techniques.</li> <li>3. Estimate machining parameters involved in machining a product.</li> <li>4. Use machines to shape various materials.</li> <li>5. Estimate the machining times and the machining forces.</li> <li>6. show self-confidence to work without supervision.</li> <li>7. Demonstrate ability to work in teams.</li> </ol>	
<b>7. Brief list of topics to be covered</b>	<p><b>Basic Concepts of Machining General Introduction:</b></p> <ul style="list-style-type: none"> <li>• Manufacturing Processes – Types of machining, Orthogonal and oblique cutting, Cutting Conditions, Chip types.</li> </ul> <p><b>Conventional Machining Processes:</b></p> <ul style="list-style-type: none"> <li>• Turning Processes: Principles, operations, the machine (center lathe) components.</li> <li>• Drilling Processes: Principles, operations, the machine components.</li> <li>• Milling Processes: Principles operations, the machine components.</li> <li>• Planning and shaping Processes: Principles, operations, the machine components.</li> <li>• Grinding Processes: Principles, abrasives, grinding wheels, fixation of grinding wheels, process types.</li> <li>• Estimation of machining times in different conventional machining processes.</li> <li>• Finishing Processes: Principles, operations, the machine components.</li> <li>• Machining forces and Merchant’s Circle Diagram (MCD).</li> <li>• Cutting temperature, application of cutting fluid, machinability, Failure of cutting tools and tool life, and cutting tool materials, Machinability and its improvements.</li> </ul> <p><b>Non-conventional Machining:</b></p> <ul style="list-style-type: none"> <li>• Different Non-conventional machining processes (Electrical Discharge Machining –Electron Beam Machining – Laser Beam Machining - Electro Chemical Machining –Ultra sonic Machining – Water Jet Machining, Abrasive Jet Machining etc.)</li> </ul>	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b> Quizzes Midterm- 1 Midterm- 2 Final experimental exam Final exam	<b>Assessment% (Marks)</b> 10% 10% 15% 15% 50%

L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	312-ME-3	Course Name	<a href="#">Mechanical Engineering Drawing</a>
2. Credit hours	1 L + 2 rpm = 3	Contact hours	2L + 2T/P =4 per week
3. Level / Year	5/3		
4. Textbook, title, author, and year	<p><b>Textbook:</b></p> <p>K. L. Narayana, P. Kannaiah, and K. Reddy, "Machine Drawing", 5th Edition, 2016, New Age International Ltd. Publishers. ISBN: 978-81-224-4054-6.</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>Colin H. Simmons, Dennis E. Maguire, Neil Phelps, "Manual of Engineering Drawing", 3rd Edition, 2009, Elsevier Ltd. ISBN: 978-0-7506-8985-4.</li> <li>Bertoline–Wiebe, "Engineering Graphics – Fundamentals of Graphics Communication", 5<sup>th</sup> Editions, 2006, McGraw-Hill, ISBN: 0-390-73230-3</li> </ol>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b> This course covers an overview of orthographic projections and sectional views, standards and conventions in drawing and dimensioning, detailed and assembly drawings, and computer-aided drawing.</p>		
b. Prerequisites	<b>111-GE-3. Engineering Drawing</b>		
c. Co-requisites			
d. Required, Elective, or Selected elective	Required	Language of instruction	English
6. Course Learning Outcomes	<ol style="list-style-type: none"> <li>Recognize assembly drawings and sections</li> <li>Create 2D and 3D assembly drawings</li> <li>Demonstrate the use of SolidWorks for creating assemblies and producing professional engineering working drawings I</li> <li>Illustrate and interpret engineering drawing standards.</li> </ol>		
7. Brief list of topics to be covered	<ol style="list-style-type: none"> <li>Conventional Practices for Orthographic Projections and Sectional Views             <ol style="list-style-type: none"> <li>Conventional Practices in Orthographic views: Half Views, Partial Views, and Aligned Views.</li> <li>Conventional Practices in Sectional views: Conventions for Ribs, Webs, Spokes, and lugs in Full Sectional View, Broken Section, Removed Section, Revolved Section, Offset Section, and Auxiliary Sectional Views.</li> </ol> </li> </ol>		

	<ul style="list-style-type: none"> <li>c. Simplified Representations of Standard Machine Elements.</li> </ul> <ol style="list-style-type: none"> <li>2. Standards and Conventions in Drawing and Dimensioning <ul style="list-style-type: none"> <li>a. Limits, Fits and Tolerances, Symbols, and Surface Finish.</li> <li>b. Threads, Bolts and Nuts.</li> <li>c. Welded and Riveted Joints.</li> </ul> </li> <li>3. Detailed and Assembly Drawings <ul style="list-style-type: none"> <li>a. Working Drawings and its Components.</li> <li>b. Detailed Drawings.</li> <li>c. Assembly Drawings.</li> <li>d. Practices of Detailed and Assembly Drawings.</li> </ul> </li> <li>4. Computer Aided Drawing (CAD) <ul style="list-style-type: none"> <li>a. Isometric Drawing (Parts).</li> <li>b. Assembly Drawing.</li> <li>c. Creating 2D drawings from a part or an assembly.</li> <li>d. Dimensioning Drawings.</li> </ul> </li> </ol>																										
<b>8. Any other information</b>	<b>Course Assessment</b>																										
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L Lecture; T Tutorial; P Practical

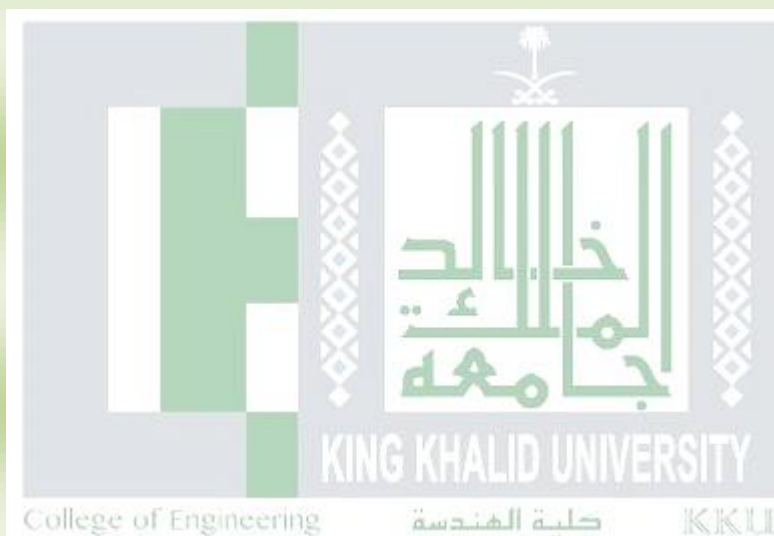
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	<b>313-ME-2</b>	<b>Course Name</b>	<a href="#"><u>Engineering Mechanics (Dynamics)</u></a>
<b>2. Credit hours</b>	2L + 0 rpm = 2	<b>Contact hours</b>	2L + 0T/P = 2 per week
<b>3. Level / Year</b>	5/3		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <p>Vector Mechanics for Engineers, Dynamics, 7th Edition, F. B. Beer, E. R. Johnston, W. L. Clausen, McGraw Hill, 2003</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Engineering Mechanics: Dynamics, 1st Computational Edition, R. W. Soutas-Little, D. J. Inman, CL-Engineering, 2007.</li> <li>2. Engineering Mechanics: Dynamics. 12th Edition, R. C. Hibbeler, Prentice Hall, 2009.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> This course covers an overview of orthographic projections and sectional views, standards and conventions in drawing and dimensioning, detailed and assembly drawings, and computer-aided drawing.</p>		
<b>b. Prerequisites</b>	<b>111-GE-3. Engineering Drawing</b>		
<b>c. Co-requisites</b>			
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. State the principles of dynamics</li> <li>2. Outline the principles for the idealizations of Statics and Dynamics</li> <li>3. Apply the principles of dynamics to engineering problems</li> <li>4. Estimate the realistic problems encountered in engineering practice</li> <li>5. Evaluate basic engineering problems independently</li> <li>6. Illustrate problems of dynamics in groups</li> <li>7. Interpret the problems on dynamic mechanisms</li> <li>8. Assess the problems using software</li> </ol>		
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Newton's Laws of Motion</li> <li>2. Kinematics of Particles</li> </ol>		

	<ul style="list-style-type: none"> <li>3. Kinetics of Particles</li> <li>4. Plane Kinematics of Rigid Bodies</li> <li>5. Plane Kinetics of Rigid Bodies</li> <li>6. Free Vibration of Particles</li> </ul>												
<b>8. Any other information</b>	<b>Course Assessment</b>												
	<table border="1"> <thead> <tr> <th>Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)</th> <th>Proportion of Total Assessment</th> </tr> </thead> <tbody> <tr> <td>Quiz</td> <td>10 %</td> </tr> <tr> <td>Midterm exam1</td> <td>15 %</td> </tr> <tr> <td>Homework</td> <td>10%</td> </tr> <tr> <td>Midterm exam 2</td> <td>15%</td> </tr> <tr> <td>Final Exam</td> <td>50%</td> </tr> </tbody> </table>	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Proportion of Total Assessment	Quiz	10 %	Midterm exam1	15 %	Homework	10%	Midterm exam 2	15%	Final Exam	50%
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Quiz	10 %												
Midterm exam1	15 %												
Homework	10%												
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Final Exam	50%												

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	321-ME-3	<b>Course Name</b>	<a href="#">Theory of Machines</a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	6/3		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> Theory of Machines; R.S. Khurmi and J.K. Gupta; S. Chand and company Ltd.; New Delhi.</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Theory of Machines; SS Rattan: Tata McGraw Hill, New Delhi.</li> <li>2. J. E. Shigley, J. J. Uicker, Theory of machines and mechanisms.</li> <li>3. Mechanism and Machine Theory; J S Rao and Dukkupati; Wiley Eastern, New Delhi.</li> <li>4. Theory of Mechanism and Machine; A Ghosh and AK Malik, East West Press (Pvt.) Ltd., New Delhi.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> This course covers and concentrates on the theory, design, performance, and principles of the Kinematics and Kinetics of rigid bodies which deal with motion; position; velocity and acceleration (Dynamics of machines), also dealing with cams, governors, balancing and their applications. Theory of machines is a core mechanical engineering subject and a prerequisite for machine design face.</p>		
<b>b. Prerequisites</b>	Engineering Mechanics (statics) 212-ME-3 Engineering Mechanics (dynamics) 313-ME-3		
<b>c. Co-requisites</b>	Nil		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English

<b>6. Course Learning Outcomes</b>	<p><i>By the completion of the course the student should be able to:</i></p> <ol style="list-style-type: none"> <li>1. Define the basic concepts of machines and mechanisms.</li> <li>2. State safety measures to be incorporated in CAM Design.</li> <li>3. Design velocity and acceleration diagrams of basic mechanisms.</li> <li>4. Develop the displacement diagram and cam profile.</li> <li>5. Compare different types of Gears and Gear Trains and solve design problems.</li> <li>6. Explain the functions, types and characteristics of governors and solve numerical problems.</li> </ol>	
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Definition of Mechanisms and Machines</li> <li>3. Displacement Analysis of Mechanisms</li> <li>4. Velocity Analysis of Mechanisms</li> <li>5. Acceleration Analysis of Mechanisms</li> <li>6. Cam Design</li> <li>7. Gear train Theory</li> <li>8. Balancing of rotating masses</li> <li>9. Governors</li> </ol>	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b> Assignment Quizzes Midterm- 1 Midterm- 2 Practical report Final practical exam Final exam Total	<b>Assessment% (Marks)</b> 5% 5% 15% 15% 5% 5% 50% (50 Marks) 100% (100 Marks)

L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	322-ME-3	<b>Course Name</b>	<a href="#">Fluid Mechanics</a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	6/3		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> Clayton T. Crowe , Donald F. Elger and John A. Roberson, Engineering Fluid Mechanics", John Wiley&amp; Sons, Inc., 8<sup>th</sup> Ed., 2006</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Frank M. White, "Fluid Mechanics" McGraw Hill Comp. 2003.</li> <li>2. Robert W. Fox, Alan T. McDonald and Philip J. Pritchard " Introduction to Fluid Mechanics", 2005.</li> <li>3. Lecture notes .</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> The course aims to provide the student with the basic concepts required to understanding and solving the fluid mechanics problems applied on engineering. Concepts and definitions, Fluid statics. Forces on submerged surfaces and bodies. Non-viscous flow, conservation of mass, momentum and energy. Bernoulli equation. Dimensional analysis. The PI-Theorem, similarity. Viscous flow, pipe flow, losses in conduit flow. Laminar and turbulent flow.</p>		
<b>b. Prerequisites</b>	ME-222-3 Thermodynamics 1 <span style="float: right;">كلية الهندسة KKU</span>		
<b>c. Co-requisites</b>	Nil		
<b>d. c. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<p><i>By the end of this course, the student should be able to;</i></p> <ol style="list-style-type: none"> <li>1. Describe different types of Fluids and recognize the application of dimensions and units .</li> <li>2. Recognize the fundamental principles, mathematical laws of fluid statics, fluid kinematics, dynamics., and recognizing head losses and flow characteristics in simple pipes.</li> <li>3. Estimate the viscous forces in various engineering applications as fluids deform. Interpret the variation of pressure in a fluid at rest.),</li> <li>4. Calculate the forces exerted by a fluid at rest on a plane or curved submerged</li> <li>5. Surface.</li> <li>6. Compute the effect of buoyancy on submerged and floating bodies and the ability to conduct experiments.</li> <li>7. Apply the mass conservation equation in a flow system.</li> <li>8. Compare various kinds of forces and moments acting on a fluid flow field.</li> <li>9. Illustrate independently and as a part of a team minor losses in energy</li> </ol>		

	associated with pipe flow system. 10. Operate internet in searching of the subjects related to fluid mechanics.														
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1- Introduction: Fluid definition- Dimensions and units systems</li> <li>2- Fluid properties</li> <li>3- Fluid Statics:</li> <li>4- Buoyancy and Stability of submerged and floating bodies</li> <li>5- Fluid Kinematics</li> <li>6- Fluid Dynamics</li> <li>7- Energy equation ( Bernoulli equation</li> <li>8- Dimensional analysis and similarity (Bucking ham's theorem)</li> <li>9- Flow through Pipes</li> </ol>														
<b>8. Any other information</b>	<b>Course Assessment</b>														
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<b>Total</b>	100% (100 Marks)														

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	411-GE-2	<b>Course Name</b>	<u><a href="#">Professional Ethics and Practice</a></u>	
<b>2. Credit hours</b>	2 L + 0 rpm = 2	<b>Contact hours</b>	2L + 0T/P = 2 per week	
<b>3. Level / Year</b>	7/4			
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. Harris Jr., C.E. , Pritchard, M.S., Rabins, M.J., Engineering Ethics Concept and Cases: 4th edition (California: Wadsworth Cengage Learning, 2009)</li> <li>2. Mike Martin and Roland Schinzinger, “Ethics in Engineering”, McGraw Hill, New York, 2005.</li> <li>3. L.H. Newton &amp; Catherine K.D. – Classic cases in Environmental Ethics, Belmont: California Wadsworth, 2006</li> <li>4. Charles E Harris, Michael S Pritchard and Michael J Rabins, “Engineering Ethics – Concepts and Cases”, Thompson Learning, 2000.</li> </ol> <p><b>Other supplemental materials:</b></p>			
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b>                  This course will allow students to understand the moral problems faced in the corporate setting and wider philosophical frameworks along with social importance and their intellectual challenges are given its due placement. It is important that students have to be not only technically competent, but socially accountable in their careers. Hence, this course expect them to learn to share ideas and concepts, working in teams on majority of the case studies to have enough sensitivity to engineering professionalism.</p>			
<b>b. Prerequisites</b>	None			
<b>c. Co-requisites</b>	None			
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English	
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Define how societal morals vary with culture and how this influences ethical thought and action.</li> <li>2. Outline duties and responsibilities as professionals through gaining knowledge of the philosophies of ethics, professional practice, and world culture.</li> <li>3. Use some of the classic cases as well as contemporary issues in engineering ethics and practice.</li> <li>4. Demonstrate written communication skills with regard to ethical and</li> </ol>			

	<p>professional issues in practical engineering applications.</p> <p>5. Illustrate oral communication skills with regard to ethical and professional issues in practical engineering applications.</p>												
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Engineering Ethics</li> <li>2. Engineering Ethics, Variety of moral issues, Types of inquiry, Moral dilemmas, Moral Autonomy, Kohlberg's theory, Gilligan's theory, Consensus and Controversy, Professions and Professionalism, Professional Ideals and Virtues, Uses of Ethical Theories</li> <li>3. Engineering as Social Experimentation</li> <li>4. Experimentation, Engineers as responsible Experimenters, Research Ethics, Codes of Ethics, Industrial Standards, A Balanced Outlook on Law, The Challenger Case Study</li> <li>5. Engineer's Responsibility for Safety</li> <li>6. Safety and Risk, Assessment of Safety and Risk, Risk Benefit Analysis, Reducing Risk, Case Studies</li> <li>7. Responsibilities and Rights</li> <li>8. Saudi Laws and professional behavior ,Collegiality and Loyalty, Respect for Authority, Collective Bargaining, Confidentiality, Conflicts of Interest, Occupational Crime, Professional Rights, Employee Rights, Intellectual Property Rights (IPR), Discrimination</li> <li>9. Global Issues</li> <li>10. Multinational Corporations, Business Ethics, Environmental Ethics, Computer and Internet Ethics, Role in Technological Development, Weapons Development, Engineers as Managers, Consulting Engineers, Engineers as Expert Witnesses and Advisors, Honesty, Moral Leadership, Sample Code of Conduct (IEE, NSPE, ABET etc.)</li> <li>11. Practices in Saudi Arabia and compares them with international practices.</li> </ol>												
<b>8. Any other information</b>	<b>Course Assessment</b>												
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L Lecture; T Tutorial; P Practical

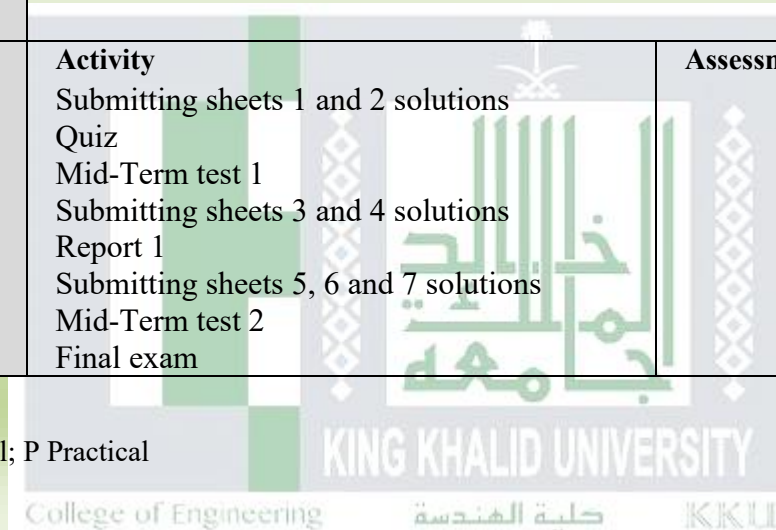
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	411-ME-3	<b>Course Name</b>	<u><a href="#">Machine Elements Design</a></u>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	7/4		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. Khurmi, R.S. &amp; Gupta, J.K., “Machine Design”, Eurasia Publishing House, Last Edition.</li> <li>2. Shigley, J.E., “Mechanical Engineering Design”, McGraw Hill, Inc., Last Edition.</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Robert C. Juvinall &amp; Kurt M. Marshek, “Fundamentals of Machine Components Design”, 5<sup>th</sup> Edition, John Wiley &amp; Sons Inc., 2012, ISBN 9781118012895.</li> <li>2. Robert L. Mott, “Machine Elements in Mechanical Design”, 3rd Edition, Prentice Hall, 1999.</li> <li>3. Avallone, E.A., Baumeister, T., “Marks Standard Handbook for Mechanical Engineers”, 11th Edition, McGraw Hill, 2007.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b></p> <p>This course contains an overview of different types of stresses, materials selection, failure theories, and design of joints. It also covers the design of different machine elements such as couplings, clutches, brakes, springs, chain drives, and power screws. Computer-aided design.</p>		
<b>b. Prerequisites</b>	223-ME-3 Strength of materials, 312-ME-3. Mechanical Engineering Drawing		
<b>c. Co-requisites</b>	None		
<b>c. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English

<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Recognize the difference between theory and the applied design.</li> <li>2. Define different design theories and their applications.</li> <li>3. Analyze forces and calculate principal stresses.</li> <li>4. Demonstrate skills in designing simple machine parts.</li> <li>5. Illustrate skills in using computer in design and drawing.</li> </ol>																		
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Introduction to design processes, types of stresses, and material selection</li> <li>2. Failure theories: static and dynamic.</li> <li>3. Design of joints: riveted, welded, screwed, and cotter and knuckle joints</li> <li>4. Couplings design: rigid and flexible</li> <li>5. Clutches design.</li> <li>6. Brakes design</li> <li>7. Springs design</li> <li>8. Chain drives</li> <li>9. Power screws design</li> <li>10. Computer-aided design using SolidWorks</li> </ol>																		
<b>8. Any other information</b>	<b>Course Assessment</b>																		
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L Lecture; T Tutorial; P Practical



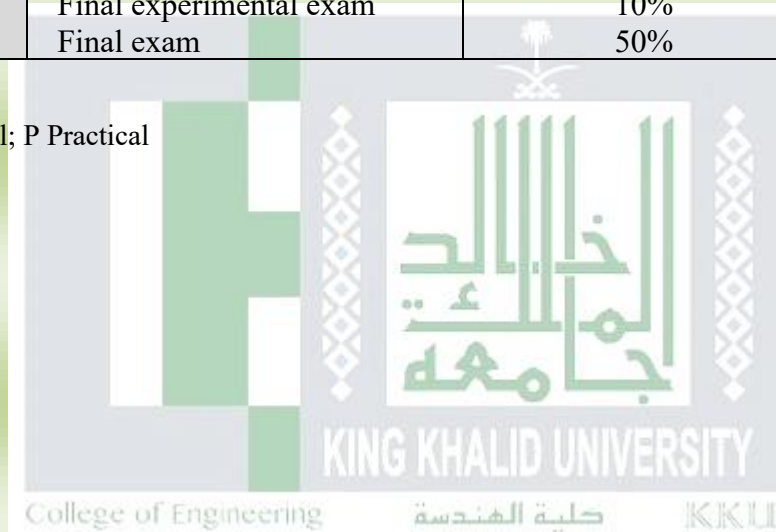
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	412-ME-3	<b>Course Name</b>	<a href="#"><u>Metal Forming Processes</u></a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	7/4		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> Kalpakjian, S &amp; Schmid, S. R., "Manufacturing Engineering and Technology", 5<sup>th</sup> Edition, 2005.</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Serope Kalpakjian &amp; Steven R. Schmid, "Manufacturing Engineering and Technology", any edition (Fourth edition to the newest one: 2001 to 2008), Prentice Hall.</li> <li>2. ASM Handbook, "Forming and Forging" Volume 14, 1988, Metals--Handbooks, manuals, etc. 1. ASM INTERNATIONAL. Handbook Committee, SAN 204-7586</li> <li>3. ASM Handbook, "Casting" Volume 15, 1988, Metals--Handbooks, manuals, etc. 1. ASM INTERNATIONAL. Handbook Committee, SAN 204-7586.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> This course deals with the principles of different manufacturing processes such as Metal Casting, Metal Welding, and Metal Forming and their applications on the design of different production-related engineering problems. Also, this course presents a number of examples and problems concern to processes that occur in production equipment's such as Sand Casting equipment, Extrusion, Forging and Drawing equipment.</p>		
<b>b. Prerequisites</b>	Production Technology and Workshops (221-ME-3) & Material Science (211-ME-3)		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. State the principles of the material forming properties such as fusibility, plasticity, and ductility and the processes depending on them.</li> <li>2. Use all forming techniques in the proper way.</li> <li>3. Develop a logical work plan for a particular forming job</li> <li>4. Analyze the expected defects in welding and casting</li> <li>5. Research on the internet to get the technical data.</li> </ol>		

<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. General Introduction about material fabrication techniques</li> <li>2. Introduction to casting technology. Different casting techniques. Molding materials and their properties. Sand casting technology. Sands used in casting. Patterns and cores fabrication.</li> <li>3. Different melting furnaces used in casting. Solidification of pure metals and alloys.</li> <li>4. Different casting defects. Quality control in sand casting. Permanent die casting Investment casting. Continuous casting.</li> <li>5. Introduction to plastic deformation processes. Extrusion process of metals.</li> <li>6. Forging of metals</li> <li>7. Rolling process of metals</li> </ol>														
<b>8. Any other information</b>	<b>Course Assessment</b>														
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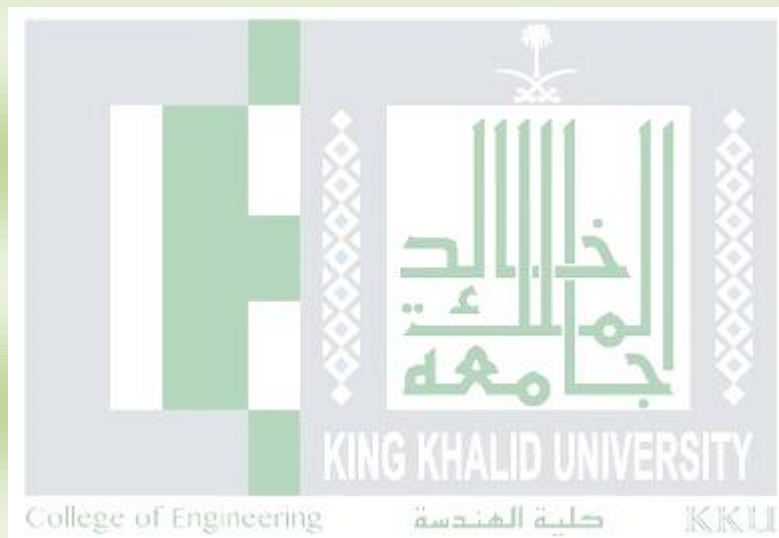
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	413-ME-3	<b>Course Name</b>	<a href="#">Heat Transfer</a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	7/4		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. Thomas, L.C “Heat Transfer”, Professional Version, 2nd ed. Capstone Pub. Corp., 1999.</li> <li>2. Incropera, F. De Witt, D. P., “Introduction to Heat Transfer”, John – Wiley and Sons, 2006.</li> </ol> <p><b>Other supplemental materials:</b></p>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b>                      Introduction to Heat Transfer. Modes of Heat Transfer &amp; Electric Circuits, Steady State Conduction, Fins &amp; Extended Surfaces, Unsteady State Conduction, Free Convection., Forced Convection, Radiation, Heat Exchangers.</p>		
<b>b. Prerequisites</b>	322-ME-3 (Fluid Mechanics)		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Outline the concepts of heat transfer.</li> <li>2. Develop the modes heat transfer &amp; electric circuits.</li> <li>3. Analyze the free convection and forced convection.</li> <li>4. Design heat Exchangers</li> </ol>		
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Introduction to Heat Transfer.</li> <li>2. Modes of Heat Transfer &amp; Electric Circuits.</li> <li>3. Steady State Conduction.</li> <li>4. Fins &amp; Extended Surfaces</li> <li>5. Unsteady State Conduction</li> <li>6. Free Convection.</li> <li>7. Forced Convection.</li> <li>8. Radiation</li> <li>9. Heat Exchangers</li> </ol>		
<b>8. Any other information</b>	<b>Course Assessment</b>		
	<b>Activity</b>	<b>Assessment% (Marks)</b>	
	Homework and Quizzes	15%	

	Midterm exam 1	10%
	Midterm exam 2	15%
	Practical exam	10%
	Final exam	50%

L Lecture; T Tutorial; P Practical



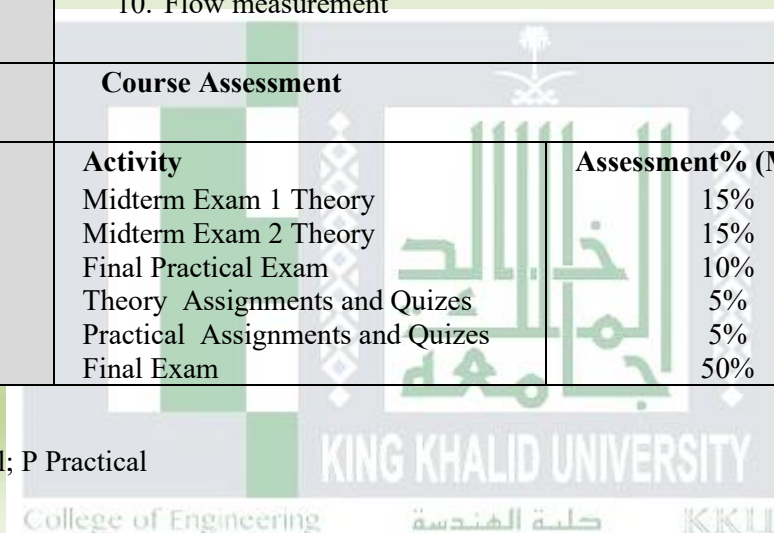
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	414-ME-2	<b>Course Name</b>	<a href="#"><u>Measuring Devices</u></a>
<b>2. Credit hours</b>	1 L + 1 rpm = 2	<b>Contact hours</b>	1L + 2T/P = 3 per week
<b>3. Level / Year</b>	7/4		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <p>Thomas G. Beckwith, Roy D. Marangoni, John H. Lienhard V            “Mechanical Measurements (6th Edition) 6th Edition, PEARSON-Prentice Hall</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. <a href="http://www.journals.elsevier.com/mechanical-systems-and-signal-processing/">http://www.journals.elsevier.com/mechanical-systems-and-signal-processing/</a></li> <li>2. <a href="http://www.journals.elsevier.com/measurement/">http://www.journals.elsevier.com/measurement/</a></li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b></p> <p>This course is required for all mechanical engineering students, and is taken in the pre-final year. It serves as an introduction to the fundamental principles of instrumentation and measurement, along with statistics, and integrates and applies what you have learned in your math, physics, engineering mechanics and mechanical and electrical engineering courses. It will introduce the function, operation, and application of common mechanical engineering instruments, measurement principles, and statistical analysis. The course is divided roughly in thirds – 1/3 statistics, 1/3 measurements, and 1/3 instrumentation. A detailed schedule of lectures, material to read, labs, and homework should be made available by the course coordinator.</p>		
<b>b. Prerequisites</b>	321-ME-3 Theory of machines		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Define basic principles and elements of measurement system and usage of measurement device usage.</li> <li>2. Justify the awareness about the principles of measurement</li> <li>3. calculate (directly or indirectly) correctly by hand or by using a computer program in</li> <li>4. measurements of temperature, fluid properties, flow measurement</li> <li>5. Analyze measurement data sets correctly using statistical concepts especially during the coverage of errors and uncertainty in measurements.</li> </ol>		

	6. Plan safe and logical lab procedures 7. appraise independent learning by assigning time bound assignments/seminars/discussions														
<b>7. Brief list of topics to be covered</b>	1. Introduction to Mechanical Measurements 2. Terminology in Mechanical measurements 3. Accuracy, Precision and Significant Digits 4. Errors in Measurement-Classification of Errors 5. Uncertainty analysis-Numerical Problems 6. Data analysis, presentation, and written report 7. Temperature Measurement 8. Pressure measurement 9. Measurement of fluid properties 10. Flow measurement														
<b>8. Any other information</b>	<b>Course Assessment</b>														
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Assessment% (Marks)</th> </tr> </thead> <tbody> <tr> <td>Midterm Exam 1 Theory</td> <td>15%</td> </tr> <tr> <td>Midterm Exam 2 Theory</td> <td>15%</td> </tr> <tr> <td>Final Practical Exam</td> <td>10%</td> </tr> <tr> <td>Theory Assignments and Quizes</td> <td>5%</td> </tr> <tr> <td>Practical Assignments and Quizes</td> <td>5%</td> </tr> <tr> <td>Final Exam</td> <td>50%</td> </tr> </tbody> </table>	Activity	Assessment% (Marks)	Midterm Exam 1 Theory	15%	Midterm Exam 2 Theory	15%	Final Practical Exam	10%	Theory Assignments and Quizes	5%	Practical Assignments and Quizes	5%	Final Exam	50%
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L Lecture; T Tutorial; P Practical



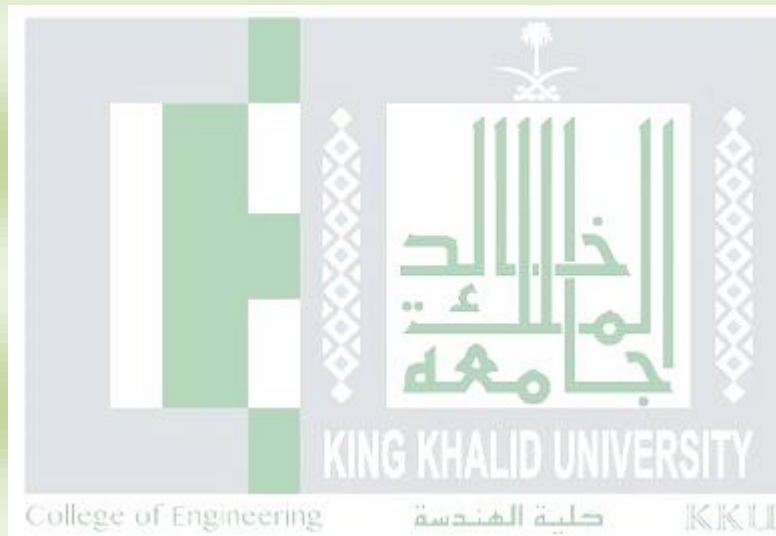
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	421- ME-3	<b>Course Name</b>	<u><a href="#">Machine Design</a></u>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	8/4		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> Sheigley Mechanical Engineering design book 3rd edition 2012.</p> <p><b>Other supplemental materials:</b></p>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> This course is devoted to study the power transmission systems and analyze the stresses on each machine element in the transmission line. The course also deals with the selection of the right power source to drive such systems and the design of shafts, keys, belts, gears and bearings and all other elements involved with the transmission line.</p>		
<b>b. Prerequisites</b>	411-ME-3 Machine Element Design		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Define the main principle of stress analysis.</li> <li>2. Identify the machine elements in the power transmission systems.</li> <li>3. List the different Types roller bearings.</li> <li>4. Evaluate the power and torque for the power transmission systems.</li> <li>5. Compare between the journal and roller bearings.</li> <li>6. Analyze the performance of the power transmission system.</li> <li>7. Demonstrate the various types of forces applied on the gear</li> <li>8. Interpret Technical reports</li> <li>9. Demonstrate simulation programs.</li> </ol>		
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Stress strain analyses</li> <li>2. Design of shafts &amp; keys</li> <li>3. Design of Belts &amp; chains</li> <li>4. Design of bearings</li> <li>5. Study the different types of gear boxes</li> <li>6. Design of single reduction gear box</li> </ol>		
<b>8. Any other information</b>	<b>Course Assessment</b>		
	<b>Activity</b>	<b>Assessment% (Marks)</b>	
	Quizzes	5%	

	Midterm-1	15%
	Assignments	5%
	Mid Term-2	15%
	Lab Reports	10%
	Final Exam	50%

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	422-ME-3	<b>Course Name</b>	<a href="#"><u>Thermodynamics-2</u></a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	8/4		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>Richard E., Sonntag, Claus.B. and Gordon J.Van,John. Fundamentals of Thermodynamics. Wiley&amp;Sons, 2002.</li> <li>Textbook of thermodynamic, New York, JOHN WILEY &amp; SONS, Inc.a.</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>Richard E. Sonntag, "Fundamentals of Thermodynamics, 2004.</li> <li>Engineering thermodynamics, 2010, Tarik Al Shemmeri&amp;Ventus publishing ApS ISBN 976 – 87 -7681- 670 -4</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b>                  This course deals with first and second laws of thermodynamics, power systems with phase change (Concepts of vapor power cycles and their applications: Rankine cycle for vapor power plants, Reheat cycle, and Regenerative cycle, refrigeration systems with phase change (Concepts of refrigeration cycles and their applications, refrigerators and heat pumps), power systems with working gaseous fluids (Concepts of gas power cycles and their applications: Otto cycle, Diesel cycle, Brayton cycle, and Jet-propulsion cycles, gas mixtures (Composition of a gas mixture. P-v-T behavior of gas mixtures. Thermodynamic properties of gas mixtures), and chemical reactions (fuels and combustion and their applications, theoretical and actual combustion processes, enthalpy of formation and enthalpy of combustion. steady-flow and closed reacting systems.</p>		
<b>b. Prerequisites</b>	Thermodynamics -1(222-ME-3)		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>Describe the power and refrigeration cycles</li> <li>Outline the gas mixtures</li> <li>apply the thermodynamic relations, generally and for simple compressible substances specifically.</li> <li>Apply the basics, physical concepts and practical applications of gas mixtures</li> <li>Use psychrometrics to solve thermodynamic problems</li> <li>design refrigeration power systems</li> <li>Compare the fuels and combustion processes in thermodynamic systems</li> <li>Demonstrate physical concepts and practical applications of gas mixtures</li> <li>Analyze the thermodynamics problems and justify the choose of this way to have the solution</li> <li>Evaluate combustion processes in thermodynamic systems</li> </ol>		

	<ol style="list-style-type: none"> <li>11. Demonstrate the need for energy conservation and its optimal use</li> <li>12. Research on the internet for course related issues.</li> <li>13. Illustrate technical report</li> </ol>												
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. First and second laws of thermodynamics.</li> <li>2. Power systems with phase change (Concepts of vapor power cycles and their applications: Rankine cycle for vapor power plants, Reheat cycle, and Regenerative cycle. Lab experiment: Steam turbine).</li> <li>3. Refrigeration systems with phase change (Concepts of refrigeration cycles and their applications: Refrigerators and heat pumps, vapor-compression refrigeration cycle. Selection of the right refrigerant. Heat pump systems. Lab experiment: Heat pump and Industrial refrigeration system).</li> <li>4. Power systems with working gaseous fluids (Concepts of gas power cycles and their applications: Otto cycle, Diesel cycle, Brayton cycle, and Jet-propulsion cycles. Lab experiment: Gas turbine and two-stage compressor).</li> <li>5. Refrigeration systems with working gaseous fluids (The air- standard refrigeration).</li> <li>6. 6. Thermodynamic relations (Maxwell relations, Gibbs equation, Clapeyron equation, Clapeyron-Clausius equation, General relations for the variation of enthalpy, internal energy and entropy and specific heat, Joule-Thomson Coefficient).</li> <li>7. Gas mixtures (Composition of a gas mixture. P-v-T behavior of gas mixtures. Thermodynamic properties of gas mixtures).</li> <li>8. Gas-vapor mixtures and air-conditioning (Dry and atmospheric air-Specific and relative humidity of air-Dew-point and wet-bulb temperatures. The psychrometric chart. Air-conditioning processes. Lab experiment: Cooling tower).</li> <li>9. 8. Chemical reactions (Fuels and combustion and their applications. Theoretical and actual combustion processes. Enthalpy of formation and enthalpy of combustion. Steady-flow and closed reacting systems. First law analysis of reacting systems. Adiabatic flame temperature)</li> </ol>												
<b>8. Any other information</b>	<b>Course Assessment</b>												
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L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	423-ME-3	<b>Course Name</b>	<a href="#"><u>Hydraulic Machines and Fluid Power Systems</u></a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	8/4		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>Krivchenko, G. "Hydraulic Machines : Turbines and pumps", CRC Press, London, Latest edition.</li> <li>Esposito, A., " Fluid Power with Application", 6<sup>th</sup> edition. Prentice Hall Inc., 2002a.</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>Dixon, S.L., " Fluid Mechanics and Thermodynamics of Turbomachinery", 5<sup>th</sup> edition. Butterworth, Heinemann, 2005.</li> <li>Pinches, M. J. &amp; Ashby, J. G., " Power Hydraulics" , Prentice Hall, Latest edition.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b>                      Introduction to Hydraulic Machines, Pelton Turbines, Francis &amp; Kaplan Turbines, Centrifugal Pumps, Cavitation in Pumps, Pumps Connection and selection, Introduction to fluid Power systems, Hydraulic Pumps (Positive displacement pumps), Hydraulic Valves, Hydraulic Cylinders and Tanks, Examples of Hydraulic circuits.</p>		
<b>b. Prerequisites</b>	322-ME-3 Fluid Mechanics		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>Describe the hydraulic machines according to the fluid energy and select the suitable type of hydraulic turbines and pumps</li> <li>Describe the hydraulic valves and their use.</li> <li>Differentiate hydraulic machines according to application.</li> <li>Apply energy equation on the hydraulic machines.</li> <li>Predict the operating point of the pump.</li> <li>Estimate the errors in hydraulic circuits.</li> <li>Calculate the required pressure and flow rate for a specific application.</li> </ol>		

<b>7. Brief list of topics to be covered</b>	1. Introduction to Hydraulic Machines 2. Pelton Turbines 3. Francis & Kaplan Turbines 4. Centrifugal Pumps 5. Cavitation in Pumps 6. Pumps Connection and selection 7. Introduction to fluid Power systems 8. Hydraulic Pumps(Positive displacement pumps) 9. Hydraulic Valves 10. Hydraulic Cylinders and Tanks 11. Examples of Hydraulic circuits	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b> Quiz 1 First mid-term exam Assignment 1 Assignment 2 Second midterm Assignment 3 Quiz 2 Lab exam & Reports and Oral Exam Final Exam	<b>Assessment% (Marks)</b> 2 % 15 % 2 % 2 % 15 % 2 % 2 % 10 % 50 %

L Lecture; T Tutorial; P Practical



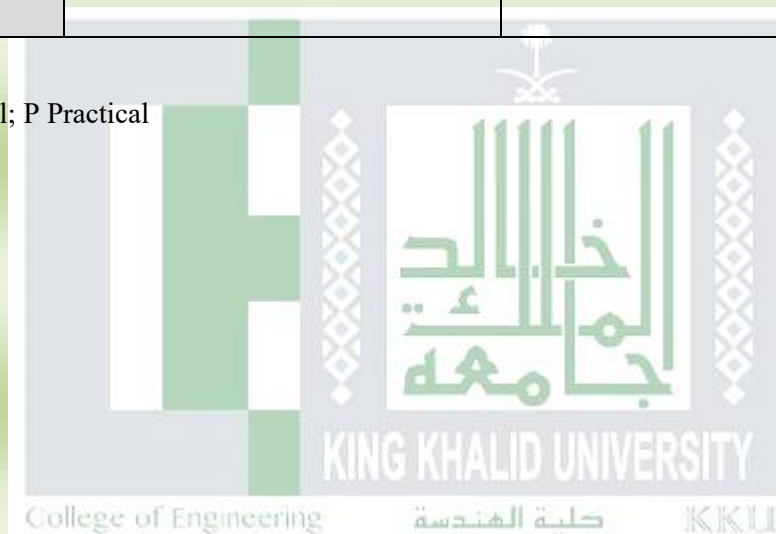
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	424-ME-3	<b>Course Name</b>	<a href="#"><u>System Dynamics and Mechanical Vibrations</u></a>
<b>3. Credit hours</b>	2 L + 1T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>4. Level / Year</b>	8/4		
<b>5. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>Ira Cochin, Harold J Plass, "Analysis and Design of dynamic System". Publisher: Harper &amp; Row, Edition: 1990.</li> <li>Singiresu S. Rao, "Mechanical Vibrations". Publisher: Pearson, 4th Edition</li> <li>Leonard Meirovitch "Fundamentals of Vibrations" August 2000</li> </ol> <p><b>a. Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>K. Ogata, "System Dynamics", Pearson Prentice Hall, 4th Edition.</li> <li>Thomson, W.T. "Theory of Vibration with Applications", Prentice hall, 5th Edition</li> </ol>		
<b>6. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b></p> <p>This course deals with mathematical modeling, response analyses and simulation of dynamic systems. These include mechanical, electrical, pneumatic and hydraulic systems. The course also deals with the mechanical vibrations of such systems and the ways of its isolation. Vibrations measuring instruments have been included in the course. Experimental work is also included.</p>		
<b>b. Prerequisites</b>	321- ME-3 + 319- Math-3		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>7. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>Outline the analysis of mechanical systems.</li> <li>Define mechanical systems' response.</li> <li>Apply the principles of vibrations of mechanical systems.</li> <li>Measure the variables related to vibrations.</li> <li>Develop various mechanical system models</li> <li>Demonstrate the ways of vibrations isolation.</li> </ol>		
<b>8. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>Welcome, Registration &amp; Introduction</li> <li>Introduction to dynamic systems, Modeling of mechanical systems</li> <li>Methods of solving differential equations &amp; Laplace transformations</li> </ol>		

	<ol style="list-style-type: none"> <li>4. State Space Representation Transfer Function development of mechanical systems</li> <li>5. Introduction to Vibrations of single degree of freedom SDOF systems + Free Un-damped/Damped Vibrations Analysis</li> <li>6. Forced Vibrations for Damped/Un-damped SDOF systems Frequency Response Transfer Function – Bode Plots</li> <li>7. Two-Degree of Freedom systems</li> <li>8. Vibrations of multi degree of freedom systems</li> <li>9. Introduction to Continuous Systems</li> <li>10. Vibration Absorption and Isolation</li> </ol>	
<b>9. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b> Assignments and Quizzes Midterm examinations Practical Examination Final Exam.	<b>Assessment% (Marks)</b> 10% 30% 10% 50%

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	511-GE-2	<b>Course Name</b>	<b>Engineering Entrepreneurship</b>
<b>2. Credit hours</b>	2 L + 0 rpm = 2	<b>Contact hours</b>	2L + 0T/P = 2 per week
<b>3. Level / Year</b>	9/5		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> The Art of the Start: The time-tested, battle-hardened guide for anyone starting anything, Kawasaki, Guy; ISBN: 1591840562, Portfolio – a member of Penguin Group; 2004</p> <p><b>Other supplemental materials:</b></p> <p>4. Technology Ventures: From Idea to Enterprise, Dorf, Richard, Byers, Thomas, and Nelson, Andrew; ISBN 978-0073380186; 3rd Edition, 2009.</p>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> Engineering Entrepreneurship introduces engineering students to the concepts and practices of technology entrepreneurial thinking and entrepreneurship. The course teaches life skills in entrepreneurial thought and action that students can utilize in starting technology companies. An entrepreneurial orientation is the common denominator among successful enterprises in the new business paradigms. The elements that are frequently key to successful enterprises include:</p> <ul style="list-style-type: none"> <li>• A team approach to management focusing on enterprise value rather than individual recognition,</li> <li>• Structuring an environment that promotes seeking and exploiting opportunities rather than recognizing and solving problems,</li> <li>• Conceptualizing and committing to new markets rather than being constrained by traditional boundaries,</li> </ul> <p>Balancing intelligent risk and the opportunity for rapid advancement.</p>		
<b>b. Prerequisites</b>	None		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<p>The goal of this course is to provide the background necessary to understand the entrepreneurial approach to business and the tools required to function effectively in the competitive entrepreneurial environment. At the end of this course, the students should be able to:</p> <p>6. Explain and analysis the entrepreneurial process from the generation of creative ideas to exploring feasibility to creation of an enterprise for implementation of the ideas.</p> <p>7. Experience the dynamics of participating on a business team and the power</p>		

	<p>inherent in a team relative to individual effort.</p> <p>8. Create and present a business plan for a technology idea.</p> <p>9. Provide the background, tools, and life skills to participate in the entrepreneurial process within a large company, in a new venture, or as an investor.</p>														
<b>7. Brief list of topics to be covered</b>	<p>The course is firmly presented in a “real-world” format, including students taking the roles of company founders and investors, creating a vision and execution plan for their company, and raising funds. The course is delivered along the following outline:</p> <p>8. Introduction to Entrepreneurship</p> <ol style="list-style-type: none"> <li>Introduction to Technology Entrepreneurship and Technology Ventures,</li> <li>Engineers as Entrepreneurs,</li> <li>Mindset of the Entrepreneurial Leader,</li> <li>Creating and Selling the Entrepreneurial Value Proposition.</li> </ol> <p>9. Idea Generation and Feasibility Analysis</p> <ol style="list-style-type: none"> <li>Entrepreneurial Idea Generation and Feasibility Analysis,</li> <li>Technology Commercialization Potential,</li> <li>Assessing and Presenting the Opportunity.</li> </ol> <p>10. Business Planning and Execution</p> <ol style="list-style-type: none"> <li>Business Structuring and Strategy,</li> <li>Business planning and the Business Plan,</li> <li>Financial Analysis and Projections;</li> <li>Market and Competitive Analysis,</li> <li>Presentation of the Opportunity,</li> <li>Intellectual Property Strategies for Technology Companies;</li> <li>Investment and Financial Strategies,</li> <li>Venture Growth and Value Harvesting.</li> </ol>														
<b>8. Any other information</b>	<b>Course Assessment</b>														
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Final exam	40%														

L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	511-ME-3	<b>Course Name</b>	<a href="#"><u>Control Systems</u></a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	9/5		
<b>4. Textbook, title, author and year</b>	<p><b>Textbook:</b> Norman S. Nise, "Control Systems Engineering", 6th Edition, 2011.</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Automatic Control Systems, Benjamin Kuo</li> <li>2. Linear Algebra and Its Applications, by Gilbert Strang</li> <li>3. Modern Control Systems, by Dorf &amp; Bishop</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> This course deals with theory and modeling of linear mechanical systems: lumped parameter models of mechanical, electrical systems, Electromechanical systems; interconnection laws ;Actuators and sensors. Linear systems theory: linear algebra, Laplace transforms, Transfer Functions, Block diagrams, Time response, poles and zeros, Time response solutions via analytical and numerical techniques ; Stability and Feedback systems control. Stability of control systems: Routh–Hurwitz criterion. Controllers, PID compensation. PID compensation; steady-state characteristics. Root-locus and Frequency domain method.</p>		
<b>b. Prerequisites</b>	System Dynamics and Mechanical Vibrations (424-ME-3)		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Recognize the basic goals of control systems in terms of transient and steady state response behavior.</li> <li>2. State the relationship between transient and steady-state time response behavior in connection with the transfer function description.</li> <li>3. Analyze the control process using mathematical rules.</li> <li>4. Differentiate between types and accuracy of the control strategy that is used in the control process.</li> <li>5. Demonstrate various control strategies</li> <li>6. Question the phenomena during the process of control.</li> <li>7. Assess the ability to deal with the hardware and control systems components.</li> <li>8. Evaluate simulation results of dynamic systems.</li> </ol>		
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Theory and modeling of linear mechanical systems: lumped parameter models of mechanical, electrical systems</li> </ol>		

	<ol style="list-style-type: none"> <li>2. Electromechanical systems; interconnection laws;</li> <li>3. Actuators and sensors. Linear systems theory: linear algebra;</li> <li>4. Laplace transforms, Transfer Functions</li> <li>5. Block diagrams</li> <li>6. Time response, poles and zeros</li> <li>7. Time response solutions via analytical and numerical techniques;</li> <li>8. Stability and Feedback systems control.</li> <li>9. Stability of control systems: Routh–Hurwitz criterion.</li> <li>10. Controllers</li> <li>11. PID compensation.</li> <li>12. PID compensation; steady-state characteristics.</li> <li>13. Root-locus and Frequency domain method.</li> <li>14. Bode plots and Nyquist stability.</li> </ol>														
<b>8. Any other information</b>	<b>Course Assessment</b>														
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Assessment (% Marks)</th> </tr> </thead> <tbody> <tr> <td>Assignments</td> <td>2.5%</td> </tr> <tr> <td>Quizzes</td> <td>7.5%</td> </tr> <tr> <td>Midterm- 1</td> <td>15%</td> </tr> <tr> <td>Midterm- 2</td> <td>15%</td> </tr> <tr> <td>Final practical exam</td> <td>10%</td> </tr> <tr> <td>Final exam</td> <td>50%</td> </tr> </tbody> </table>	Activity	Assessment (% Marks)	Assignments	2.5%	Quizzes	7.5%	Midterm- 1	15%	Midterm- 2	15%	Final practical exam	10%	Final exam	50%
Activity	Assessment (% Marks)														
Assignments	2.5%														
Quizzes	7.5%														
Midterm- 1	15%														
Midterm- 2	15%														
Final practical exam	10%														
Final exam	50%														

L Lecture; T Tutorial; P Practical



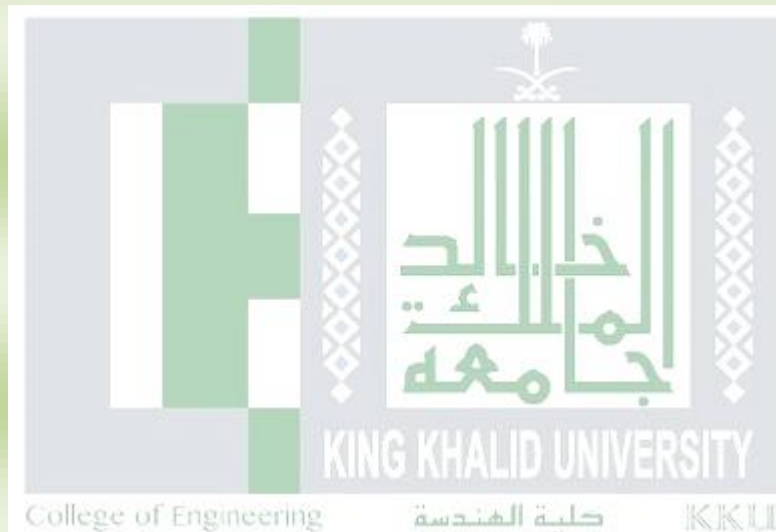
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>4. Course Number</b>	512-ME-2	<b>Course Name</b>	<a href="#"><u>Senior Design Project-1</u></a>
<b>5. Credit hours</b>	2 L	<b>Contact hours</b>	2L = 2 per week
<b>3.Level / Year</b>	9/5		
<b>4.Textbook, title, author, and year</b>	<p><b>Textbook:</b> It is indicated according to the specialization field, which will be chosen for the project</p> <p><b>Other supplemental materials:</b> It is indicated according to the specialization field, which will be chosen for the project</p>		
<b>5.Specific course information</b>	<p><b>a.Brief description of the content of the course (catalog description)</b> Selecting an application topic that relates to the student's specific discipline - Collecting of required information (theoretical and experimental) for the project - Preparing of preliminary experiments or developing the required mathematical and/or the computational models - Preparing periodical reports that includes introduction about the project, its objectives, description of the experimental, mathematical and/or computational models, and the obtained preliminary results -understanding engineering standards and realistic constraints , understanding the feasibility of executing the project - writing interim report and presenting and defending the first phase of the project work in front of an examination committee.</p>		
<b>b. Prerequisites</b>	Passing 125 hours of credit hours		
<b>c.Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6.Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. State the basic science and mathematics, rules and steps of design, planning, and implementation of the engineering projects</li> <li>2. Relate societal, health, safety, legal, management, sustainability and cultural issues involved in executing the engineering project</li> <li>3. Identifying the problem and formulating the problem to arrive at the solution of the engineering problem</li> <li>4. Distributing the project work among the team and contributing individually</li> <li>5. Judge and understand contemporary issues involved in the project</li> <li>6. Research on the internet and digital library to get more information and employ the blackboard facility to deal with each other's and with the instructors</li> </ol>		

<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Collecting of required information (theoretical and experimental) for the project</li> <li>2. Discussions within team and supervisors and expert committees</li> <li>3. Conducting pilot experiments, implementing the mathematical and/or the computational models and doing sample simulations</li> <li>4. Understanding the feasibility and procuring/outsourcing required items required for the project</li> <li>5. Presenting the first phase of the project in front of an examination committee.</li> </ol>	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b> Group Discussion, examination, speech Internal presentations Interim report First phase presentation	<b>Assessment (% Mark)</b> 10% 40% 10% 40%

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	521-ME-2	<b>Course Name</b>	<a href="#"><u>Senior Design Project-2</u></a>
<b>2. Credit hours</b>	2 L + 0 rpm = 2	<b>Contact hours</b>	2L + 0T/P = 2 per week
<b>3. Level / Year</b>	10/5		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> It is indicated according to the specialization field, which will be chosen for the project.</p> <p><b>Other supplemental materials:</b> It is indicated according to the specialization field, which will be chosen for the project.</p>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> Preparing periodical reports that includes description of the experimental, mathematical and/or computational models, and the obtained results – Conducting experiments, running and implementing the mathematical and/or the computational models – Incorporation of engineering standards and realistic constraints , Analysis and Discussions on the results and writing a complete final report as per the standard format – Presenting the final phase of the project and defending it in front of an examination committee.</p>		
<b>b. Prerequisites</b>	Senior Design Project-1 (512-ME-2)		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Required	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Understanding the basic science and mathematics, rules and steps of design, planning, and implementation of the engineering projects</li> <li>2. Explaining the mathematics, science and engineering principles in design and development of models.</li> <li>3. design and conduct experiments, as well as operate, document analyze and interpret the output.</li> <li>4. design a system, component, or process considering realistic constraints exploring various design strategies and applying engineering/scientific concepts.</li> <li>5. Identifying, formulating, and finding various solution strategies by using appropriate resources.</li> <li>6. recognizing the techniques, skills, and modern engineering tools necessary for completing the project and justifying or evaluating the errors.</li> <li>7. Self-management and work cordially among the team to execute and</li> </ol>		

	<p>complete the project.</p> <p>8. Research on internet and digital library to get more information and employ the blackboard facility to deal with each other's and with the instructors.</p> <p>9. Articulate ideas and project outcomes using graphs, tables and diagrams, present and organize the thesis as per the standard format</p>												
<b>7. Brief list of topics to be covered</b>	<p>1. Collecting of required information (theoretical and experimental) for the project</p> <p>2. Conducting experiments, running and implementing the mathematical and/or the computational models</p> <p>3. Analysis of the results and writing a complete final report as per the standard format</p> <p>4. Presenting the project and defending it in front of an examination committee.</p>												
<b>8. Any other information</b>	<b>Course Assessment</b>												
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Assessment (% Marks)</th> </tr> </thead> <tbody> <tr> <td>Group Discussion, examination, speech</td> <td>10%</td> </tr> <tr> <td>Second Phase presentation</td> <td>20%</td> </tr> <tr> <td>Poster Presentation</td> <td>10%</td> </tr> <tr> <td>Final Report</td> <td>20%</td> </tr> <tr> <td>Final presentation</td> <td>30%</td> </tr> </tbody> </table>	Activity	Assessment (% Marks)	Group Discussion, examination, speech	10%	Second Phase presentation	20%	Poster Presentation	10%	Final Report	20%	Final presentation	30%
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Group Discussion, examination, speech	10%												
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L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	531-ME-3	<b>Course Name</b>	<a href="#">Internal combustion engines</a>
<b>2. Credit hours</b>	2 L + 1T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4 per week
<b>3. Level / Year</b>	9/5		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>Heywood, J.B, "Internal Combustion Engine Fundamentals", McGraw-Hill, latest edition.</li> <li>Willard W. Pukabek, "Engineering Fundamentals of the Internal Combustion Engines", Prentice Hall, 2 ed., 2003.</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>Richard Stone, "Introduction to Internal Combustion Engines", Paperback - November 15, 1999</li> <li>Internal Combustion Engine in Theory and Practice: Vol. 2 - 2nd Edition, Thermodynamics of Combustion Engines</li> <li>Turns, S. R., An introduction to Combustion: concepts and applications, McGraw-Hill Inc., New York, USA, 1996.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b>                      The course provides the basic knowledge about internal combustion engines. This course covers and concentrates on the Gasoline and Diesel engine, principle of operation, working cycle, the constructional design and functions of the different components. It gives the practical experience and skills to diagnose, repair, adjust and maintain engine mechanical components and systems.</p>		
<b>b. Prerequisites</b>	413-ME-3		
<b>c. Co-requisites</b>	none		
<b>d. Required, Elective, or Selected elective</b>	Elective	<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>Define the basic concepts of internal combustion engines and Distinguish between different engine types,</li> <li>Recognize combustion process in I.C.E, engine knock, diesel knock and factors affecting their occurrence</li> <li>calculate the composition of exhaust gas emissions for different fuels</li> <li>Differentiate between spark ignition engine and compression ignition engine</li> <li>Estimate various engine performance parameters for SI and CI engine</li> </ol>		

	6. Show the work independently and as a part of a team 7. Operate the computer and e-mail messaging 8. research the internet search to get the data related to ICE												
<b>7. Brief list of topics to be covered</b>	1. Introduction, Engine Types 2. Engine Design and Operating Parameters 3. Thermal cycles 4. Fuel and combustion 5. Emission control devices Phenomena 6. I.C.E. fuel systems, carburetion, fuel injection 7. Ignition systems 8. Engine performance 9. Supercharging and its effect on engine performance												
<b>8. Any other information</b>	<b>Course Assessment</b>												
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Activity	Assessment% (Marks)												
Blackboard (E-Learning) activities	10%												
First Mid-Term Exams	15%												
Second Mid-Term Exams	10%												
Laboratory/tutorial Work	50%												
Term Final Exam													

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	<b>532-ME-3</b>	<b>Course Name</b>	<a href="#"><u>Energy Conversion</u></a>
<b>2. Credit hours</b>	3 L + 0 rpm = 3	<b>Contact hours</b>	3L + 0T/P = 3 per week
<b>3. Level / Year</b>	9 / 5		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. Fundamentals of Nuclear Science and Engineering, 2nd ed., J. K. Shultis and R. E. Faw, CRC Press, ISBN978-1-4200-5135-3 (2008).</li> <li>2. Principles of Energy Conversion, 2nd ed., A. W. Culp, Jr., McGraw-Hill, ISBN 0-07 014892-9 (1991).</li> <li>3. Power Plant Technology, M. M. El-Wakil, McGraw-Hill Book Company, ISBN 0-07-019288-X (1984) any recent Engineering Thermodynamics textbook</li> <li>4. Energy Systems Engineering - Evaluation and Implementation, F. M. Vanek &amp; L. D. Albright, McGraw-Hill, Inc., ISBN 978-0-07-149593-6 (2008).</li> <li>5. Solar Engineering of Thermal Processes, 3rd ed., J. A. Duffie and W. A. Beckman, John Wiley &amp; Sons (2006).</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Energy Conversion, D. Yogi Gaswami &amp; F. Kreith, ed., CRC Press, ISBN 978-1-4200-4431-7 (2008).</li> <li>2. Synthetic Fuels, R. F. Probst and R. E. Hicks, Dover Publications, Inc., ISBN 0-486-44977-7 (2006).</li> </ol>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b></p> <p>This course will introduce the student to the basic language and concepts of energy, energy conversion and energy storage. Current and emerging technologies for conversion of thermal, mechanical, chemical, nuclear, solar and electrical energy will be discussed along with an introduction to tools that may be used for comparing competing energy conversion technologies.</p>		
<b>b. Prerequisites</b>	422-ME-3		
<b>c. Co-requisites</b>	None		
<b>d. Required, Elective, or Selected elective</b>	Elective	<b>Language of instruction</b>	English

<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Memorize principles of thermodynamics, heat transfer and fluid dynamics that affect performance of a wide variety of energy conversion devices and systems.</li> <li>2. List the advantages and limitations of a variety of energy conversion systems.</li> <li>3. compare competing energy conversion technologies on an economic and efficiency basis;</li> <li>4. construct multidisciplinary computational performance models of a variety of energy conversion system</li> <li>5. Demonstrate discussions with colleagues and with teachers</li> <li>6. Choose ideas and share with others</li> <li>7. assess the validity of energy conversion claims made in popular media</li> <li>8. Interpret acceptable technical report</li> </ol>	
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Energy, Growth Rate &amp; Energy Economics energy, energy classification, unitsenergy conversion, conversion efficiencyenergy information and perspectives growth rates, peak oil</li> <li>2. Thermal-to-Mechanical Conversion early engines &amp; efficiency Thermodynamics &amp; power cycles &amp; efficiency Rankine Cycle Brayton Cycle</li> <li>3. Chemical-to-Thermal Conversion fuels: coal, petroleum, gas principles of combustion</li> <li>4. Nuclear-to-Thermal Conversion principles of nuclear energy pressurized water reactors boiling water reactors boiling water, graphite-moderated reactors · Gen-IV reactors</li> <li>5. Electromagnetic-to-Electrical Conversion principles of photovoltaic</li> <li>6. Mechanical-to-Mechanical Conversion principles of wind energy</li> <li>7. Chemical-to-Electrical Conversion principles of fuel cells</li> <li>8. Introduction to Energy Storage hydrogen flow batteries compressed gas, flywheels</li> </ol>	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b>  Quizzes-Homework -Assignments First Mid-Term Exams Second Mid-Term Exams Term Final Exam	<b>Assessment% (Marks)</b>  <b>20%</b>  <b>15%</b> <b>15%</b> <b>50%</b>

L Lecture; T Tutorial; P Practical

# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	533-ME-3	Course Name	<a href="#">Power Plants</a>
2. Credit hours	3 L + 0 rpm = 3	Contact hours	3L + 0T/P = 3 per week
3. Level / Year	9 / 5		
4. Textbook, title, author, and year	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. Dipak Sarkar "Thermal Power Plant Design and Operation", Elsevier, August 2015.</li> <li>2. El-Wakil, M. M., "Power Plant Technology", Mc Graw-Hill, New York, 2002.</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Raja, A.K., "Power Plant Engineering New age International ltd", 2006.</li> <li>2. Gill, A.B., "Power Plant Performance", ButterworthHeinemann, latest edition.</li> <li>3. Skrotiziki, B.G.A &amp; Vopat, W.A., "Power Station Engineering and Economy", Mc-Graw Hill, New York, latest edition.</li> <li>4. Howe, E.D., "Fundamental of Water Desalination", M. Dekker Publisher, latest edition.</li> </ol>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b>            This course will cover Forms of energy, oil, gas and coal. Combustion processes, energy cycles. Steam generators and their component design, turbines, load curves. Field trips to power plants and other energy installations during laboratory hours.</p>		
b. Prerequisites	413-ME-3, 423- ME-3		
c. Co-requisites	None		
d. Required, Elective, or Selected elective	Elective	Language of instruction	English
6. Course Learning Outcomes	<p>Define the main principles Steam Power plants.            Identify the Steam Condensers and Cooling Towers.            Recognize the combined steam/gas power plants.            Record the Economy of Power Plant.            Evaluate energy balance and efficiency of a Steam Generator, Turbines, and Condenser.            Discuss the various technological applications of desalination plants and selecting the appropriate desalination technology.            Compare between the different types of power plants and differentiate the most suitable to provide the energy and the least polluted the environment.            Show the Work independently and as part of a team.</p>		

	interpret Technical reports in a team work.	
<b>7. Brief list of topics to be covered</b>	1.Introduction: Types of Power Stations. 2.Steam cycle with Reheat and Regenerative Feed water heaters. 3.Steam Generators (Economizer - Evaporator - Superheater - Air preheater). 4.Turbines (Velocity diagram of single and two stages impulse and reaction turbines - Blade efficiency, power, and velocity). 5.Steam Condensers and Cooling Towers (Types – Thermal Design- Parameters affecting on Performance). 6.Gas Turbines (Thermal performance of modified cycle with reheat and inter-cooling). 7.Power Plant Economy and Energy Cost Estimation.	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b>	<b>Assessment% (Marks)</b>
		10%
	•Quizzes and Attendance	10%
	•Sheets and reports	15%
	First Mid-Term Exams	15%
	Second Mid-Term Exams	50%
	Term Final Exam	

L Lecture; T Tutorial; P Practical



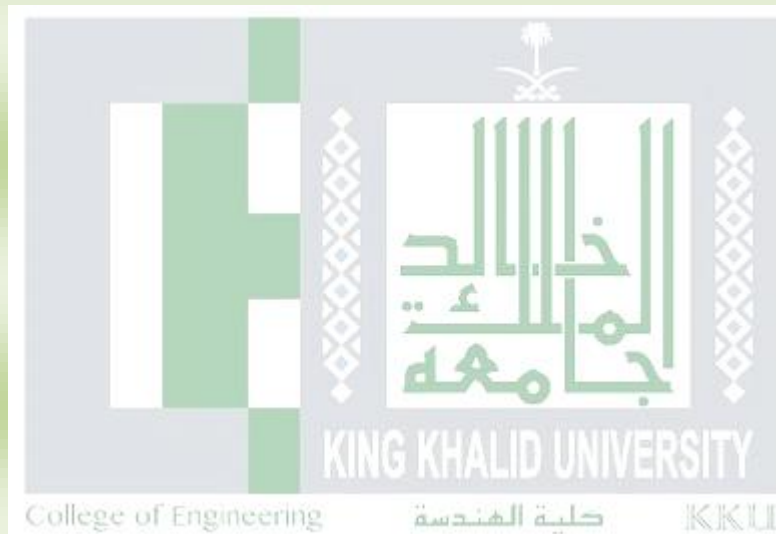
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	534-ME-3	<b>Course Name</b>	<a href="#"><u>Computer Aided Manufacturing</u></a>
<b>2. Credit hours</b>	3 L + 0T/P = 3	<b>Contact hours</b>	3L + 0T/P = 3per week
<b>3. Level / Year</b>	9 /5		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b> Mikell P. Groover, “Automation, Production Systems, and Computer Integrated Manufacturing” 2014 5th Edition</p> <p><b>Other supplemental materials:</b></p>		
<b>5. Specific course information</b>	<p><b>a. Brief description of the content of the course (catalog description)</b> The first part of the course is devoted to study the fundamentals of automated manufacturing and production systems with numerical control. The course is involved with the basic concepts of CNC programming milling and turning using G&amp;M codes. The second part of the course deals with the robotics and Robot definitions, classifications and geometries. End effector, (gripping and tooling system) and kinematics.</p>		
<b>b. Prerequisites</b>	311-ME-3		
<b>c. Co-requisites</b>			
<b>d. Required, Elective, or Selected elective</b>		<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Write part program by recognizing engineering drawing of a complex part</li> <li>2. Define various elements of the robots system.</li> <li>3. Use CNC M/C Turning-Milling.</li> <li>4. Differentiate various type of robots</li> <li>5. Reconstruct various types of robot geometry</li> <li>6. Demonstrate the CNC Turning and Milling independently and as part of a team.</li> <li>7. Illustrate part programming and write a technical report on</li> <li>8. Assess the parts using simulation programs.</li> </ol>		
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Introduction to robot</li> <li>2. Robot geometries</li> <li>3. Robot power supplies</li> <li>4. Robot end effectors</li> <li>5. Introduction to CNC</li> <li>6. CNC Milling</li> <li>7. CNC Turning</li> <li>8. CNC Drilling</li> </ol>		
<b>8. Any other</b>	<b>Course Assessment</b>		

information		
	Activity	Assessment% (Marks)
	Class activities:	5%
	• Quizzes	5%
	• Assignment and reports	5%
	• Discussion boards	5%
	• Groups	15%
	Mid Term Exam. I	15%
	Mid Term Exam. II	50%
	Final Exam.	100%
	Total	

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	535-ME-3	<b>Course Name</b>	<a href="#"><u>Mechanical Behavior of Materials</u></a>
<b>2. Credit hours</b>	2 L + 1 T/P = 3	<b>Contact hours</b>	2L + 2T/P = 4per week
<b>3. Level / Year</b>	<b>9th Level /5th Year</b>		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. George Ellwood Dieter, Mechanical Metallurgy, McGraw-Hill, 1988</li> <li>2. Marc Meyers and Krishan Chawla (Eds.), Mechanical Behavior of Materials, Cambridge University Press, 2009</li> <li>3. N. E. Dowling. Mechanical Behavior of Materials, 2nd ed. (Prentice Hall: Upper SaddleRiver, NJ) 1999</li> <li>4. T. H. Courtney. Mechanical Behavior of Materials, 2nd ed. (McGraw Hill: Boston)2000</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. D. G. Rethwisch and W. D. Callister Jr, Fundamentals of Materials Science andEngineering: An Integrated Approach, John Wiley &amp; Sons, NY, 3rd Edition, 2012.</li> <li>2. Joachim Roesler, Harald Harders, Martin Baeker, Mechanical Behaviour of Engineering Materials: Metals, Ceramics, Polymers, and Composites, Springer Science &amp; Business Media, 2007</li> <li>3. ASM Metals Handbook, Volume 11, Failure Analysis and Prevention, Metals Park, 1986.</li> <li>4. R. W. Hertzberg. Deformation and Fracture Mechanics of Engineering Materials, 4th ed.(J. Wiley &amp; Sons: New York) 1995.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a.Brief description of the content of the course (catalog description)</b></p> <p>This course involved in studying mechanical behavior of a wide variety of materials ranging from conventional metals and alloys, ceramics and polymers to hybrid materials and biomaterials at different length and time scales. Various contents include elastic deformation; viscoelasticity; yielding, plastic flow, plastic instability, strengthening mechanisms; fracture, fatigue, creep; significance of testing mechanical properties.</p>		
<b>b. Prerequisites</b>	211-ME-3		
<b>c.Co-requisites</b>			
<b>d.. Required, Elective, or Selected elective</b>		<b>Language of instruction</b>	English

<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Relate the principles of mathematics, chemistry, and physics in the mechanical behavior of materials and structural design.</li> <li>2. Calculate stress and strain in elastic and plastic deformation</li> <li>3. Explain various strengthening mechanisms and its applications</li> <li>4. Describe the effect of notches and environments on the material fracture</li> </ol>														
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Engineering Materials</li> <li>2. Structure and Deformation in Materials</li> <li>3. Mechanical Testing: Tension Test and Other Basic Tests</li> <li>4. Stress–Strain Relationships and Behavior</li> <li>5. Complex and Principal States of Stress and Strain</li> <li>6. Yielding and Fracture under Combined Stresses</li> <li>7. Fundamental of fracture mechanics, microstructure aspects of fracture toughness, the transition temperature</li> <li>8. Environment-assisted cracking, Stress corrosion cracking, hydrogen embrittlement</li> <li>9. Fatigue of Materials: Introduction and Stress-Based Approach</li> <li>10. Notch Sensitivity and Fatigue crack propagation</li> <li>11. Plastic Deformation Behavior and Models for Material, Microstructural Aspects of Plasticity</li> <li>12. Dislocation, Slips, Strengthening mechanisms</li> <li>13. Time-Dependent Behavior: Creep and Damping</li> </ol>														
<b>8. Any other information</b>	<b>Course Assessment</b>														
	<table border="1"> <thead> <tr> <th data-bbox="443 1016 986 1048">Activity</th> <th data-bbox="986 1016 1418 1048">Assessment%(Marks)</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 1055 986 1086">Quizzes</td> <td data-bbox="986 1055 1418 1086">5%</td> </tr> <tr> <td data-bbox="443 1093 986 1124">Midterm-1</td> <td data-bbox="986 1093 1418 1124">15%</td> </tr> <tr> <td data-bbox="443 1131 986 1162">Assignments</td> <td data-bbox="986 1131 1418 1162">5%</td> </tr> <tr> <td data-bbox="443 1169 986 1200">Mid Term-2</td> <td data-bbox="986 1169 1418 1200">15%</td> </tr> <tr> <td data-bbox="443 1207 986 1238">Lab Reports</td> <td data-bbox="986 1207 1418 1238">10%</td> </tr> <tr> <td data-bbox="443 1245 986 1276">Final Exam</td> <td data-bbox="986 1245 1418 1276">50%</td> </tr> </tbody> </table>	Activity	Assessment%(Marks)	Quizzes	5%	Midterm-1	15%	Assignments	5%	Mid Term-2	15%	Lab Reports	10%	Final Exam	50%
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L Lecture; T Tutorial; P Practical

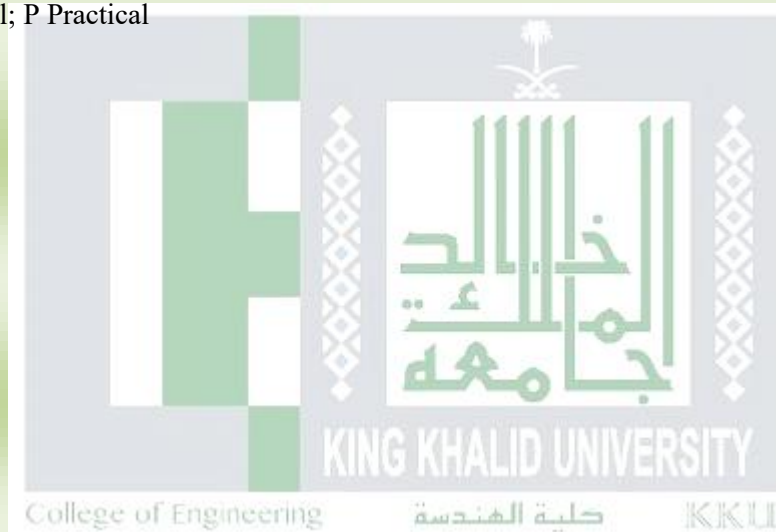
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	536-ME-3	Course Name	<u>Composite Material</u>
2. Credit hours	3 L + 0 rpm = 3	Contact hours	3L + 0T/P = 3per week
3. Level / Year	9 / 5		
4. Textbook, title, author, and year	<p><b>Textbook:</b> Composite Materials, Kar, K.K. (Ed.) (2017)</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. Composite Materials, Chung, D.D.L. (2010)</li> <li>2. Composite Materials, Nielsen, L.F. (2005)</li> </ol>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b> Classification. Applications. Processing and fabrication of composites (metal-matrix ceramic-matrix, reinforced plastics, honeycomb materials, forming structural shapes). Design Considerations. Laminate structures. Stress-strain characteristics of fiber-reinforced materials. Lamination theory. Failure theories of fiber-reinforced materials. Environmentally induced stresses in laminates.</p>		
b. Prerequisites	211-ME-3		
c. Co-requisites			
d. Required, Elective, or Selected elective		Language of instruction	English
6. Course Learning Outcomes	<ol style="list-style-type: none"> <li>1. Describe basic classifications and applications of composite materials</li> <li>2. State Design Considerations and Laminate structures</li> <li>3. Summarize Processing and fabrication of composites (metal-matrix, ceramic-matrix, reinforced plastics, honeycomb materials, forming structural shapes)</li> <li>4. Explain Stress-strain characteristics of fiber-reinforced materials</li> <li>5. Apply failure theories of fiber-reinforced materials</li> <li>6. Evaluate environmentally induced stresses in laminates.</li> <li>7. Demonstrate various applications of Composite materials individually and as a group</li> <li>8. Assess resources, time and other members in discussion on Composite Materials</li> </ol>		
7. Brief list of topics to be covered	<ol style="list-style-type: none"> <li>1. Introduction, Basic Materials</li> <li>2. Characteristics of fibers, matrices, interface bonding, adhesives</li> <li>3. Microstructure of composites.</li> <li>4. Processing/Manufacturing</li> <li>5. Traditional and novel approaches; process fundamentals</li> </ol>		

	6. Characterization Composites 7. Composite Mechanics Theory 8. Laminate theory; use of a computer based analysis package; 9. Micromechanical behavior of a ply, out-of-plane effects 10. Failure and Strength Design, Failure criteria, Laminate Strength, Stress Concentrations 11. Composite Behavior and Applications								
<b>8. Any other information</b>	<b>Course Assessment</b>								
	<table border="1"> <thead> <tr> <th>Activity</th> <th>Assessment%(Marks)</th> </tr> </thead> <tbody> <tr> <td>Mid term exam</td> <td>30%</td> </tr> <tr> <td>Practical exam (oral and writing exam) , quizzes and reports</td> <td>20%</td> </tr> <tr> <td>Final exam</td> <td>50%</td> </tr> </tbody> </table>	Activity	Assessment%(Marks)	Mid term exam	30%	Practical exam (oral and writing exam) , quizzes and reports	20%	Final exam	50%
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Mid term exam	30%								
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Final exam	50%								

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	541-ME-3	Course Name	<a href="#">Energy Efficient Buildings</a>
2. Credit hours	3 L + 0 rpm = 3	Contact hours	3L + 0T/P = 3 per week
3. Level / Year	10/5		
4. Textbook, title, author, and year	<p><b>Textbook:</b> Energy Efficient Buildings, ISBN 978 – 51- 2875 – 5, Publisher: In Tech, 2017.</p> <p><b>Other supplemental materials:</b> 1. Chen, Olivia, 2008,"Bamboo – Veiled Dormitory by Architecture BRIO", Inhabitat, Retrieved 2009. 2. Journal of Energy Comfort in Buildings.</p>		
5. Specific course information	<p><b>a.Brief description of the content of the course (catalog description)</b> This course deals day lighting, building topology comparison, energy efficient buildings and the role they play in our efforts to address climate change, the optimum cost of energy consumption and building envelope design, the energy consumption in refrigeration, air- conditioning and lighting processes, thermal loads and corrects the power factor, the economic loading and operation for generation units, energy saving policies and use high economic equipment's and improve heat transfer processes, and zero energy homes in hot arid regions, life-cycle considerations and energy efficiency analysis to managing energy demand through equipment selection.</p>		
b. Prerequisites	413-ME-3		
c.Co-requisites	None		
d. Required, Elective, or Selected elective	Elective	Language of instruction	English
6. Course Learning Outcomes	<p>Describe various Energy Saving Policies Estimate the optimum cost of energy consumption. Calculate the energy consumption. Predict thermal loads and corrects the power factor. Estimate the economic loading and operation for generation units. Use energy saving policies and use high economic equipment's and improve heat transfer processes. Participate in class discussions with colleagues and with teachers Work in team to apply energy saving policies Use of the internet search for course related issues. Verbally present technical</p>		

	report Write acceptable technical reports on Energy Efficient Buildings												
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Day lighting, building topology comparison.</li> <li>2. Energy efficient buildings and the role they play in our efforts to address climate change.</li> <li>3. The optimum cost of energy consumption and building envelope design.</li> <li>4. The energy consumption in refrigeration, air- conditioning and lighting processes.</li> <li>5. Refrigeration systems with working gaseous fluids (The air- standard refrigeration).</li> <li>6. Thermal loads and corrects the power factor.</li> <li>7. The economic loading and operation for generation units.</li> <li>8. Energy saving policies and use high economic equipment's and improve heat transfer processes</li> <li>8. Chemical reactions (Fuels and combustion and their applications. Theoretical and actual combustion processes. Enthalpy of formation and enthalpy of combustion. Steady-flow and closed reacting systems. First law analysis of reacting systems. Adiabatic flame temperature)</li> <li>9. Zero energy homes in hot arid regions, life- cycle considerations and energy efficiency analysis to managing energy demand through equipment selection.</li> </ol>												
<b>8. Any other information</b>	<b>Course Assessment</b>												
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L Lecture; T Tutorial; P Practical

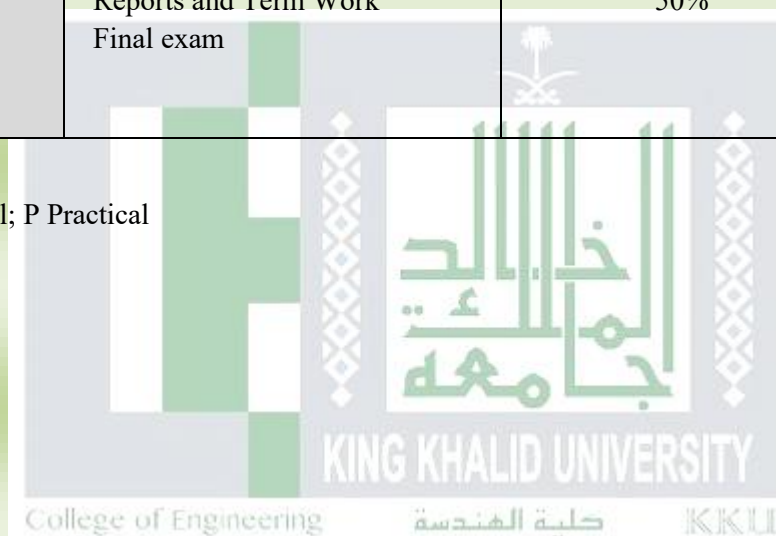
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	542-ME-3	Course Name	<u>Desalination</u>
2. Credit hours	3 L + 0 rpm = 3	Contact hours	3L + 0T/P = 3 per week
3. Level / Year	10 / 5		
4. Textbook, title, author, and year	<p><b>Textbook:</b> Hisham T. El-Dessouky and Hisham M. Ettouney, Fundamentals of Salt Water Desalination, Elsevier Science B.V., 1st, 2002</p> <p><b>Other supplemental materials:</b> 1.Reverse Osmosis; A Practical Guide for Industrial Users - by Wes Byrne 1st Edition 2.Handbook of Desalination and Water Purification – Arshad Hasan Khan and Noam Lior by Elsevier 3.Hisham T. El-Dessouky and Hisham M. Ettouney, Fundamentals of Salt Water Desalination, Elsevier Science B.V., 1st, 2002 4.Desalination Processes and Multistage Flash Distillation Practice 1986 Khan A.K</p>		
5. Specific course information	<p><b>a.Brief description of the content of the course (catalog description)</b> This course aims to define the different types of desalination process. The multistage flash systems, Multi effect and Reverse Osmosis are the most important desalination processes and will be studied in details. The analysis of desalination plants will be illustrated.</p>		
b. Prerequisites	422-ME-3		
c.Co-requisites	None		
d. Required, Elective, or Selected elective	Elective	Language of instruction	English
6. Course Learning Outcomes	<p>Outline the basics, theory and physical concepts of water treatments. Recognize the different configurations of thermal desalination Plants. Analyze the different types of desalination plants. Differentiate between the different desalination plants. Design different components of the desalination plants. Cost analysis of cubic meter of desalinated water. Participate in class discussions with colleagues and with teachers. Work in team Write acceptable technical report. Verbally present technical report.</p>		

<b>7. Brief list of topics to be covered</b>	<p>Concepts in thermodynamics; Water treatments; Fouling and scaling on tubes; fouling removal</p> <p>Thermal desalination: Multistage evaporation systems (MES); Multistage Flash systems (MSF); Vapor compression desalination Systems(VCD); Solar desalination systems; co-generation power systems.</p> <p>Reverse osmosis systems: Types of membranes; membrane arrangements; Energy recovery; back washing; membrane fouling; Ultra and nano-filtration.</p> <p>Project: Analysis of Desalination Plant</p>															
<b>8. Any other information</b>	<b>Course Assessment</b>															
	<table border="1"> <thead> <tr> <th data-bbox="435 618 874 674">Activity</th> <th data-bbox="874 618 1418 674">Assessment% (Marks)</th> </tr> </thead> <tbody> <tr> <td data-bbox="435 674 874 701"></td> <td data-bbox="874 674 1418 701" style="text-align: center;">10%</td> </tr> <tr> <td data-bbox="435 701 874 728">Assignments and quizzes</td> <td data-bbox="874 701 1418 728" style="text-align: center;">15%</td> </tr> <tr> <td data-bbox="435 728 874 754">Midterm exam 1</td> <td data-bbox="874 728 1418 754" style="text-align: center;">15%</td> </tr> <tr> <td data-bbox="435 754 874 781">Midterm exam 2</td> <td data-bbox="874 754 1418 781" style="text-align: center;">10%</td> </tr> <tr> <td data-bbox="435 781 874 808">Reports and Term Work</td> <td data-bbox="874 781 1418 808" style="text-align: center;">50%</td> </tr> <tr> <td data-bbox="435 808 874 963">Final exam</td> <td data-bbox="874 808 1418 963"></td> </tr> </tbody> </table>	Activity	Assessment% (Marks)		10%	Assignments and quizzes	15%	Midterm exam 1	15%	Midterm exam 2	10%	Reports and Term Work	50%	Final exam		
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Midterm exam 2	10%															
Reports and Term Work	50%															
Final exam																

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	543-ME-3	Course Name	<a href="#"><u>Refrigeration and Air Conditioning</u></a>
2. Credit hours	2 L + 1 T/P = 3	Contact hours	2L + 2T/P = 4 per week
3. Level / Year	10 / 5		
4. Textbook, title, author, and year	<p><b>Textbook:</b></p> <p>1. Shan K. Wang and Zalman Lavan, "Air-Conditioning and Refrigeration"</p> <p>2. ASHRAE Handbook: Refrigeration Systems and Applications, American Society of Heating, 2006</p> <p><b>Other supplemental materials:</b></p> <p>1. Shan K. Wang "Handbook of Air-Conditioning and Refrigeration", 2nd Edition. Mc-Graw --Jeffus, L, "Refrigeration and Air Conditioning : An Introduction to HVAC", Prentice Hall, 4th ed., 2003.</p>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b></p> <p>This course deals with the concepts of refrigeration and air-conditioning, principles of refrigeration and air-conditioning and refrigeration and air-conditioning systems. Also, it explains the refrigeration and air-conditioning components, methods of refrigeration and air-conditioning, absorption refrigeration system. It includes psychrometrics, psychrometric processes, psychrometric cycles, summer and winter cycles. Also, single and multi-stage vapor compression refrigeration cycles is explained and discussed briefly.</p>		
b. Prerequisites	413-ME-3		
c. Co-requisites	None		
d. Required, Elective, or Selected elective	Elective	Language of instruction	English
6. Course Learning Outcomes	<p>Outline the methods of refrigeration</p> <p>Describe the single stage and multi-stage vapor compression refrigeration cycles</p> <p>Calculate the coefficient of performance of absorption refrigeration cycle</p> <p>Estimate the coefficient of performance of vapor compression refrigeration cycles</p> <p>Calculate the cooling load of summer cycles</p> <p>Estimate the heating load of winter cycles</p>		
7. Brief list of topics to be covered	<p>Introduction to refrigeration methods.</p> <p>Single and multi-stage refrigeration cycles.</p> <p>Refrigerants and components of refrigeration cycles.</p> <p>Refrigerants and components of refrigeration cycles.</p>		

	Principles of air-conditioning / Body comfort / Inside and outside design conditions. Load estimation / Psychrometric representation for summer and winter. Air-conditioning systems	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b>	<b>Assessment% (Marks)</b>
	Assignments and quizzes	15%
	Midterm exam 1	10%
	Midterm exam 2	15%
	Practical exam	10%
	Final exam	50%

L Lecture; T Tutorial; P Practical



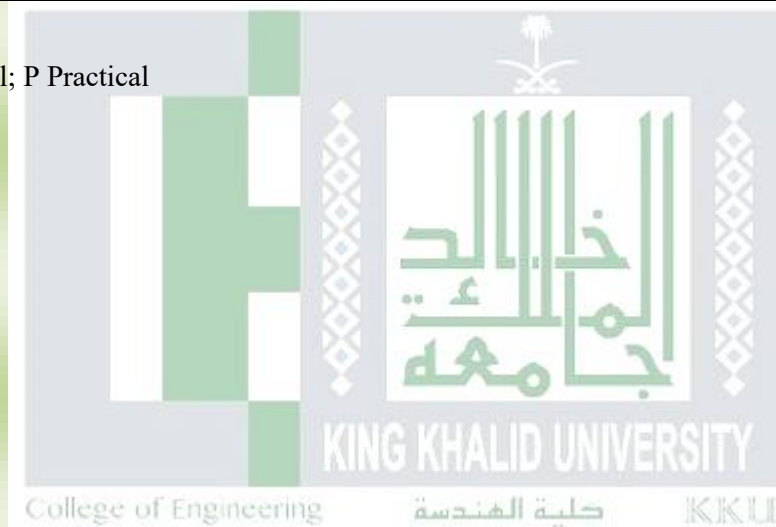
# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	544-ME -3	Course Name	<u>Fundamentals of Heat Treatment</u>
2. Credit hours	2 L + 1 T/P = 3	Contact hours	2L + 2T/P = 4per week
3. Level / Year	10 /5		
4. Textbook, title, author, and year	<p><b>Textbook:</b> T.V. Raja, C.P. Sharma, and A. Sharma, Heat treatment: principles and techniques, PHI Learning Private, New Delhi, 2011 (or later).</p> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>1. R.C. Sharma, Principles of heat treatment of steels, New age international (P) Limited, New Delhi, 2003, ISBN: 8122408699.</li> <li>2. B. Zakharov, Heat treatment of metals, USSR, 2002.</li> </ol>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b> The principles of heat treatment, natural of metals and alloys, heat treatment processes for steels, hardenability and how to measure it, factors influencing hardenability different quenching media and their influence on properties of metals and alloys, different types of chemical heat treatment, different types of surface hardening, thermo-mechanical treatment for ferrous and non-ferrous alloys, classification of heat treatment furnaces.</p>		
b. Prerequisites	211-ME-3		
c. Co-requisites			
d. Required, Elective, or Selected elective		Language of instruction	English
6. Course Learning Outcomes	<ol style="list-style-type: none"> <li>1. Recall the nature of metals and alloys</li> <li>2. Recite the principles of heat treatment of steels</li> <li>3. Explain the heat treatment processes for steels. Define the hardenability of metals and alloys</li> <li>4. Recognize the chemical heat treatment of steels</li> <li>5. Use the quenching media for each heat treatment cycle.</li> <li>6. Explain the proper heat treatment cycle for each metal and alloy.</li> <li>7. Explain the surface hardening treatment for metals and alloys</li> <li>8. Discuss the different types of heat treatment furnaces used in treating metals and alloys.</li> <li>9. Explain the thermo-mechanical treatment for ferrous and non-ferrous alloys Demonstrate independently and as part of a team</li> <li>10. Illustrate resources, time and other members of the group</li> <li>11. Interpret the experiment results</li> <li>12. Evaluate technical reports</li> </ol>		

<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Introduction to heat treatment</li> <li>2. Natural of metals and alloys</li> <li>3. Principals of heat treatment of steels</li> <li>4. Heat treatment processes for steels</li> <li>5. Hardenability and quenching</li> <li>6. Chemical heat treatment of steels</li> <li>7. Surface hardening</li> <li>8. Thermo-mechanical treatment</li> <li>9. Heat treatment furnaces and atmospheres</li> </ol>	
<b>8. Any other information</b>	<b>Course Assessment</b>	
	<b>Activity</b> Mid term exam quizzes and Assignments Final exam	<b>Assessment%(Marks)</b> 30% 20% 50%

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

1. Course Number	545-ME-3	Course Name	<a href="#">Finite Element Analysis in Mechanical Design</a>
2. Credit hours	1 L + 2 rpm = 3	Contact hours	1L + 4T/P = 5per week
3. Level / Year	10 /5		
4. Textbook, title, author, and year	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. The Finite Element Method: Linear Static and Dynamic Finite Element Analysis, Thomas JR Hughes.</li> <li>2. A First Course in Finite Element Method, Jacob Fish, Ted Belytschko.</li> <li>3. Applied Finite Element Analysis, LJ Segerlind.</li> </ol> <p><b>Other supplemental materials:</b> Daryl L. Logan - A First Course in the Finite Element Method</p>		
5. Specific course information	<p><b>a. Brief description of the content of the course (catalog description)</b></p> <ol style="list-style-type: none"> <li>1. Summarize the principles of the Finite Element Analysis to design problems and practical applications.</li> <li>2. Provide students with an understanding of the theoretical background of the Finite Element Method;</li> <li>3. Acquire the skills about the application of procedures of the Finite element Analysis.</li> <li>4. Give guidance to its practical application in engineering mechanics.</li> <li>5. Recognize the Collaborative Design and Engineering concepts such as DFM, DAM etc.</li> </ol>		
b. Prerequisites	421-ME-3&419-MATH-3		
c. Co-requisites			
d. Required, Elective, or Selected elective		Language of instruction	English
6. Course Learning Outcomes	<ol style="list-style-type: none"> <li>1. Outline the philosophy behind principles, design and modeling considerations in using finite element analysis.</li> <li>2. Describe the general steps used in the finite element analysis to model problems in engineering.</li> <li>3. Create and design engineering structures using finite element methods.</li> <li>4. Predict the safe design limits for engineering structures.</li> <li>5. Communicate effectively through a written report the creation of optimized design of engineering structures.</li> </ol>		
7. Brief list of topics to be covered	<ol style="list-style-type: none"> <li>1. Basic finite element concepts-General finite element solution procedure, Finite element equations using modified Galerkin Approach.</li> <li>2. Applications: Axial deformation of bars, Axial spring element.</li> <li>3. Analysis of trusses-Two dimensional truss element, Stresses, Strains</li> </ol>		

	<p>and temperature changes.</p> <ol style="list-style-type: none"> <li>4. Beam bending- Two node beam element, Exact solution for uniform beams subjected to distributed loads using superposition, Calculation of stresses in beams.</li> <li>5. Two dimensional boundary value problems using triangular elements, Triangular element for general 2D BVP, Numerical Examples</li> <li>6. Iso-parametric quadrilateral elements-Shape functions for rectangular elements, quadrilateral elements, Numerical integration for quadrilateral elements, Four node quadrilateral element for 2D BVP,</li> <li>7. Axisymmetric elasticity problems-Governing equations for axisymmetric elasticity, Axisymmetric linear triangular element.</li> <li>8. Numerical integration for Quadrilateral elements and Triangular elements</li> </ol>												
<b>8. Any other information</b>	<b>Course Assessment</b>												
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Final exam	50%												

L Lecture; T Tutorial; P Practical



# MECHANICAL ENGINEERING DEPARTMENT

## COURSE DESCRIPTION

<b>1. Course Number</b>	546-ME-3	<b>Course Name</b>	<a href="#">Nano technology</a>
<b>2. Credit hours</b>	3 L + 0 rpm = 3	<b>Contact hours</b>	3L + 0T/P = 3per week
<b>3. Level / Year</b>	10/5		
<b>4. Textbook, title, author, and year</b>	<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>Charles P. Poole Jr., Frank J. Owens; Introduction to Nanotechnology, Wiley-Interscience; 1 edition (May 30, 2003)</li> <li>Guozhong Cao(Author), Ying Wang (Author); Nanostructures and Nanomaterials: Synthesis, Properties, and Applications (2nd Edition) (World Scientific Series in Nanoscience and Nanotechnology)World Scientific Publishing Company; 2 edition (January 3, 2011)World Scientific Publishing Company; World Scientific Publishing Company; 2 edition (January 3, 2011)</li> </ol> <p><b>Other supplemental materials:</b></p> <ol style="list-style-type: none"> <li>Mark A. Ratner, Daniel Ratner, Nanotechnology: A Gentle Introduction to the Next Big Idea, Prentice Hall, 2002.</li> <li>Gunter Schmid, Nanotechnology: Principles and Fundamentals ,Wiley, 2008.</li> <li>Gabor L. Hornyak, H.F. Tibbals, Joydeep Dutta, and John J. Moore, Introduction to Nanoscience and Nanotechnology, CRC Press, 2009.</li> </ol>		
<b>5. Specific course information</b>	<p><b>a.Brief description of the content of the course (catalog description)</b> Introduction to Nanotechnology aims to provide a broad overview of fundamental principles and current research directions in nanoscience and nanotechnology. The contents include: fundamental physical scaling laws applied to understanding the properties of materials at the nanometer scale, nano-manufacture, characterization and properties of nanomaterials and its application.</p>		
<b>b. Prerequisites</b>	211-ME-3		
<b>c.Co-requisites</b>			
<b>d. Required, Elective, or Selected elective</b>		<b>Language of instruction</b>	English
<b>6. Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>Describe the principles of nanotechnology</li> <li>Calculate surface energy, chemical potential and analyzing electrostatic stabilization</li> <li>Explain various production techniques for nano structures and their applications</li> <li>Identify various Nano materials and differentiate them based on their properties</li> </ol>		

	<ol style="list-style-type: none"> <li>5. Demonstrate the application of SEM, AFM in characterization of Nano structures</li> <li>6. Research on internet and digital library to get more information in nanotechnology and employ the blackboard facility to deal with each other's and with the instructors</li> </ol>														
<b>7. Brief list of topics to be covered</b>	<ol style="list-style-type: none"> <li>1. Emergence and challenges of Nano Technology</li> <li>2. Physical Chemistry of solid surfaces</li> <li>3. Development and application of Nano particles, nano wires, nano rods and thin films</li> <li>4. Special Nano materials: carbon fullerenes and nanotubes, micro and mesoporous materials</li> <li>5. Nano structures fabricated by Physical Techniques</li> <li>6. Structural and Chemical Characterization and properties of nano materials (Use of XRD, SEM, TEM, AFM)</li> <li>7. Application of Nano materials</li> </ol>														
<b>8. Any other information</b>	<b>Course Assessment</b>														
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L Lecture; T Tutorial; P Practical

