Prince Mohammad Bin Fahd University
(Under Registration)

PMU ACADEMIC CATALOG

PREFACE

This ***PMU Academic Catalog*** **Final Report** is submitted in partial fulfillment of Item IV.E. of the Contract between the Texas International Education Consortium (TIEC) and the Prince Mohammad Bin Fahd University (PMU) Founding Committee to facilitate the establishment of the PMU. This report was prepared by the TIEC Project Management Group and a team of experts from several TIEC-affiliated universities who are experienced in the documentation of academic programs and features of a university.

The ***PMU Academic Catalog*** is both an operational document and a management document. As an operational document, the university catalog is a primary source of information for prospective students and the general public about the PMU, its admissions standards, graduation requirements, academic programs of study, tuition and fees, and rules and regulations relating to academic programs. As a management document, it serves as a guide to PMU faculty and staff responsible for advising students and implementing the academic policies and procedures of the PMU. This document organizes material from several reports prepared by TIEC for the PMU including the *PMU Admissions Plan* and six curriculum design reports that contain the details of the academic programs of study. Additional material on academic regulations is also included.

An academic catalog contains information that is changing continuously. This document is the initial edition of the PMU Academic Catalog and requires continuous review and refinement. The information in this catalog will also be included in the PMU website that should be updated regularly to complement the printed editions of the catalog.

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Dr. Issa Al Ansari
University President
Prince Mohammad Bin Fahd University

Prince Mohammad Bin Fahd University
(Under Registration)
Dammam, Saudi Arabia

TASK NAME FINAL REPORT

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WELCOME FROM THE RECTOR

I have the pleasure to introduce the Academic Programs and Curricula Catalog of Prince Mohammad Bin Fahd University. This catalog is issued concurrently with the opening of the PMU, a new institution that will ultimately lead toward achieving a brighter future for students in the Kingdom of Saudi Arabia. According to the vision of the university's founders, PMU should play a major role in achieving the comprehensive development of society and ensuring its graduates' ability to face contemporary and future events. Graduates will be the pride of the Kingdom, having full confidence in their personal skills and capabilities while taking an active part in the development and progress of society. The opening of the PMU allows the realization of this vision.

The university strives to provide a rich and purposeful educational environment as a prerequisite for the student's success and ability to excel. This environment will enable the student, in an effective way, to enhance the welfare of himself and his nation.

The PMU has adopted a philosophy that focuses on the student. This includes: the academic programs, curricula and extra curricular activities. In return, PMU students are expected to do their utmost in order to achieve the expected goals and to maintain productive and effective relationships with their classmates and mentors.

This catalog is designed to help students, their parents, and those interested in university education develop better understanding not only of how the PMU operates but how it provides an effective and efficient use of its resources, facilities, and services. The catalog reflects the university's commitment to achieving distinction and excellence in all aspects of its activities and functions, including providing programs, curricula, and courses of the highest quality in a highly satisfying work environment.

Name

Rector
Prince Mohammad Bin Fahd University

ACADEMIC CALENDAR 2006-2007

Prince Mohammad Bin Fahd University
(Under Registration)
Damman, Saudi Arabia

Academic Calendar 1440/1441H (2019-2020): First Semester: 010

FALL SEMESTER 2019 - 2020			
Hijri Date	**Day**	**Gregorian Date**	**Events**
20 - 28 Thul-Hijjah 1440	Mon - Thu	August 21 - 29, 2019	Registration Period
28 Thul-Hijjah 1440	Thu	August 29, 2019	Orientation for the new students
2 Muharram 1441	Sun	September 1, 2019	Classes begin
2 - 6 Muharram 1441	Sun - Thu	September 01 - 05, 2019	Late registration and Add/ Drop
2 - 13 Muharram 1441	Sun - Thu	September 01 - 12, 2019	Drop Only without charge
24 Muharram 1441	Mon	September 23, 2019	National Day Holiday
10 Rabi' al-Awwal 1441	Thu	November 7, 2019	Last day for withdrawing courses with grade of "W"
18 Rabi' al-Thani 1441	Sun	December 15, 2019	Last day for withdrawing courses with grade of "WP/WF", Last day of classes "Normal Monday classes"
18 Rabi' al-Thani 1441	Sun	December 15, 2019	Last Day for Changing Major
21 Rabi' al-Thani 1441 - 4 Jumada al-Ula 1441	Wed - Mon	December 18 - 30, 2019	Final Exams
5 Jumada al-Ula 1441	Tue	December 31, 2019	Deadline for submitting grades to the Registrar's office
6 - 21 Jumada al-Ula 1441	Wed - Thu	January 01, 2020-January 16 , 2020	Mid-year break for students
12 Jumada al-Ula 1441	Tue	January 7, 2020	Last working day for faculty members & Grade Appeal processing
8 Jumada al-Alkhirah 1441	Sun	February 2, 2020	Last day for Grade appeal application
Number of Weeks - Fall 2019-2020 = 15 Weeks			

Academic Calendar 1440/1441H (2019-2020): First Semester: 020

SPRING SEMESTER 2019 - 2020			
Hijri Date	**Day**	**Gregorian Date**	**Events**
17 - 21 Jumada al-Ula 1441	Sun-Thu	January 12 - 16, 2020	Registration Period
21 Jumada al-Ula 1441	Thu	January 16, 2020	Orientation for the new students
24 Jumada al-Ula 1441	Sun	January 19, 2020	Classes begin
24 - 28 Jumada al-Ula 1441	Sun - Thu	January 19 - 23 , 2020	Late registration and Add/ Drop

24 Jumada al-Ula 1441 - 5 Jumada al-Alkhirah 1441	Sun - Thu	January 19 - 30 , 2020	Drop Only without charge
2 Sha'ban 1441	Thu	March 26, 2020	Last day for withdrawing courses with grade of "W"
19 - 23 Sha'ban 1441	Sun-Thu	April 12 - 16, 2020	Registration for Summer Semester 2019/2020 through Banner self service
7 Ramadhan 1441	Tue	April 30, 2020	Last day for withdrawing courses with grade of "WP/WF", Last day of classes
7 Ramadhan 1441	Tue	April 30, 2020	Last Day for Changing Major
10 - 20 Ramadhan 1441	Sun-Wed	May 3 - 13, 2020	Final exams (Saturday May 9, 2020 is normal examination day)
21 Ramadhan 1441	Thu	May 14, 2020	Deadline for submitting grades to the Registrar's office
8 Shawwal 1441	Sun	May 31, 2020	Start of faculty vacation & Last working day for Grade Appeal processing
22 Shawwal 1441	Sun	June 14, 2020	Last day for Grade appeal application
11 Muharram 1442	Sun	August 30, 2020	Fall Semester 2020/ 2021 begins
Number of Weeks - Spring 2019-2020 = 15 Weeks			

GENERAL INFORMATION ABOUT PMU

Prince Mohammad Bin Fahd University (PMU) is a private institution of higher learning licensed by the Ministry of Higher Education and located in the Al-Khobar region of the Eastern Province of Saudi Arabia. The initiative to establish the university has been taken by a group of renowned individuals from the Eastern Province under the auspices of HRH Prince Mohammad Bin Fahd Bin Abdulaziz.

The PMU is a learning-centered community where the emphasis is on the students, technology infuses the educational experience, and students graduate with unique competencies that empower them as individuals and enable them to contribute to the Kingdom's business and industrial community. These qualities make PMU a unique institution in Saudi Arabia, yet PMU is unquestionably a Saudi university. It fully embodies the cultural and religious values of the Saudi people.

The university operates under the regulations of the Ministry of Education that pertain to privately operated post-secondary educational institutions in the KSA. It is governed by a Board of Trustees and a University Council according to the regulations of the Ministry regarding the governance of private post-secondary institutions.

Vision and Mission

The continuing rapid development of Saudi Arabia and the growth of various new sectors of the Kingdom' s economy calls for the substantial number of graduates capable of leadership in diverse fields of business, engineering, information technology, culture, education, community development and public administration. New universities will be among the potential contributors to ensuring that the Kingdom has the necessary manpower with the appropriate competencies (skills, knowledge, and attitude), technical knowledge, and foresight to rise to the challenges ahead.

The vision of the founders for the university is to be a unique and distinguished higher education institution that participates in:

- Preparing future leaders in various fields of human knowledge and its application.
- Enriching and developing intelligence.
- Exploring innovative methodologies and technologies to achieve its objectives.
- Breaking the barrier between academic and business society.

The university mission is to achieve the following objectives:

- Contribute to advancement of human intelligence and promulgation and development of knowledge.
- Prepare specialized candidates in various fields of human knowledge through utilizing modem technologies in the education process.
- Transform the graduate to play a pioneering and leading role in the community, enabling him or her to take responsibilities and contribute to solving problems through innovative thinking, collective work, reflection and self-development.
- Link academic programs and specializations with actual requirements of the surrounding work environment. This will be undertaken by maintaining effective participation and cooperation between the University and local business firms.
- Guide research activities to create solutions for persistent problems in surrounding communities, through applied research and technical consultation.
- Provide community service through continuous training and education.

Academic Focus

The PMU prepares high quality graduates for employment in high demand fields in the Eastern Province and to educating the "whole" person, recognizing that success in the world depends not only on knowledge of a specific academic discipline, but also on a broader set of skills and abilities.

Graduate Competency Profile: PMU graduates will be known by their distinctive competencies. The university has designated six core areas intended to ensure that PMU students also will possess knowledge and abilities to be successful in their chosen fields and to contribute to the development of their community and the Kingdom. The six PMU core competencies are:

- *Communication:* the ability to communicate effectively in both English and Arabic in professional and social situations.
- *Technological Competence:* the ability to use modern technologies to acquire information, communicate, solve problems, and produce intended results.
- *Critical Thinking and Problem Solving:* the ability to reason logically and creatively to make informed and responsible decisions and achieve intended goals.
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- *Professional Competence:* the ability to perform professional responsibilities effectively in both local and international contexts.
- *Teamwork:* the ability to work effectively with others to accomplish tasks and achieve group goals.
- *Leadership:* the ability to be informed, effective, and responsible leaders in family, community, and the Kingdom.

Information Technology Emphasis: A distinctive characteristic of the PMU is its emphasis on the utilization of information technology resources throughout the institution, in all academic programs and courses, and in the management of the university. The PMU is known for its pervasive use of state-of-the-art information technologies that enable the university's distinctive, earning-centered environment. The infusion of technology into the university environment enables students to obtain the information they need, when and where they need it, so they can effectively pursue their goals of academic excellence and professional competencies.

Academic Program Structure: The structure of PMU academic programs follows the North American model that utilizes the credit hour system as a measure of time devoted to each course. An intensive bridge program prepares entering high school graduates for university study. An academic core curriculum forms a common basis for all degree programs. Individual degree majors provide the academic specialization and the name of the degree awarded.

Language of Instruction: English is the language of instruction in all degree programs and courses except those devoted to Arabic Language and Islamic Studies.

Preparation Year Program: In order to meet the high admissions standards for the degree programs, the PMU offers a one to two years of English preparation (Preparatory Courses) , non-credit year of study for students who need preparation in the English language, mathematics, and study skills and learning strategies.

Academic Core Curriculum: All degree programs include a core of academic subjects. These subjects are distributed among five principal areas: PMU competencies, written and oral communication, mathematics, natural and physical sciences, and social and behavioral sciences. In addition, all students complete the PMU Assessment Capstone Series of courses, in which they demonstrate their abilities to assimilate and apply the knowledge and skills they have learned. The content of the capstone series varies according to major.

Undergraduate Degree Programs: The academic degree programs offered by the PMU are organized into three colleges as follows:

College of Engineering

B.S. in Electrical Engineering	Male and Female
B.S. in Mechanical Engineering	Male and Female
B.S. in Civil Engineering	Male and Female

College of Computer Engineering and Science

B.S. in Information Technology	Male and Female
B.S. in Computer Science	Male and Female
B.S. in Computer Engineering	Male and Female
B.S. in Software Engineering	Male and Female

College of Business Administration

B.S. in Accounting	Male and Female
B.S. in Business Administration	Male and Female
B.S. in Finance	Male and Female
B.S. in Management Information Systems	Male and Female
B.S. in Human Resource Management	Male and Female

College of Architecture and Design

B.S. in Architecture	Male and Female
B.S. in Graphic Design	Male and Female
B.S. in Interior Design	Female

College of Law

B.A. in Law	Male and Female

Graduate Degree Program:

Master of Science in Mechanical Engineering (MSME)
Male and Female
Executive Master in Business Administration (EMBA)
Male and Female
Master of Science in Business Administration (MBA)
Male and Female
Master of Science in Human Development (MSHD)
Male and Female

Learning Modes: Consistent with the commitment to developing student learning outcomes and competencies, the PMU emphasizes student oriented teaching and learning methodologies throughout all academic programs. Courses utilize independent learning tasks, group and team based projects, and capstone projects, among other techniques. Information technology based resources and methods are an important part of the learning process.

Learning Resources Center: The PMU Learning Resources Center encompasses more than a traditional library. Consistent with the emphasis on information technology, the PMU LRC offers extensive access to electronic-based resources. In support of student independent learning strategies, the facility provides spaces for students to collaborate in teams on group projects, or to meet with faculty and staff for tutorials and/or small group activities.

Instruction and Research Emphasis: The initial focus of the PMU is placed on the development of high quality instructional programs. Research is also important to maintaining a creative environment for faculty, staff, and students. Consequently, the academic programs and staff recruiting plans emphasize maintaining excellence as a teaching institution along with a strong program of research and service activities.

Center for Research Development and Continuing Education: The PMU staffs a center for supporting external research and services activities, and for the delivery of instructional services to clients and learners off-campus by the means most appropriate to the client. These include distance learning programs or traditional courses offered at locations outside the PMU campus.

Location

The PMU is located on Half Moon Bay Road in a developing area near the coast at Al-Khobar. The university's location in the Eastern Province is particularly appropriate to serving the business, industrial and community needs of the KSA. The Dammam-Dhahran-Al-Khobar triangle has undergone a dramatic transformation in recent years, developing into a booming industrial region with commercial centers in Al-Khobar and Dammam. The PMU location is just 100 Km away from the Jubail Industrial City, one of the new industrial cities recently built in the Kingdom.

Facilities

The university campus has been designed with care to provide facilities for a full range of academic and student services in a manner that recognizes and maintains the cultural and religious values of the Kingdom. In translating the PMU vision and mission into physical reality, the university's architects have successfully created a university with a distinct and outstanding architectural image. The university design includes buildings that are shaped and located to create pleasant and inviting spaces. Plazas and covered walkways facilitate students' movement throughout the university. The entire concept is built on the desire to facilitate, encourage, and celebrate the university's interactive learning environment.

The campus is symmetrically divided to provide facilities for male and female students.

The male campus houses academic facilities for male instruction in the College of Engineering, the College of Business Administration, the College of Computer Engineering and Science, Architecture and Design, and the College of Law. It also houses facilities for male instruction in the Preparation Year Program and PMU Core Curriculum.

The university administration building is located on the male portion of the campus.

The female campus houses academic facilities for female instruction in the College of Engineering, the College of Business Administration, the College of Computer Engineering and Science, Architecture and Design, and the College of Law. It also houses facilities for female instruction in the Preparation Year Program and PMU Core Curriculum.

At the campus center, male and female students have access through separate entrances to food service at the university cafeteria. They also have access through separate entrances to the information available at the PMU Learning Resources Center (LRC). Inside the LRC building, each gender has its own lobby, stacks, circulation/reference desk, and study areas

The LRC provides an attractive central space that is conducive to reading, reflection, study, and group and individual learning activities. When the university is at full operation, the LRC will accommodate a book collection of approximately 75,000 volumes.

The LRC also provides learning enrichment services in mathematics, reading, writing, and study skills

to ensure students' success of the PMU's learning-centered approach to education.

The main academic campus also contains athletic facilities. At a future date, student housing will be constructed on a nearby parcel of land.

ADMISSION REQUIREMENTS AND PROCEDURES

Required High School Preparation

Students enrolling in the PMU must be graduates of the Kingdom of Saudi Arabia secondary school Science Stream with an earned General Secondary Education Certificate, or they must have received equivalent secondary school preparation in another educational system. Because the degrees offered by the PMU will be technical in nature, graduates of the Science Stream are considered most likely to have the analytical skills necessary to succeed at the university. Students are expected to have firm academic foundations, especially in English and mathematics.

Admission to the Preparation Two Year Program

Though it will be possible to enter the PMU directly from high school, most students entering the PMU will first spend up to two years studying in the university's Preparation Year Program. Placement of students at the proper level of the Preparation Program's courses of English instruction will be made according to the results of examinations which will be administered before the student's admission to the program.

Deadline for Applications

The deadline for application to the Preparation program will be one weeks prior to the Fall Semester for which the student desires admission. All materials supporting the application must be submitted three weeks before classes start.

Admission of Saudi Nationals

Admission into the Preparation Program requires three steps:

- *Application form and fee*: A completed application form accompanied by the prescribed application fee.
- *Secondary School grades*: Results of the General Secondary Education Certificate (Tawjihiyah).
- *General Aptitude and Abilities Test scores*: Results of the General Aptitude (QUDURAT) and Abilities (TAHSEELY) Test given by the Ministry of Education.

Admission of Non-Saudi Nationals

The application process for non-Saudi students will follow the same three steps as for Saudi nationals:

- *Application form and fee*: A completed application form accompanied by the prescribed application fee.
- *Secondary School grades*: Graduation from a secondary school program that is equivalent to a Saudi secondary school education, with results of the General Secondary Education Certificate (Tawjihiyah) when possible.
- *General* Aptitude (QUDURAT) and Abilities (TAHSEELY) *Test or SAT scores*: Results of standardized tests.

The final decision on whether or not a student's achievement levels from non-Saudi educational

experiences are equivalent to KSA academic qualifications rests with the Admissions Committee. Foreign credentials and grading schemes or systems employed by schools that educate expatriates living in the Kingdom will be converted by the committee to their KSA equivalent.

Non-Saudi students should be graduates of a secondary school Science Stream. However, if the applicant's school does not differentiate between streams, the applicant must have successfully completed a university-bound program heavily emphasizing science and mathematics.

Non-Saudi applicants may submit results of either the General Aptitude (QUDURAT) and Abilities (TAHSEELY) Test or the SAT exam. The Admissions Committee will determine the comparable score ranges between these two examinations during the admissions process.

Admission to Degree Studies

Students may be admitted into degree studies at the PMU via a number of means – successful completion of the Preparation Program, direct entry from secondary school, or transfer from other post-secondary programs.

Deadline for Applications

The deadline for application to the PMU's degree programs will be two weeks prior to the Fall Semester for which the student desires admission. All materials supporting the application must be submitted three weeks before classes start.

Admission from the PMU Preparation Program

All students who successfully complete the Preparation Program with satisfactory grades (C or better) will be guaranteed a place in the university. However, spaces available in individual degree programs will be limited, and the number of students seeking admission to these programs may exceed the program's capacity. To assist each program in selecting applicants whose aptitude, skills, and preparation are best suited to its curriculum, the following steps will be required:

- *Preparation Program Certificate of Completion:* Successful completion of the PMU Preparation Program (English writing and communication, mathematics, and study skills).

  The Department of Interior Design may substitute a design portfolio for the essay requirement.

Direct Admission from High School

Some students, particularly those from other countries or from international schools in the Kingdom where the medium of instruction is English, may seek to bypass the Preparation Program and be placed directly into degree studies. The student's eligibility for admission directly into degree studies will be based on submission of IELTS Scores (6.0 – Overall / 5.5 Writing) Or TOEFL (83 Overall / 19-Writing) performance on standardized placement examinations given after admission to the Preparation Program.

The student initially follows the same procedures as applicants for the Preparation Program:

- *Application form and fee:* A completed application form accompanied by the prescribed application fee.
- *Secondary school grades:* results of the General Secondary Education Certificate (Tawjihiyah).
- *General Aptitude* (QUDURAT) *and Abilities* (TAHSEELY) *Test scores:* Results of standardized examinations or SAT 1 & 2

- *IELTS exam:* Applicants seeking direct entry must have achieved a satisfactory IELTS score.
- *College requirements:* For admission to one of the PMU colleges, students must complete the steps required of graduates of the Preparation Program.

Admission from Other Colleges and Universities

Students already attending post-secondary institutions who feel qualified to begin their degree program at PMU immediately may apply by submitting the following materials:

- Transfer application for admission: A completed transfer application form accompanied by the prescribed application fee.
- Secondary school grades: Results of the General Secondary Education Certificate (Tawjihiyah).
- Official transcript from post-secondary institutions attended: A minimum cumulative grade point average of 2.0 (C) on a 4.0 grade scale.
- IELTS exam: A satisfactory score on IELTS or an equivalent standardized test with the required scores .

Academic Standing of Transfer Students

The university will allow no more than 70% of a student's credits toward a PMU degree to be brought as transfer credits from other institutions. Subject to compliance with Undergraduate Study and Examinations Regulations laid out by the Ministry of Higher Education, at least 30% of the degree course requirements must be completed in residence at the PMU.

All transfer students will be required to complete the PMU University Core courses, regardless of the level at which he or she enters the university.

These courses are: Professional Development and Competencies,
Critical Thinking and Problem Solving, Leadership and Teamwork, writing, oral communication, and Islamic and Arabic Studies. Transfer students also must complete the university's Assessment Capstone courses.

Transfer Credits for Transfer Students

The acceptability of transferred courses to the PMU will be determined by the Admissions Committee in consultation with individual academic departments based on the recognition, accreditation, and nature of the previous institution and on the individual courses.

Courses passed with a grade of D+ or its equivalent from another institution will not transfer to the PMU.

Residence Requirements for Transfer Students

Residence requirements for degree completion at the PMU (defined as those courses which must be completed at the university) will be set by the academic departments. These requirements must be fulfilled regardless of the number of hours transferred from other institutions.

Acceptance and Denial

The final decision on admission will be communicated to the applicant through the online banner notification system

Unsuccessful applicants wishing to be considered for future terms must submit a new application for the intended future term. Other documentation (secondary school certificate and standardized test

scores) already submitted may still be used if they have been retained by the PMU.

Placement in a College

Admission to degree programs at the PMU will be determined by a number of factors, including the student's grade point average in Preparation Program courses. These measures will be combined to determine ultimate placement in the degree programs.

The Admissions Committee, along with faculty representing appropriate Core Curriculum subject areas, will meet soon after the conclusion of Preparation Program to admit students into the College of Engineering, the College of Computer Engineering and Science, the college of Law, the College of Architecture and Design or the College of Business Administration. Where demand exceeds the number of places available in specific majors, unsuccessful applicants may elect another degree program in order to continue at the PMU.

REGISTRATION PROCEDURES

Registration procedures are outlined in the schedules published by the Office of the Registrar and available from the Registrar during pre-registration and registration.

This schedule provides pertinent information and indicates the registration steps along with the place, date and time for each step. It also lists initial course offerings. A continually updated list of these offerings is also posted on the PMU Web site. Students should carefully read the registration guide as they prepare for registration.

Registration for a New Academic Year

Registration involves three principal steps:

1. Advisement and consultation
2. Selection and registration of courses
3. Payment of fees

In coordination with their advisor, students complete the registration card obtained from the Office of the Registrar. Students also may register online, though they still will be required to consult their advisor. Instructions for online registration are available from the Office of the Registrar.

The class schedule and the university catalog contain necessary information regarding registration instructions and general items of information, policies, and procedures.

New students must make sure that all documents required for finalizing their admission, particularly those indicated in the letter of admission, are submitted to the Office of Admissions before registration begins.

New Student Orientation

Prior to registration, an academic orientation is scheduled for all new students to acquaint them with the general academic university regulations, policies and services. Each college in the university also conducts an orientation to acquaint students with its specific regulations and the registration process at the PMU. During orientation, the Office of Student Affairs provides an introduction to university life through campus tours and visits, meetings, lectures, demonstrations and other activities. Attendance at these programs is mandatory for all new students.

Transfer Student Registration

Transfer students cannot register for subsequent courses if their transferred courses do not meet the prerequisite requirements. Transfer students must complete their transfer file and be awarded transfer credits during their first semester at PMU.

Changes in Student Status

Changes of College or Major

Students seeking to change their major within their college/school or to change their college/school must complete the appropriate form available from the Office of the Registrar. Requests for a change of major or change of college/school should be submitted to the Office of the Registrar at least two weeks before the registration time of the affected semester. To be eligible for a change of major, a student must meet the requirements for admission to the new major, and the request must be approved by the dean of the new major.

Adding and Dropping Courses

Students are allowed to add and/or drop courses during the first two weeks of fall and spring classes. Courses dropped during this period are not recorded in the student's transcripts.

Students interested in dropping or adding courses should first consult with their respective advisors.

Withdrawal from Courses

Students are permitted to withdraw from courses after submitting the appropriate withdrawal form. Students are expected to maintain a minimum course load of 12 credits, but under special circumstances the dean of the college/school may allow students to drop below 12 credits.

Withdrawal from courses should occur no later than the end of the 10th week of classes. A student who withdraws from a course before this date will receive a grade of W for the course on the transcript. This grade will not impact the student's GPA.

A student who withdraws from a course from the 11th week up to the last day of classes will receive a grade of either WP or WF for the course. A grade of WP will not impact the student's GPA. A grade of WF will be recorded on the student's transcript as 0.00 grade points for the course, and this will be used in calculating the student's GPA. The determination as to whether a student receives WP or WF will be upon the recommendation of the course instructor.

Withdrawal from the University

In the event a student formally withdraws from the university, the following refund schedule will be applied:

- One week before the first day of classes 100% excluding the place reservation deposit of new students
- Before the end of the first week of classes 100% excluding non refundable deposits
- During the second week of classes 50%
- During the third week of classes 25%
- After the third week of classes 0%

TUITION AND FEES

Tuition and Mandatory Fees: Fall 2006 - Spring 2007

All students will pay the required tuition and fees by the due dates specified in the class schedule bulletin.

Required tuition and fees for each semester of the 2019-2020 academic year are listed below. Laboratory and individual instruction fees will be in addition to these amounts.

Full time students

Saudi National	SR xxxxx
Non-Saudi National	SR xxxxxx

Part Time Students

Credit Hours	Saudi National	Non-Saudi National
2	$$$	$$$
3	$$$	$$$$
4	$$$	$$$$
5	$$$	$$$$
6	$$$	$$$$
7	$$$	$$$$
8	$$$$	$$$$
9	$$$$	$$$$
10	$$$$	$$$$
11	$$$$	$$$$
12	$$$$	$$$$
13	$$$$	$$$$
14	$$$$	$$$$
15	$$$$	$$$$

Explanation of Fees

Designated Tuition

A mandatory Designated Tuition Fee of $xx per semester is required from all full time students and $yy per credit hour is required from all part time students. This fee is used to help cover the costs of services and use of all or any of the university's property, building, structures, activities, operations or other facilities. These funds are used to support the educational and general operations of the university such as scholarships, equipment, and development.

Student Service Fees

Fees for services outside of tuition at the PMU are kept to a minimum. The cost of using computer labs, sports facilities, career counseling programs or other services are typically included in the general cost of attending the university. Any fees charged beyond this general cost are assessed at the time students register for classes. For each category of fee, an equal amount will be charged to registering students. A list of such fees is published by the university's Office of Business Affairs.

Methods of Payment

PMU accepts the following methods of payment of fees:

- SADAD online payment method .
- Credit cards

The student's name and ID number must be noted on the bank transfer.

Due Dates

Students are not allowed to defer fee payments until after the registration period except with special permission. Exceptions are made only if the following conditions are met:

- The student submits a letter to the Office of the Registrar explaining the reasons for the inability to pay the full fees at registration. This letter must be received before or during the registration period.
- At least 50 percent of the full amount due is paid before or during the registration period.
- Approval for deferment and terms of payment are stated in writing and signed by the authorized university official. A charge of SR xxx is added to the amount due if a check is returned due to insufficient funds.

If a student fails to make full payment of tuition and fees, including any incidental fees, by the due date, he or she may be prohibited from registering for any classes until full payment is made. A student who fails to make full payment prior to the end of the semester may be denied credit for work done during the semester.

Refunds

Any student who has paid the registration fees and officially withdraws from the university by submitting a withdrawal card and registration receipt to the Cashier's Office is entitled to a refund of tuition and fees as follows:

Prior to the first regularly scheduled class day	100%
During the first five class days	80%
During the second five class days	70%
During the third five class days	50%
During the fourth five class days	25%
After the fourth five class days	None

If a part time student reduces his or her semester hours by officially dropping a course or courses, the following refund rates will apply, provided the student remains enrolled at PMU:

During the first twelve class days	100%
After the twelfth class day	None

A class day is a regular day of scheduled classes at the university (a full week, Saturday to Wednesday, will have five class days). The first twelve class days are the first twelve days of regular class meetings on the university campus. These rates apply to total tuition and fee charges for the semester. An immediate refund will not be made at the time a student withdraws or reduces his or her hours during a semester. Upon request, a check covering all refunds due will be mailed within approximately 30 days to the address left at the Cashier's Office.

FINANCIAL ASSISTANCE AND SCHOLARSHIPS

Financial Assistance in the form of scholarships and summer work programs are available on a limited bases to students who have excellent academic potential.

PMU Scholarships

PMU Scholarships are awarded through institutional funds. To qualify for a PMU Scholarship recipients must:

- Hold a General Secondary Education Certificate with an average of 95% or above for Saudi applicants, or 98% for non-Saudi applicants
- Demonstrate financial need that would make the PMU otherwise unaffordable
- Meet all admissions requirements.
- Document distinguished intellectual and academic performance
- Possess a record of good conduct
- Achieve high performance on a personal interview

Scholarship recipients will be selected by members of committee appointed by the Vice-Rector for Student Affairs and the Vice Rector of Academic Affairs.

Students will be eligible for the scholarship as long as they remain enrolled at the PMU, maintain a required GPA, and are not guilty of misconduct. Students who falsify their application will be disqualified immediately.

Sponsored Scholars Program

The Sponsored Scholars Program is funded through partnerships with the surrounding business community and provides a means to connect the private sector with talented students who may later become excellent employees.

To qualify for the Sponsored Scholars Program recipients must:

- Hold a High School Certificate (awarded in the past 3 years) with an average of 90% or above
- Demonstrate financial need that would make the PMU otherwise unaffordable
- Meet all admissions requirements
- Document distinguished intellectual and academic performance
- Possess a record of good conduct
- Receive high performance marks on a personal essay
- Meet the sponsor’s designated criteria

The Scholarship Committee will evaluate the applicants and make recommendations to sponsors, who will make the final decision.

Students will be eligible for the sponsored scholarship as long as they remain enrolled at the PMU, maintain a required GPA, and are not guilty of misconduct. Students who falsify their application will be disqualified immediately.

Summer Work Program

Summer employment opportunities are available for students to work with government and private sector entities. Preference will be given to students with financial need who will be working in an area related to their field of study.

ACADEMIC REGULATIONS

Students and Student Guidelines

Student Academic Load

A student admitted to and enrolled in a degree program usually registers for 15 to 19 credits each semester. The required minimum load for all students is 12 credits per semester, and the maximum load is 20 credits per semester. Under special circumstances, a student with a cumulative GPA of 3.25 or better may secure the permission of his or her dean to register for up to 22 credits in any one semester.

The minimum graduation requirements for a bachelor's degree vary from 120 to 139 credits depending on the program of study. Samples of study plans are provided in this catalog for each program. The degree programs have been designed to be completed in four years. However, some students may require additional time.

Residence Requirements

Residence requirements for degree completion at the PMU (defined as those courses which must be completed at the university) are set by the academic departments. However, it is generally expected that the final two years will be completed at the university.

PMU residence requirements must be fulfilled regardless of the number of hours transferred from other institutions. These requirements are in addition to the University Core course requirements which must also be taken at the PMU.

Categories of Students

Full-time Students

To be considered on full-time status, a student must carry a minimum course load of 12 credits per semester, with the normal load being 15. Under special circumstances, the dean of the school or college may allow students to drop their course load below 12 credits.

Part-Time Students

Enrollment as a part-time student is restricted to the following:

- PMU staff members who are pursuing a degree (approval of the employee's director is required)
- Students who need fewer than 12 credits to complete an undergraduate degree (approval of the academic advisor is required)
- Students who are granted permission by their dean
- Students who are enrolled as auditing, non-degree, or visiting students

Time Limit on Duration of Study

Students must complete all degree requirements within eight years of admission to PMU as an undergraduate student. The eight-year period includes leave time from the university. A student in good academic standing is allowed no more than two consecutive semesters of leave. A student who leaves the university for more than two consecutive semesters must submit a new application for admission to the Office of Admissions.

Grading System

The grade point average (GPA) is computed on a four-point scale. The following grading system is used at the PMU:

A+	4.00 grade points
A	3.75 grade points
B+	3.50 grade points
B	3.00 grade points
C+	2.50 grade points
C	2.00 grade points
D+	1.50 grade points
D	1.00 grade points
F	0 grade points
WF*	0 grade points

*Administrative Withdrawal Fail

Grades not calculated in the grade point average are

I	Incomplete
IP	In Progress
AU	Audit
EX	Exempt; no credit
TR	Transfer; credit counted
W	Withdrawal
N	No grade
P	Pass; credit counted
AW	Administrative Withdrawal

The student's GPA is calculated in the following manner:

The numerical value of each letter grade earned is multiplied by the number of credit hours course is worth. This yields a figure known as "quality points." The sum of the student's quality points is divided by the total number of credit hours. The final figure is the GPA.

University Guidelines for Lateness and Attendance

Attendance and participation in all class, studio, workshop, and laboratory sessions are essential to the process of education at the PMU. Students benefit from the lectures

and discussions with their instructors and fellow students. Lateness or absence hinders progress for the individual and the class and affects the student's grade.

A regular student should attend all classes and laboratory sessions. A student may be discontinued from a course and denied entrance to the final examination if his or her attendance is less than 85% of classes and lab sessions assigned to each course during the semester. A student who is denied entrance to an examination due to excessive absences will be considered as having failed that course.

University guidelines for lateness and attendance are as follows:

- The specific application of the attendance guidelines is at the instructor's discretion. In general, however, the following guidelines apply:
- In the event a student misses 15% of the sessions in a class for any reason, the instructor may initiate withdrawal of the student from the course. If approved by the dean of the student's major, the withdrawal is implemented.
- If the withdrawal is initiated before the end of the tenth week of class, a grade of W is entered on the student's record. This grade is not calculated in the GPA.
- If the withdrawal is initiated after the tenth week of class, a grade of WF is entered on the student's record and is be calculated in the GPA.
- In order to encourage student attendance and to minimize withdrawals, instructors are to keep attendance records and to draw students' attention to attendance requirements.
- Instructors need not give substitute assignments or examinations to students who miss classes
- Three occasions of lateness count as one absence. Lateness is defined by the individual instructor.

Examinations

Final and common examination schedules are published by the Office of the Registrar in advance of examination week. If a student is scheduled for more than two examinations in one day or has a time conflict with common examinations, then the student must report to the Office of the Registrar by an announced deadline to make the necessary adjustments.

Academic Courses

Course Value

All courses are valued in credits. Normally, each credit represents 50 minutes of class instruction or 120 to 180 minutes of laboratory experience per week for the semester. A three semester credit hour course typically meets for three 50 minute sessions per week. A four semester credit hour course typically meets for three 50 minute sessions plus one 120-to-180 minute laboratory session.

Class Periods

Except for laboratory, workshop, and specialized design and studio courses, classes ordinarily meet three days per week in 50-minute sessions or two days per week in 75-minute sessions. The university operates on a five-day schedule from Sunday through Thursday. The university is closed for the weekend on Friday and Saturday with the exception of certain Executive MBA courses, which are offered on weekends. The university also may be open on Thursdays during examination periods.

Independent reading or research courses, study projects, internships, and similar kinds of study opportunities meet according to the special arrangements of the college, department or faculty members concerned.

Courses are offered at the discretion of the department. Students should check with the respective academic departments for information on when courses will be offered.

PMU Course Numbering System

A common system for naming courses is applied throughout all academic programs at the PMU.

Each course title begins with four letters that indicate the subject matter of the course.

A few examples are: CHEM for Chemistry, ACCT for Accounting, MEEN for Mechanical Engineering, COSC for Computer Science, and IDES for Interior Design.

The letters are followed by four numbers:

- The first digit indicates the earliest year a course may be taken. A number 1 course may be taken at any time.
- The second digit indicates credit hours. Most courses carry 3 hours of credit. Courses with laboratories typically carry 4 hours of credit. A small number of courses carry 1 or 2 hours of credit.
- The third digit indicates a course that is part of a group or family of courses. For example, the three general math courses are assigned the number 1 and the four calculus courses are assigned the number 2. More advanced math courses are assigned the number 3.
- The fourth digit serves only to differentiate courses from one another within a family. For example, the four calculus courses are numbered 1, 2, 3, and 4. The two economics courses are numbered 1 and 2.

Course Descriptions and Syllabi

Descriptions of courses currently offered in the university curriculum are listed by course number and college at the end of this catalog in the section titled PMU Course Offerings. Nonrecurring topics courses are published each semester in the schedule of classes.

Course syllabi are available from the individual course instructor, department, or program offices. They include course goals and objectives, content and topics, instructional material and resources, the method of evaluation, the meeting time and place, credit hours and prerequisites.

Course Prerequisites

Courses above the introductory level require a minimum background of knowledge, as indicated by prerequisite courses cited in individual course descriptions. Titles and numbers listed refer to courses offered at the PMU.

Equivalent courses satisfactorily completed at other institutions may also meet prerequisite requirements by transfer credit. Students should consult the head of the appropriate academic unit for more information. Students are responsible for entering the class with the required competence.

In general, courses should be taken in an order of increasing difficulty. Credit may not be granted for a lower level course once a more advanced course has been completed. Courses in which a grade of D or F was received do not satisfy prerequisite requirements. Specific details for different degree programs are available in the deans' offices.

Meeting Degree Requirements

Performance Expectations

Each college within the university requires minimum standards of academic performance from its students. Typically, these requirements include maintaining minimum grade point averages (GPA) for various categories of courses, including:

- the PMU Core Curriculum
- courses from the Core Curriculum that specific majors require beyond the minimum
- courses from the college that are common to all majors within the college
- courses within the major academic discipline

The required GPA for each category is established by the individual college.

In order to graduate, all students at the PMU are required to maintain an overall GPA of 2.0.

Individual colleges within the university may also require national or international standardized tests for graduation. Students should inquire of the dean's office regarding such requirements.

Repeating Courses

A student who receives a D (1.0) or F (0.0) in any course is required to repeat the course and to achieve the required grade point average for that category of course. In the case of an elective, the major department may allow the student to select another elective.

Students may repeat a course one time, with additional repeats allowed at the discretion of the faculty. However, no more than 10 repeated courses are allowed over the student's career at the PMU.

After the first repeat, prior grades count toward the student's GPA. For example: A student who receives a D followed by an A will have the D erased and replaced with the A on the transcript. A student who receives an F followed by a D followed by an A will have the F erased, and both the D and the A will be averaged into the GPA.

Students repeating courses are required to participate in tutoring and remediation programs offered by the college faculty and the PMU Learning Resources Center.

Incomplete Grades and Make-Up Examinations

The work for a course must be complete on the day the semester ends. No incomplete grade (I) is given as a final grade in any course unless there is a compelling medical or other such emergency certified in writing by a medical or other professional. In the case of unexcused incomplete work, a grade of F is given for any missing work (such as papers or quizzes), and the total course grade is computed accordingly.

A student will be allowed to make up incomplete work only in exceptional cases and emergencies (as noted above). In these cases, the student must receive written approval of the instructor, chair, and dean. The incomplete work must be made up before the end of the next semester. Beyond this period, a grade of I granted to the student reverts into a grade of F.

It is the responsibility of the student to find out from his or her professor the specific dates by which requirements must be fulfilled. The instructor's deadline for submitting incomplete grades to the Registrar is 72 hours after the date of any make-up examination.

Academic Probation

Placement on Probation

Students will be placed on academic probation at the end of any semester in which their grade point average (GPA) is below 2.0. Students on probation have one semester in which to achieve a non-cumulative GPA of 2.0 or higher. If they do so in their subsequent semester, they are removed from academic probation. Failure to do so results in dismissal from the university

Removal of Probation and Dismissal

Probation will be removed at the end of any semester in which the student attains a cumulative GPA of 2.0. A student may be dismissed if he or she fails to remove his/her probation by the end of the second semester on probation. Actions involving academic probation and dismissal are entered on the student's permanent record.

Reinstatement

Students who left the PMU not in good standing and have been out of the university for no more than two semesters may submit a written request for reinstatement to the Office of the Registrar. The request should outline activities since leaving PMU that contribute to the student's academic development. Courses taken at another institution during this interim period are not transferable.

Students who have been out of the university for more than two semesters must submit a new application for admission to the Office of Admissions. Dismissed students may also be considered for reinstatement.

Study at Another Institution

An enrolled student who wishes to take courses at another university for transfer credit to the PMU must receive approval from his or her dean. The decision to credit the course taken by the student in another institution will be based on the careful analysis of the course content and the student's performance in the course.

It is recommended that students receive approval before taking a course. In unusual circumstances, however, students will be allowed to petition for credit after they have taken a course at another institution.

The host institution must be recognized by the Ministry of Education of its country and must be accredited. It must provide learning experiences similar to those offered by the PMU.

Academic Support and Assistance

Academic Advising

Academic advising is an essential element of the educational process. The PMU requires advisor-student conferences at least once per semester. Students are assigned academic advisors who help them in selecting their course of study and in planning their schedules. Their advisors also approve their schedules each semester. However, students are responsible for selecting their courses, meeting course prerequisites and adhering to university policies and procedures. The advisor assists the student in obtaining a well-balanced education and in interpreting university policies and procedures. Students may also consult faculty, department or program chairs, program coordinators, and deans.

Learning Enrichment Services

In addition to information services and resources traditionally associated with a campus library, the PMU Learning Resources Center provides learning enrichment services to ensure the student success in the university's learning-centered approach to education.

- Academic support services for both males and females.
- Collaboration among professional staff, faculty, and students to deliver tutoring and other academic support services.
- Non-credit classes that focus on mastery of learning skills.
- Specialized support centers in mathematics, reading, and writing.
-

- Peer tutoring to build learning skills, leadership skills, and teamwork.
- A diagnostic program to identify students' needs for developing learning skills and to propose appropriate assistance.

Complete information for the PMU community about LRC services and resources is available on the center's Web site (www.pmu.sa.edu/xxxxxx), in print publications, and on electronic bulletin boards located in the building.

Student Records

Student Responsibility

Students are responsible for their behavior, academic or otherwise, at the PMU. The university expects that students behave as mature members of the academic community and adhere to the highest standards of personal and academic integrity.

Students should keep their own records of all transactions with the university.

It is also recommended that students keep copies of all materials submitted in fulfillment of course work.

Permanent Record

A permanent record, reflecting academic achievement, is maintained in the Office of the Registrar for each student who registers at the university.

Students' Privacy Rights

Students have the right to:

- inspect and review information contained in their educational records. The university is not required to provide (or allow the making of) copies of these documents.
- request changes or updates to their personal data.
- consent to disclosure, within the extent of KSA laws, personally identifiable information from education records.

Documentation

All transcripts and other documents from other institutions are the property of the PMU and, as such, are under the control of the Office of the Registrar. The university is not required to provide (or allow the making of) copies of these documents. Transcripts submitted to the PMU for admission or credit transfer become the property of PMU and cannot be returned to the student or forwarded to other institutions.

Transcripts

Students may obtain transcripts of their academic records from the Office of the Registrar by requesting through the Banner Online services . Transcripts will only be released with a signed request from the student concerned. The university will issue only complete transcripts, not parts of the student record. The university will not make copies of transcripts on file from other colleges or universities.

Names on Diplomas and Degrees

The names of PMU students on diplomas and degrees will be spelled in English exactly as they appear on the student's passport or identity card. If a name on a passport or an identity card does not appear in English, then the spelling of the name will be printed according to the personal preference of the student concerned.

Enforcement of Academic Regulations

Student Petitions and Appeals

Petitions

Students may petition the Office of the Vice Rector for Academic Affairs for exceptions to academic policies of the university. Petitions are received by the Vice Rector's office through the Office of the Registrar.

Students who think they want to petition the Vice Rector or are advised to consult first with the Registrar to determine whether a petition is actually required in their case or whether the matter can be handled through those offices.

The petition requires the Registrar's signature in order for it to be transmitted to the Vice Rector for Academic Affairs. It should be noted, however, that the Registrar's signature does not necessarily mean that the Registrar recommends approval by the Vice rector, but merely that the Registrar has been consulted in the petitioning process. The Registrar is free to comment more fully on the matter, either on the petition form or in a separate letter, and may wish to add attachments. Other signatures may be appropriate in certain types of petitions, e.g., the university physician, a member of the Counseling Services staff, a course instructor, etc.

Appeal of a Grade

Students are entitled to objective, professional evaluation of their academic work and to fair, equitable treatment in the course of their academic relationships with members of the faculty. These criteria are observed by the members of the PMU faculty as a part of their professional responsibilities. Misunderstandings have traditionally been resolved, informally, in discussion between students and faculty members, and this manner of resolving problems is deemed appropriate in this academic community.

Should students believe they have a legitimate grievance that has not been reconciled by such private conversation, they may pursue the matter by consulting with the department chair or associate chair and/or dean of the college in which the course is offered. Each college may have its own internal method of dealing with these matters.

After having exhausted all these means to resolve the matter informally and having found the grievance still unreconciled and still believing the grievance to be legitimate, the student may file a petition with the Vice Rector for Academic Affairs, setting forth a full, fair account of the incident or circumstances giving rise to the grievance.

Alternately, if, in the judgment of the dean of the college and the Vice Rector for Academic Affairs, the grievance is of such gravity or its resolution would have such impact on the welfare of students generally, or on the conduct of professional responsibilities in the university as to require even more formal safeguards for the aggrieved student and faculty member involved, the Vice Rector for Academic Affairs shall prescribe an appropriate procedure consonant with the university's mission.

Appeal of Other Academic- Related Issues

In the event that a student wishes to discuss an issue pertaining to a course, instructor or other academic-related issues, he or she may direct his/her concern to the chair of the department and/or dean of the college/school. If the issue continues to exist, the student may choose to file a petition with the Office of the Vice Rector for Academic Affairs. Petition forms are available from the Office of the Registrar.

Student Academic Honesty and Integrity

Statement of Principle

Prince Mohammad University expects all students to engage in all academic pursuits in a manner than is above reproach and to maintain complete academic honesty and integrity in their academic experiences both in and out of the classroom. The university may initiate disciplinary proceedings against a student accused of any form of academic dishonesty, including but not limited to cheating on an examination or other academic work, plagiarism, collusion, and/or the abuse of resource materials.

Definitions

"Cheating" includes, but is not limited to:

1. Copying from another student's test paper, a laboratory report, other report, computer files, data listings, and/or programs.
2. Using, during an examination, materials not authorized by the person giving the test.
3. Using, during an examination and without authorization, a calculator programmed with formulas or course information that the student is expected to know.
4. Collaborating, without authorization, with another person or persons during an examination or in preparing academic work.
5. Knowingly, and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of an unadministered test.
6. Substituting for another student, permitting any other student, or otherwise assisting any other person to substitute for oneself of for another student in the taking of an examination or in the preparation of academic work to be submitted for academic credit.
7. Bribing another person to obtain an unadministered test or information about an unadministered test.
8. Purchasing, or otherwise acquiring and submitting as one's own work, any research paper or other writing assignment prepared by an individual or firm. (This section does not apply to the typing of the rough and/or final versions of an assignment by a professional typist.)
9. Changing an answer on a test that has already been graded and then requesting a correction from the instructor.

10. Participating in any activity or action that affords an unfair academic advantage to the student.
11. Using all or part of any work developed or produced for credit in one course and submitting it for credit in another course without the instructor's approval.
12. Participating in acts which limit the ability of another student to perform to the best of the student's ability in a course.
13. Assisting another student to be academically dishonest.

"Plagiarism" means the appropriation and the unacknowledged incorporation of another's work or idea into one's own work offered for academic credit. Plagiarism includes, but is not limit to:

1. Failing to properly acknowledge a statement, idea, or statistic made by another individual in the body of the work,
2. Taking a whole section of someone else's work and placing it in the body of your own work without properly acknowledging the contributor,
3. Representing someone else's entire work as that of his or her own.

"Collusion" means the unauthorized collaboration with another in preparing work offered for academic credit.

"Abuse of resource materials" means the deliberate mutilation, destruction, concealment, theft or alteration of materials (including library materials) provided to assist students in the mastery of course content.

"Academic work" means the preparation of an essay, dissertation, thesis, report, problem, assignment, or other project that the student submits as a course requirement for a grade.

Disciplinary Procedures for Academic Dishonesty Cases

All academic dishonesty cases must first be considered and reviewed by the faculty member. If the faculty member believes that an academic penalty is necessary, he/she shall assign the penalty. The faculty member shall also notify the student of their right to appeal the decision to the department dean and, if needed, to the Vice Rector for Academic Affairs. At each step in the process, the student shall be entitled to written notice of the offense and/or of the administrative decision, an opportunity to respond to the charges, and the right to an impartial disposition as to the merits of the case. After the completion of the academic process, the academic officer making the final disposition of the case may refer the matter to the Vice Rector for Student Affairs for any additional disciplinary action that may be appropriate, as in the case of flagrant or repeated violations.

In the case of flagrant or repeated violations, the Vice Rector for Student Affairs may take additional disciplinary action. The procedures for handling cases of academic dishonesty by the Vice Rector for Student Affairs shall be the same as those established for handling other campus disciplinary cases.

Grievance and Appeal Procedures for Students

1. It is the policy of the PMU to receive, process, and resolve student grievances in a fair and prompt manner and to assure that students receive equity and justice in their association with the University.
2. This grievance policy and procedures are established for students for use in cases not otherwise covered by the policies of the University. Applicants for admission are also covered by these grievance procedures.
3. Grievances shall consist of matters of disagreement or dissatisfaction arising out of circumstances wherein the student believes that there has been an infraction, breach, or misinterpretation of a University policy, rule, or regulation. Only one subject matter may be covered in any one grievance.
4. Students should first attempt to resolve all disputes with the person who made the initial decision. All grievances not resolved at the appropriate lower level shall be presented in writing within three class days to the Director of Campus Life and shall contain a clear and concise statement of the grievance by indicating the applicable policy, rule, or regulation that is alleged to have been violated, the date the incident took place, the person or persons involved, the issue involved, and the relief sought.

5. The Director of Campus Life will investigate the grievance and will notify both parties in writing of the decision within five days of the conclusion of the investigation.
6. Grievances not satisfactorily resolved with the Director of Campus Life may be appealed to the Vice Rector for Student Affairs. Such appeals must be submitted in writing within ten class days of the decision rendered by the Director of Campus Life. The Vice Rector for Student Affairs will review all of the evidence from the initial investigation and may conduct additional interviews as needed. A written decision will be made by the Vice Rector for Student Affairs within five days following the final meeting with the parties involved and a copy of the decision will be sent to both parties and to the Director of Campus Life.
7. Grievances not satisfactorily resolved with the Vice Rector for Student Affairs may be appealed to the Rector of the University. This appeal must be made within ten days following the decision by the Vice Rector for Student Affairs. The Rector will review all of the information from previous investigations and may conduct additional interviews as needed. The decision by the Rector of the University is final and binding on all parties. A copy of the written decision will be provided to all parties involved.
8. Failure of a student to process his or her grievance to the next step within the specified time limit shall constitute an abandonment of the grievance.
9. Failure of University personnel to give an answer within the prescribed time limit authorizes the student to submit his or her grievance to the next step.
10. There can be an extension of the time limits in any step, if mutually agreeable.
11. No student shall be disciplined, penalized, or otherwise prejudiced for exercising the rights provided for in this grievance procedure.

Grade Grievance and Appeal Procedures for Students

1. The assignment of a grade in a course is the responsibility of the faculty member and is based on the professional judgment of the faculty member. Except for issues of computation or discrimination, the faculty member's grade determination is final.
2. Students having a grievance concerning a grade in a course should make every effort to resolve the issue with the faculty member who assigned the grade. Faculty members should attend to the concerns of the student and explain the basis for the grade assigned.
3. Should a student be unable to resolve the grievance with the faculty member, the student may appeal to the dean of the appropriate academic college. If the faculty member in question is the dean of the college, the student should present the grievance to the Vice Rector for Academic Affairs. The student must present a written statement and provide compelling evidence (examinations, papers, etc.) that demonstrate why the grade should be changed. The written grievance must be submitted no later than (30) days from the conclusion of the semester in which the incident occurred.

Graduation

Graduation

Normally, the university confers degrees at the end of the spring semester. Candidates for degrees file an "Application for Graduation" form in the Office of the Registrar during the registration period of the last expected term of study. Only after an application for graduation has been filed can the Office of the Registrar begin processing the necessary information for final certification for graduation. Students who fail to complete all degree requirements by the end of the term for which they apply to graduate need not reapply for graduation. Their previous application will be automatically forwarded to the following semester.

Participation in the Commencement Exercises

Only students who have successfully completed degree requirements and have no "holds" on their records by the end of the term for which they have applied to graduate are certified for conferral of a degree. In witness of the degree conferred, the permanent record of the graduate is appropriately noted with a statement and date of graduation before his or her diploma is released.

Only degree candidates whose academic records indicate that they satisfy degree requirements and have no financial transcript holds are permitted to participate in commencement ceremonies.

University Honors and Awards

Dean's List

The Office of the Registrar issues a dean's list of honor students at the end of each semester. To be placed on the dean's list, a student must:

- Have registered and completed a minimum of 15 hours in the semester
- Have at least a semester 3.5 GPA
- Be in good academic standing
- Rank in the top ten percent of students in his or her college
- Have no failing grades in any of his/her courses during that semester
- Have no incomplete grades
- Have no disciplinary action against him/her

Graduation Honors

The university grants Latin honors at graduation. To be eligible for graduation honors, students must have completed at least 60 credits required for their degree in residence at the PMU and have achieved the requisite GPA. These are Summa Cum Laude:3.90 GPA; Magna Cum Laude: 3.70-3.89 GPA; Cum Laude: 3.50-3.69 GPA. Latin honors are listed in the commencement program and on the student's diploma and permanent record.

PREPARATION YEAR PROGRAM AND CORE CURRICULUM

Preparation Year Program and Core Curriculum
Office: Insert Building, Room
Phone: Insert Phone Number
FAX: Insert Fax Number
e-mail: Insert e-mail of Dean

_____, Ph. D., Dean

OVERVIEW OF THE PREPARATION YEAR PROGRAM

To ensure that the students the university admits will be prepared to succeed in the PMU's challenging academic environment, a non-credit Preparation Year Program will be provided to assist entering students in developing their skills in English, mathematics, and learning and study methods.

The Preparation Year Program will provide students with two semesters of non-credit instruction in learning skills, two semesters of mathematics, and a level of proficiency in English that will enable students to succeed in a university where all courses (with the exception of Arabic language and Islamic Studies) will be taught in English. The time required to attain this level of English abilities will vary depending on the student's level of achievement upon entering the program. Courses are taught in half-semester blocks. It is expected that most students will attain the required level in two full semesters, though some may require additional instruction.

Upon successful completion of the Preparation Year Program, students will be ready for acceptance into one of the three colleges of the PMU.

PREPARATION YEAR PROGRAM COURSE DESCRIPTIONS

Communication - PRPC

PRPC 0011: Low-Beginning Communication Skills (0,0) PRPC 0011 is a foundation course for low-proficiency EFL learners. It introduces students to basic reading skills, vocabulary for basic communication, speaking routines and patterns, and listening for comprehension and response. This course (Level 1) introduces PMU students to the student-centered, highly active and interactive EFL classroom environment, and to the expectations in that environment. **Prerequisite:** This course has no prerequisite. Assignment to course level follows placement tests at the beginning of the Preparation Year Program.

PRPC 0021: High-Beginning Communication Skills (0,0) PRPC 0021 consolidates basic reading, vocabulary acquisition, speaking, and listening skills learned at the low-beginning level. The course (Level 2) further introduces students to the reading skills and vocabulary-acquisition strategies and approaches that will characterize all EFL classes at the PMU. Emphasis on general speaking, active listening, and pronunciation skills continue in an integrated approach using more complex material. The classroom is student-centered and interactive. **Prerequisite:** PRPC 0011 (Level 1), or assignment to Level 2 following placement tests at the beginning of the Preparation Year Program.

PRPC 0031: Low-Intermediate Communication Skills (0,0) PRPC 0031 moves students beyond passive reading to a more active, analytical approach to the material. Students begin structured study of high-frequency academic words from the Academic Word List. Listening activities develop students' facility in understanding material organized according to major patterns of thought and speech. All previous reading, vocabulary, speaking, and listening skills are reviewed and further developed using higher-level materials and an integrated-skills approach. **Prerequisite:** PRPC 0021 (Level 2), or assignment to Level 3 following placement tests at the beginning of the Preparation Year Program.

PRPC 0041: High-Intermediate Communication Skills (0,0) In PRPC 0041 reading, vocabulary, speaking, and listening activities continue to become more analytical and academic in focus, preparing students to meet university-level expectations. Reading skills training continues, as reading materials become longer and more complex. Vocabulary acquisition skills are emphasized, and another section of the Academic Word List is added for study. Academic listening skills become a primary emphasis, with training in lecture-listening and note taking strategies. Students learn and practice academic speaking formats. **Prerequisite:** PRPC 0031 (Level 3), or assignment to Level 4 following placement tests at the beginning of the Preparation Year Program.

PRPC 0051: Low-Advanced Communication Skills (0,0) PRPC 0051 begins to bridge the gap between EFL instruction and the use of English in realistic academic activities. Reading skills training continues with longer, authentic material. Word-attack skills and additional words from the Academic Word List prepare students for university-level reading. Longer, more complex authentic listening activities are part of this course. The academic emphasis of the class does not, however, diminish the communicative, interactive, and student-centered nature of the classroom. **Prerequisite:** PRPC 0041 (Level 4), or assignment to Level 5 following placement tests at the beginning of the Preparation Year Program.

PRPC 0061: High-Advanced Communication Skills (0,0) PRPC 0061 reviews and consolidates all the reading skills and vocabulary word-attack skills students learned at previous levels, using a variety of university-level material. Readings are longer and the final words from the Academic Word List are studied. Academic listening tasks are long, complex, and realistic to prepare students for a successful transition into university classes. The classroom remains student-centered, with interactive, integrated-skills activities. **Prerequisite:** PRPC 0051 (Level 5), or assignment to Level 6 following placement tests at the beginning of the Preparation Year Program.

Writing - PRPW

PRPW 0011: Low-Beginning Writing Skills (0,0) This low-beginning Writing Skills course introduces the student to the basics of English grammar and composition with the goal of elementary proficiency in speaking and writing. This is achieved through extensive pair and group activities in the classroom as well as directed composition, spelling, and mechanics at the basic paragraph level. **Prerequisite:** This course has no prerequisite. Assignment to course level follows placement tests at the beginning of the Preparation Year Program.

PRPW 0021: High-Beginning Writing Skills (0,0) This high-beginning writing course provides a strong foundation in English grammar with acquisition of present and past verb tenses in simple and progressive forms, an introduction to present perfect, basic modals, and comparison, as well as other high-beginning structures. In this Level 2 course, students learn to apply the grammar at the high-beginning level in writing and speaking, focusing on monitoring for accurate use of the language. Basic paragraph-writing skills are formed through an introduction to the writing process and the incorporation of organization, simple sentence structure and mechanics. **Prerequisite:** PRPW 0011 (Level 1), or assignment to Level 2 following placement tests at the beginning of the Preparation Year Program.

PRPW 0031: Low-Intermediate Writing Skills (0,0) This low-intermediate writing course introduces or reviews major grammatical concepts. In addition, the course provides an introduction to the fundamentals of academic writing at the intermediate level, focusing on the mastery of paragraph organization and development, three-paragraph essays of classification, cause and effect, comparison and contrast, an introduction to the five-paragraph essay, and the use of transitions. In this Level 3 course, students refine their knowledge of English writing mechanics and conventions through word processing, and apply their developing knowledge of grammar and sentence structure to their writing. Beginning research and documentation skills are introduced. **Prerequisite:** PRPW 0021 (Level 2), or assignment to Level 3 following placement tests at the beginning of the Preparation Year Program.

PRPW 0041: High-Intermediate Writing Skills (0,0) This high-intermediate writing course focuses on academic writing, making the transition to the development of unified, coherent essays. In addition, the final writing project is a documented essay, the result of training in basic library and Internet research methods and the fundamentals of academic documentation. In this Level 4 course, major topics in grammar are reviewed and complex sentence structure is covered, with students expected to begin writing mature, sophisticated sentences. **Prerequisite:** Successful completion of PRPW 0031 (Level 3), or assignment to Level 4 following placement tests at the beginning of the Preparation Year Program.

PRPW 0051: Low-Advanced Writing Skills (0,0) This low-advanced writing course focuses on writing essays with clarity of focus, cohesion, and development of main and supporting ideas. Other academic writing skills are addressed in this Level 5 course, including instruction and definition. Students refine their understanding of the writing process. The course also features a strong focus on the research process, particularly on synthesizing information and citing sources. This process culminates in a research paper at the low-advanced level. Students refine their control of complex sentence structure in both oral and written contexts and learn to use a variety of structures in their writing. **Prerequisite:** PRPW 0041 (Level 4), or assignment to Level 5 following placement tests at the beginning of the Preparation Year Program.

PRPW 0061: High-Advanced Writing Skills (0,0) This high-advanced writing skill course focuses on increasing fluency and sophistication of essay writing at the high-advanced level, and the production of a research paper. This Level 6 course emphasizes summarizing, synthesizing, and argumentation, and addresses other academic writing skills. A review of advanced grammatical structures and their application to academic writing is included. **Prerequisite:** PRPW 0051 (Level 5), or assignment to Level 6 following placement tests at the beginning of the Preparation Year Program.

Mathematics - PRPM

PRPM 0011: Introductory Algebra (0,0) This course is an introduction to mathematical thinking in the context of the real number system and functional relationships. To assist in solving problems, the course incorporates the use of technology, specifically graphing calculators and Excel spreadsheets. **Prerequisite**: Satisfactory completion of high school algebra.

PRPM 0012: Intermediate Algebra (0,0) A continuation of PRPM 0011, this course focuses on mathematical thinking and data analysis applied to linear, quadratic, rational, logarithmic, and exponential functions. The course incorporates the use of technology to help solve problems, specifically through the use of graphing calculators and Excel spreadsheets. **Prerequisite:** PRPM 0011: Introductory Algebra.
PRPM 0022: Pre-Calculus (0,0) This course provides an overview of pre-calculus mathematics with an emphasis on elementary functions and their applications. The course incorporates the use of technology to help solve problems, specifically through the use of graphing calculators and Excel spreadsheets. **Prerequisite:** PRPM 0011: Introductory Algebra.

Study Skills and Learning Strategies - PRPL

PRPL 0011: Theories and Applications of Learning I (0,0) This course focuses on models of academic success founded on an understanding of learning theories from the fields of education and psychology and the application of those theories throughout the semester. Through a combination of guided application of learning strategies, individual academic advising, and instruction in and daily use of technology, students will learn the skills necessary to achieve academic success. **Prerequisite:** Students must have achieved English Level 3 proficiency or higher, either by successful completion of Level 2 or by class assignment following placement tests at the beginning of the Preparation Year Program. Students in English Levels 1 or 2 will be placed in a special section of PRPL 0011 that will cover the same skills and subject material using lower-level English skills and limited use of Arabic.

PRPL 0012: Theories and Applications of Learning II (0,0) This course builds on the learning strategies, computer literacy skills, and self-management skills that students have gained in PRPL 0011: Theories and Applications of Learning I. The foundations of critical thinking will be introduced

as well as the development of team communication skills, global awareness, and electronic resource skills. Through continued guided application of learning strategies, individual academic advising, computer software applications, and discussion of career and professional development issues, students will continue to build on the skills necessary to achieve academic success. **Prerequisite:** Students must have earned at least a grade of "C" or better in PRPL 0011. They must have achieved English Level 4 proficiency or higher, either by successful completion of Level 3 or by class assignment following placement tests at the beginning of the Preparation Year Program.

OVERVIEW OF THE UNDERGRADUATE CORE CURRICULUM

The Undergraduate Core Curriculum contains three components.

The University Core Curriculum contains courses required of all PMU students. These courses are designed to develop the six core competencies that distinguish PMU graduates.

Group I (*18 semester hours required*.)

COMM 1311: Written Communication
COMM 1312: Writing and Research
COMM 2311: Oral Communication
COMM 2312: Technical and Professional Communication
UNIV 1211: Professional Development and Competencies
UNIV 1212: Critical Thinking and Problem Solving
UNIV 1213: Leadership and Teamwork

Group II (*8 Semester hours required*)

Arabic Language*
Islamic Studies*
*(*1 two semester-hour course each semester for 4 semesters)*

Group III *(2 semester hours required)*

Physical Education*
*(*Physical Education is typically taken during the Freshman year.)*

The College Core Curriculum prescribes academic subjects which PMU students are required to master. Each college of the university (Engineering, including Interior Design; Information Technology; and Business Administration) determines the specific College Core courses that will be required of its students. All students, however, are required to successfully complete courses in each of three College Core fields: natural and physical sciences, mathematics, and social and behavioral sciences.

Mathematics *(6 semester hours [two 3-hour courses] must be taken. Colleges designate specific required courses, if any)*

MATH 1311: Finite Mathematics for Students of Business
MATH 1312: Calculus for Students of Business
MATH 1313: Statistical Methods
MATH 1321: Pre-Calculus Mathematics
MATH 1422: Calculus I
MATH 1423: Calculus II
MATH 1324: Calculus III
MATH 2331: Linear Algebra
MATH 2332: Ordinary Differential Equations

Natural and Physical Sciences (*8 semester hours [two 4-hour courses] must be taken. Colleges designate specific required courses, if any.)*

BIOL 1411: Introductory Biology
CHEM 1411: Introductory Chemistry
CHEM 1421: Chemistry for Engineers I
CHEM 1422: Chemistry for Engineers II
GEOL 1411: Introductory Physical Geology
PHYS 1411: Introductory Physics
PHYS 1421: Physics for Engineers I
PHYS 1422: Physics for Engineers II

Social and Behavioral Sciences *(6 semester hours [two 3-hour courses] must be taken. Colleges designate specific required courses, if any.)*

ECON 1311: Introduction to Macroeconomics
ECON 1312: Introduction to Microeconomics
GEGR 1311: World Regional Geography
HIST 1311: World Civilizations, 1600 - Present
PSYC 1311: Introduction to Psychology
SUST 1311: Introduction to Sustainability
FREN 1311; Introduction to French Language
SPAN 1311: Introduction to Spanish Language

The Assessment Capstone Series consists of three courses required of all PMU students. The first two courses are designed to increase the success of the third and final capstone course taken during the student's senior year. The Assessment Capstone Series will measure the student's success in achieving the six PMU learning outcomes.

ASSE 2111: Learning Outcome Assessment I
ASSE 3211: Learning Outcome Assessment II
ASSE 4311: Learning Outcome Assessment III

CORE CURRICULUM COURSE DESCRIPTIONS

Outcome Assessment - ASSE

ASSE 2111: Learning Outcome Assessment I (1,0) The course will be taken by students during their first semester in the second year of the undergraduate program and will orient them to learning-outcome expectations, the development of a learning portfolio, and the assessment process. **Prerequisite:** None

ASSE 3211: Learning Outcome Assessment II (2,0) The course will be taken by students during their first semester in the third year of the undergraduate program and will orient them to learning-outcome expectations, the development of a learning portfolio, and the assessment process. The course builds on ASSE 2111 to prepare students for the final capstone experience, ASSE 4311. **Prerequisite:** ASSE 2111

ASSE 4311: Learning Outcome Assessment III (3,0) The course will be taken by students either first or second semester of the fourth year of the undergraduate program. The semester during which the course is taken will be determined by the student's major field of study. The course will orient students to learning outcomes expectations, the development of a learning portfolio, and the assessment process. The course requires students to meet all the university learning objectives. **Prerequisite:** ASSE 3211

Biology - BIOL

BIOL 1411: Introductory Biology (3,1) BIOL 1411 will provide students with a foundation in basic biological principles. Students will gain familiarity with the biological world from both a taxonomic perspective (plant, animal, microbe) and process-based perspective (biochemistry, cell biology, physiology, ecology, behavior). Additionally, students will learn to integrate biological material into the broader world around them, and to develop critical thinking and problem solving skills involving quantitative data from the natural sciences. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisite**: None

Chemistry – CHEM

CHEM 1411: Introductory Chemistry (3,1) CHEM 1411 will provide students with a foundation in basic chemical principles. Students will gain familiarity with chemical equations and reactions, and they will be given the tools necessary to solve chemical problems that they might encounter on a daily basis. An important component will be an understanding of the impact of chemistry on all aspects of humans and human civilization. Students will learn to integrate chemical understanding in the broader world around them, and develop critical thinking and problem solving skills involving quantitative data from the natural sciences. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled, one-credit laboratory that accompanies it. **Prerequisite**: None

CHEM 1421: Chemistry for Engineers I (3,1) The objective of CHEM 1421 is to create a substantial base for a two-semester chemistry sequence to provide the additional chemistry required by engineering students prior to specialized courses in chemical engineering applications. This course is not to be taken by non-engineering students. The approach, like that of the following semester CHEM 1422, will be largely conceptual leading to an understanding of chemistry and chemical processes. Students in this course will gain familiarity with the chemical/atomic structure of ions, molecules and atoms and how they react. Emphasis will be on a quantitative approach involving chemical reactions and their control. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled, one-credit laboratory. **Prerequisite:** Scoring well in high school chemistry is a prerequisite. MATH 1321: Pre-Calculus is a co-requisite.

CHEM 1422: Chemistry for Engineers II (3,1) The objective of CHEM 1422 is to build upon the base provided in the prerequisite CHEM 1421, and to provide the additional chemistry required by engineering students prior to specialized courses in chemical engineering applications. This course is not to be taken by non-engineering students. The approach, like that of the CHEM 1421, will be largely conceptual leading to an understanding of chemistry and chemical processes. Students in this course will gain familiarity with the physical chemistry of liquids and solids, the nature of equilibrium, acids and bases, and thermodynamics and electrochemistry. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisites:** MATH 1422: Calculus I, CHEM 1421: Chemistry for Engineers I

Communication - COMM

COMM 1311: Written Communication (3,0) Introduces students to writing as process and product. Students will learn invention, selection, arrangement, presentation, and revision as parts of the writing process leading to compositions that are clear, concise, and correct. The course will also teach students to identify and correct errors in written communication, with an emphasis on grammar, mechanics, and proper manuscript form. **Prerequisite:** None

COMM 1312: Writing and Research (3,0) This course continues the work of assisting students to develop, organize, and express insights, observations, and ideas effectively, but in the context of planning and composing a formal research paper. In the course of doing research for a 3,000-5,000-word paper, students will learn to use computer databases and online sources as well as library materials and will significantly sharpen their analytical reading, critical thinking, and writing skills.

Prerequisite: COMM 1311: Written Communication

COMM 2311: Oral Communication (3,0) This course assists students in the development and presentation of clear, cogent, and compelling oral presentations. Students will learn to evaluate ideas and evidence, to think critically, and to communicate effectively in group situations. A major oral presentation will be based on the written research project completed for COMM 1312: Writing and Research. **Prerequisite:** COMM 1312: Writing and Research

COMM 2312: Technical and Professional Communication (3,0) This course builds on the writing and communication skills developed in COMM 1311, 1312, and 2311. Students will learn a variety of technical and professional writing techniques, will draft a professional resume, business letters, technical papers and memoranda, and will work in teams using technology to produce reports and presentations. **Prerequisites:** COMM 1311: Written Communication, COMM 1312: Writing and Research, COMM 2311: Oral Communication

Economics – ECON

ECON 1311: Introduction to Macroeconomics (3,0) The course studies resources and goals of the economy, national income, employment, money and banking, fiscal and monetary policy, contemporary problems, economic growth, and international economics. **Prerequisite**: None. ECON 1311 may be taken before or after ECON 1312, or only one of the courses may be taken.

ECON 1312: Introduction to Microeconomics (3,0) The course studies markets, resource allocation, consumer and producer behavior, production, costs, market structure, and the role of government in a market economy. **Prerequisite**: None. ECON 1312 may be taken before or after ECON 1311, or only one of the courses may be taken.

French – FREN

FREN 1311: Introduction to French Language (3,0) This course introduces students to the pronunciation, basic comprehension, and communication of French language through active class use of simple vocabulary, grammar, and syntax. It stresses oral proficiency, pronunciation, listening comprehension and grammatical accuracy. In addition, the students will acquire an initial understanding of cultural backgrounds of French-speaking countries. . **Prerequisite**: None

Geography – GEGR

GEGR 1311: World Regional Geography (3,0) The course is primarily a survey of physical and cultural patterns of the world. It presents a broad overview of geographical features such as landforms, language of maps, graphs, languages, climates, and other aspects of each particular world region. **Prerequisite**: None

Geology – GEOL

GEOL 1411: Introductory Physical Geology (3,1) GEOL 1411 provides students with a foundation in basic geological principles. Students will gain familiarity with the geological world, including the earth's composition and geologic processes. An important component will be an understanding of the interactions between humans, human civilization, and the geologic process. Additionally, students will learn about geologic hazards and how they can be overcome or contained. Students will learn to integrate geological material into the broader world around them, and develop critical thinking and problem solving skills involving quantitative data from the natural sciences. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisite**: None

History – HIST

HIST 1311: World Civilizations, 1600 – Present (3,0) This course is a survey of the development of the major civilizations of the world from 1600 to the present. HIST 1311 stresses the dynamism and expansion of the West, the interpenetration of cultures in the modern era, and the resurgence of non-Western independence in the 20th century. **Prerequisite**: None

Mathematics – MATH

MATH 1311: Finite Mathematics for Students of Business (3,0) This course covers topics from the mathematics of finance that should be familiar to all students seeking careers in the business world. These include mathematics related to supply, demand and cost analysis; interest, annuity and investments; probability and decision making; and Markov processes. Students should acquire the necessary mathematical basis for further study in economics and finance. **Prerequisite:** The algebraic manipulation skill commensurate with that gained in the Preparation Year Program.

MATH 1312: Calculus for Students of Business (3,0) This course covers topics from calculus that should be particularly useful for students studying economics and finance. Such topics include regression analysis, mathematical modeling, rate of change, and marginal analysis from differential calculus. Topics covered from integral calculus include optimization and area calculations as they apply to average value, value of continuous income flows, coefficients of inequity, and consumer and producer surplus. Students should acquire the necessary mathematical knowledge and skills for further study in economics and finance. **Prerequisite:** MATH 1311: Finite Mathematics for Students of Business.

MATH 1313: Statistical Methods (3,0) Statistical Methods covers statistical models and methods of analyzing data. These include estimation, tests of significance, analysis of variance, linear regression, and correlation. Students will acquire the necessary statistical basis for using available information to make rational decisions **Prerequisite:** The algebraic manipulation skill commensurate with that gained in the Preparation Year Program.

MATH 1321: Pre-Calculus Mathematics (3,0) Pre-Calculus Mathematics covers those topics needed for successful completion of Calculus I. Such topics include modeling with functions: linear, quadratic, exponential, and logarithmic. In addition, trigonometric functions with the related laws and identities are covered in some detail. Students should acquire the necessary mathematical knowledge and skills for further studies in calculus and engineering. **Prerequisite:** The algebraic manipulation skill commensurate with that gained in the Preparation Year Program.

MATH 1422: Calculus I (3,1) Calculus I covers topics from differential calculus with an introduction to integration. Topics include limits of functions, concept of differentiation of one variable with rules for differentiation, and applications of derivatives involving related rates, optimization, and curve sketching. Integration is introduced and the Fundamental Theorem of Calculus is covered. Students should acquire the necessary mathematical knowledge and skills for further study in calculus and engineering. The course will be taught in the lecture format, one hour per class, three hours per week, with an additional one-hour problem-solving recitation. **Prerequisite:** MATH 1321: Pre-Calculus, or skills and knowledge thereof as measured by placement tests.

MATH 1423: Calculus II (3,1) Calculus II is the continuation of MATH 1422: Calculus I. It covers topics from integral calculus of one variable, infinite sequences and series, and vectors. Students continue to acquire the necessary mathematical knowledge and skills for further study in calculus and engineering. The course will be taught in the lecture format, one hour per class, three hours per week, with an additional one-hour problem-solving recitation. **Prerequisite:** MATH 1422: Calculus I.

MATH 1324: Calculus III (3,0) Calculus III is the continuation of MATH 1423: Calculus II and the final course in the pre-engineering calculus sequence. It covers topics from multivariable calculus including vector-valued functions, multiple integration, and vector analysis. Students complete their acquisition of the necessary mathematical knowledge and skills for further study in engineering. **Prerequisite:** MATH 1423: Calculus II

MATH 2331: Linear Algebra (3,0) Linear Algebra covers topics from linear algebra including vector spaces, linear transformations and matrices, matrix operations, and eigenvectors and eigenvalues. Students acquire mathematical knowledge and skills with matrices, linear systems, and vector spaces necessary for further study in engineering. The course will be taught in the lecture format, one hour per class, three classes per week. **Prerequisite:** MATH 1324: Calculus III

MATH 2332: Ordinary Differential Equations (3,0) This course covers topics involving single variable differential equations. These include methods for solving first and second order differential equations, Laplace Transforms, and Fourier Series and Transforms. Students acquire mathematical knowledge and skills to model and solve problems arising from engineering. The course will be taught in the lecture format. **Prerequisites:** MATH 1324: Calculus III and MATH 2331: Linear Algebra.

Physics – PHYS

PHYS 1411: Introductory Physics (3,1) PHYS 1411 will investigate the fundamental principles that underlie the behavior of the universe. The approach will be largely a conceptual one that leads to an understanding of physics rather than just the ability to solve mathematical problems that are examples of physics. Students will gain familiarity with the forces and laws of nature that govern the physical world, from the sub-atomic to astronomical levels. Importantly, students will be guided through concepts in physics that ultimately let them recognize important, practical applications in the everyday world of fundamental physical principles. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory. **Prerequisite:** Advanced high school mathematics. Successful completion of an introductory course in biology, geology, chemistry, or physics at the high school level is recommended.

PHYS 1421: Physics for Engineers I (3,1) PHYS 1421 is to create a base for a two-semester physics sequence to provide the additional physics required by engineering students prior to specialized courses in engineering physics applications. The approach, like that of the following semester PHYS 1422, will be largely a conceptual leading to an understanding of physics rather than just the ability to solve mathematical problems that are examples of physics. Students in this course will gain familiarity with single particle kinematics and dynamics, multi-particle systems, rotational motion, oscillations, waves and sound. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory that accompanies it **Prerequisites:** MATH 1321: Pre-Calculus

PHYS 1422: Physics for Engineers II (3,1) The objective of the course is to build upon the base offered in PHYS 1421, and provide the additional physics required by engineering students prior to specialized courses in engineering physics applications. The approach will be largely conceptual leading to an understanding of physics rather than just the ability to solve mathematical problems that are examples of physics. Students in this course will gain familiarity with electricity, magnetism, nuclear physics and how light interacts with matter. This course is in the format of a three-credit lecture session and a mandatory, separately scheduled one-credit laboratory that accompanies it. **Prerequisite:** PHYS 1421: Physics for Engineers I, MATH 1422: Calculus I.

Psychology – PSYC

PSYC 1311: Introduction to Psychology (3,0) This course is an introduction to fundamentals of psychology including an overview of the concepts and methods of such areas as perception, learning, motivation, memory, development, personality, abnormal, and social psychology. **Prerequisite**: None

Spanish – SPAN

SPAN 1311: Introduction to Spanish Language (3,0) This course introduces students to the pronunciation, basic comprehension, and communication of Spanish language through active class use of simple vocabulary, grammar, and syntax. It stresses oral proficiency, pronunciation, listening comprehension and grammatical accuracy. In addition, the students will acquire an initial understanding of cultural backgrounds of Spanish-speaking countries. . **Prerequisite**: None

Sustainability – SUST

SUST 1311: Introduction to Sustainability (3,0) This course is an introduction to fundamentals of sustainability including an overview of the concepts of such area to develop student's understanding of the interconnectedness of human and natural systems. The course also provides students the ability to freely explore how sustainability ideas can supplement existing values. **Prerequisite**: None

University Core – UNIV

UNIV 1211: Professional Development and Competencies (2,0) The objective of this course is to use basic skills of learning and time and apply these skills toward competencies related to the student's chosen field. Students are introduced to the opportunities, required skills, challenges, and ethics of their chosen field, as well as to the expectations of prospective employers and accrediting agencies (where applicable). **Prerequisite:** None

UNIV 1212: Critical Thinking and Problem Solving (2,0) This course covers basic topics involving critical thinking and problem solving. These include deductive and inductive reasoning, values and ethics, fallacy, and causality. The students will learn how to analyze and present valid arguments. **Prerequisite:** UNIV 1211: Professional Development and Competencies.

UNIV 1213: Leadership and Teamwork (2,0) The purpose of this interdisciplinary course is to introduce students to the characteristics of leadership. Students gain a broad understanding of the theoretical approaches to leadership and teamwork and the core concepts of contemporary leadership. Mastering the fundamental concepts increases the student's ability to apply these concepts to his or her own life experience. **Prerequisite:** UNIV 1211: Professional Development and Competencies, UNIV 1213: Critical Thinking and Problem Solving

COLLEGE OF ENGINEERING

College of Engineering
Office: Insert Building, Room
Phone: Insert Phone Number
FAX: Insert Fax Number
e-mail: Insert e-mail of Dean

_____, Ph. D., Dean

COLLEGE OVERVIEW

The College of Engineering accepts successful male students from the PMU Preparation Year Program or other qualified male students into degree programs in engineering.

Within the College of Engineering, the PMU Department of Interior Design provides knowledge and appropriate training for women to be creative and innovative designers.

While students completing engineering degrees at the PMU could certainly continue on to graduate studies, the main emphasis in the engineering programs is on the preparation of graduates for employment.

Vision and Mission

Vision

The College of Engineering at the PMU offers a unique and distinguished education that prepares future leaders and innovators in the engineering disciplines of civil, electrical, and mechanical engineering. The education process will explore innovative methodologies and technologies to achieve its objectives.

Mission

The PMU College of Engineering will educate tomorrow's engineering leaders and innovators, will create new knowledge, will provide a nurturing environment of team work and lifelong learning, and will positively impact the economic prosperity of the Kingdom of Saudi Arabia.

Degrees Offered

The College of Engineering offers the following degree programs:

Bachelor of Science in Civil Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Mechanical Engineering

Additionally, the College of Engineering offers Master of Science in Mechanical Engineering degree.

ADMISSIONS PROCESS AND REQUIREMENTS

Admission to studies in the departments of Civil, Electrical, and Mechanical Engineering is open to male students who have completed the PMU Preparation Year Program or who have met the university criteria for bypassing the program.

Required Courses in the Preparation Year Program

The PMU Preparation Year Program concentrates on English language, mathematics, and study skills. Within this program, the first semester math course, PRPM 0011: Introductory Algebra, is required of all students. However, during the second semester of mathematics, students have a choice of two tracks, depending on their desired major at the university.

Students seeking entrance to majors in Civil, Electrical, and Mechanical Engineering are required to take PRPM 0022: Pre-Calculus, during the second semester of the Preparation Year Program.

PERFORMANCE EXPECTATIONS

Required Grade Average - Civil, Electrical, and Mechanical Engineering

The College of Engineering provides for minimum standards of academic performance from its students. Using a 4.0 scale for course grades, the College of Engineering will require that students maintain minimum grades of:

2.0 in courses from the PMU Core Curriculum

2.0 in all degree-specific courses (courses from the Core Curriculum that engineering students must take beyond the minimum requirement)

2.25 in all courses required in the College of Engineering that are common to all engineering majors

2.5 in all courses within the major academic discipline

All PMU engineering majors are required to pass an internationally normed subject content exam.

A student who receives a D (1.0) or F in any course will be required to repeat the course and to achieve the required grade point score. In the case of an elective, another elective may be selected. These students will be required to participate in tutoring and remediation programs offered by the college faculty and the PMU Learning Resources Center.

Student Computing Requirements

<u>Civil, Electrical, and Mechanical Engineering</u>

Students within the College of Engineering are required to have personal laptop computers. They will have access to the university-wide technology-infused environment including wireless Internet access.

Students in the college also will have specific computing requirements that extend beyond the standard Microsoft Office applications of a typical laptop. Many of these specific computing requirements are available through the university's technology infrastructure to students' laptop computers. Others are provided through general access and specialized computer laboratories.

COMPONENTS OF DEGREE PROGRAMS

Each engineering degree program in the PMU College of Engineering consists of a 139 semester credit hours.

Majors in Civil, Electrical, and Mechanical Engineering

Each of the engineering degree programs offered within the College of Engineering consists of five components.

General Education Requirements. These requirements for the University Core Curriculum and College Core Curriculum include 60 credit hours of courses in the PMU core competencies, communication, Arabic Language and Islamic Studies, physical education, mathematics, laboratory science, and social and behavioral sciences.

Additional Core Curriculum Requirements. These requirements include courses in mathematics and laboratory science in addition to the Core Curriculum requirements. These requirements add 12 credit hours beyond the 60 hour minimum for a total of 72 hours from the Core Curriculum.

Specifically, engineering degree programs extend the PMU College Core requirement of six semester credit hours of mathematics to 14 hours, and specify that the courses will be:

MATH 1422: Calculus I
MATH 1423: Calculus II
MATH 1324: Calculus III
MATH 2332: Differential Equations

University Core Curriculum requires eight semester hours of Natural and Physical Science. Engineering degree programs extend the PMU College Core requirements in Natural and Physical Sciences from eight semester credit hours to 12 hours and specify that the courses will be:

CHEM 1421: Chemistry for Engineers I
PHYS 1421: Physics for Engineers I
PHYS 2422: Physics for Engineers II

College of Engineering Requirements. These requirements consist of following courses. They represent a base of knowledge that is presumed for all engineers. The courses within the College of Engineering that meet these requirements are designated with the prefix GEEN. These courses include the following:

GEEN 1211: Introduction to Engineering
GEEN 2311: Engineering Mechanics I: Statics (only for Civil and ME Departments)
GEEN 2211: Engineering Computing
GEEN 2313: Thermodynamics I (only for Civil and ME Departments)
GEEN 3314: Electric Circuits and Electronics (only for ME Department)
GEEN 4311: Engineering Economy
GEEN 3311: Introduction to Fluid Mechanics (only for Civil and ME Departments)
GEEN 3310: Applied Linear Algebra for Engineers (only for EE Department)

Degree Program Requirements. Each degree program has unique course requirements that apply to the degree major and that also differentiate the program from other majors within the college.

Electives. Each degree program identifies the available electives and any constraints that will apply to the selection and scheduling of electives.

Of the total 139 hours required for a bachelor's degree in engineering, If these, 91 credit hours are common to all three degrees.

Capstone Series – Civil, Electrical, and Mechanical Engineering

The PMU Core Curriculum includes a series of three required assessment courses. The series begins in the sophomore year with ASSE 2111: Learning Outcome Assessment I and continues in the junior year with ASSE 3211: Learning Outcome Assessment II. The series culminates in the senior year with a final capstone design course, ASSE 4311: Learning Outcome Assessment III.

The engineering programs in the College of Engineering treat the final capstone course as a group of three engineering courses that will integrate conceptual material and practical experience in an environment of professional grade engineering design. For each of the majors, the engineering capstone course group will be structured as follows:

Civil Engineering:

- GEEN 4311: Engineering Economy
- CVEN 4396: Civil Engineering Senior Design I
- CVEN 4397: Civil Engineering Senior Design II

Electrical Engineering:

- GEEN 4311: Engineering Economy
- EEEN 4393: Electrical Engineering Senior Design I
- EEEN 4394: Electrical engineering Senior Design II

Mechanical Engineering:

- GEEN 4311: Engineering Economy
- MEEN 3393: Machine Design
- MEEN 4396: Mechanical Engineering Senior Design I
- MEEN 4397: Mechanical Engineering Senior Design II

COURSES REQUIRED FOR MAJORS

Civil Engineering

The Bachelor of Science in Civil Engineering consists of four components totaling 139 credit hours:

Expanded PMU Core Curriculum. This expanded core curriculum consists of 72 hours of coursework as described on page 53.

The College of Engineering Requirements. These requirements consist of 19 hours of coursework contained in the seven courses designated with the GEEN prefix as described on page 53.

Degree Program Requirements. These requirements consist of 34 hours of course work in civil engineering as follows:

CVEN 2311: CAD for Civil Engineering
CVEN 3311: Structural Analysis
CVEN 3312: Reinforced Concrete Design
CVEN 3322: Materials in Civil Engineering
CVEN 3323: Engineering Geology
CVEN 3331: Environmental Engineering Fundamentals
CVEN 3332: Hydraulic Engineering
CVEN 3341: Engineering Measurement
CVEN 3343: Engineering Probability and Statistics
CVEN 3344: Sustainable Engineering
CVEN 4313: Design of Steel Structures
CVEN 4314: Construction Management
CVEN 4323: Introduction to Geotechnical Engineering
CVEN 4342: Transportation Engineering
CVEN 4396: Civil engineering Senior Design I
CVEN 4397: Civil engineering Senior Design II

Degree Electives: The Civil Engineering degree program requires six semester credit hours of electives to be taken from five 4000 level courses. These electives can be chosen from among the following four courses:

CVEN 4324: Foundation Analysis and Design
CVEN 4333: Water and Wastewater Treatment
CVEN 4334: Air Pollution and Control

Electrical Engineering

The Bachelor of Science in Electrical Engineering consists of four components totaling 139 credit hours:

Expanded PMU Core Curriculum. This expanded core curriculum consists of 72 hours of coursework as described on page 53.

The College of Engineering Requirements. These requirements consist of 19 hours of coursework contained in the seven courses designated with the GEEN prefix as described on page 53.

Degree Program Requirements. These requirements consist of 39 hours of course work in electrical engineering as follows:

EEEN 2411: Circuits I
EEEN 2312: Circuits II
EEEN 3331: Digital Systems

EEEN 3341: Signals and Systems
EEEN 3361: Electromagnetic Fields and Waves
EEEN 3391: Probability and Random Signal Analysis
EEEN 3392: Advanced Applied Mathematics
EEEN 3421: Electronics I
EEEN 3422: Electronics II
EEEN 3432: Microcontroller Systems
EEEN 4393: EE Senior Design I
EEEN 4394: EE Senior Design II
EEEN 4423: Sensors and Instrumentation
EEEN 4424: Power Electronics
EEEN 4451: Automatic Control Systems

Degree Electives: The Electrical Engineering Degree Program requires nine semester credit hours of electives to be taken from six 4000 level courses composed of two options, in Electrical Power Systems and in Telecommunications Systems.

The Electrical Power Systems Option consists of three courses:

EEEN 3461: Electric Machinery
EEEN 4371: Electric Power Systems
EEEN 4372: Electric Power Transmission and Distribution

The Telecommunications Systems Option consists of three courses:

EEEN 4341: Communication Systems
EEEN 4342: Digital Communication Systems
EEEN 4343: Wireless Communication Systems

Mechanical Engineering

The Bachelor of Science in Mechanical Engineering consists of four components totaling 140 credit hours:

Expanded PMU Core Curriculum. This expanded core curriculum consists of 72 hours of coursework as described on page 53.

The College of Engineering Requirements. These requirements consist of 19 hours of coursework contained in the seven courses designated with the GEEN prefix as described on page 53.

Degree Program Requirements. These requirements consist of 40 hours of course work in mechanical engineering as follows:

MEEN 2312: Statics and Dynamics of Rigid Bodies II
MEEN 2311: Materials Engineering
MEEN 2312: Engineering Mechanics II: Dynamics
MEEN 2313: Solids Mechanics
MEEN 3111: Thermofluids & Energy Lab
MEEN 3101: Machine shop Practice and Safety
MEEN 3311: Manufacturing Processes
MEEN 3322: Thermodynamics II
MEEN 3432: Computational Methods
MEEN 3333: Heat Transfer
MEEN 3391: Design of Mechanisms
MEEN 3394: Computer Aided Design

MEEN 3395: Mechanical Vibrations
MEEN 4392: Feedback Control
MEEN 4393: Machine Design
MEEN 4311: Principles of Heating, Ventilating, and Air Conditioning (HVAC)
MEEN 4322: Power Generation
MEEN 4396: Mechanical engineering Senior Design I
MEEN 4397: Mechanical engineering Senior Design II
MEEN 4394: Advanced Control Systems

Degree Electives: The Mechanical Engineering Degree Program requires six semester credit hours of electives to be selected from eight 4000 level courses within the department. The eight 4000 level courses are:

MEEN 4312: Fluid Mechanics
MEEN 4315: Principles of Building Energy Analysis
MEEN 4331: Internal Combustion Engines
MEEN 4332: Turbomachinery
MEEN 4341: Corrosion Engineering
MEEN 4392: Advanced Control Systems
MEEN 4344: Materials in Design
MEEN 4351: Intermediate Dynamics

COURSE SEQUENCE FOR MAJORS

Civil Engineering

Total Semester Credit Hours: 139

Freshman Program

First Semester *Hours*

ALIS 1211: Arabic Language / Islamic Studies....2
PHED 1111: Physical Education....1
COMM 1311: Written Communication....3
UNIV 1211: Professional Development and Competencies....2
MATH 1422: Calculus I....4
CHEM 1421: Chemistry for Engineers I....4
GEEN 1211: Introduction to Engineering....2
Total Hours: 18

Second Semester *Hours*

PHED: 1112: Healthy Behaviors and Management....1
COMM 1312: Writing and Research....3
UNIV 1212: Critical Thinking and Problem Solving....2
MATH 1423: Calculus II....4
PHYS 1421: Physics for Engineers I....4
GEEN 2311: Engineering Mechanics I: Statics....3
Total Hours: 17

Sophomore Program

First Semester *Hours*

COMM 2311: Oral Communication....3
UNIV 1213: Leadership And Teamwork....2
MATH 1324: Calculus III....3
PHYS 1422: Physics for Engineers II....4
GEEN 2211: Engineering Computing....2
ASSE 2111: Learning Outcome Assessment I....1
MEEN 2312: Engineering Mechanics II: Dynamics....3
Total Hours: 18

Second Semester *Hours*

CVEN 2311: CAD for Civil Engineering....3
GEEN 2313: Thermodynamics I....3
MATH 2332: Differential Equations....3
MEEN 2313: Solid Mechanics....3
COMM 2312: Technical & Professional Communication....3
ALIS 1212: The Social System in Islam....2
Total Hours: 17

Junior Program

First Semester *Hours*

ASSE 3211: Learning Outcome Assessment II....2
GEEN 3311: Introduction to Fluid Mechanics....3
CVEN 3322: Materials in Civil Engineering....3
CVEN 3311: Structural Analysis....3
CVEN 3323: Engineering Geology....3

CVEN 3341: Engineering Measurement 3
Total Hours:.....17

Second Semester *Hours*

CVEN 3331: Environmental Engineering Fundamentals.....3
CVEN 3332: Hydraulic Engineering.....3
CVEN 3343: Engineering Probability & Statistics.....3
CVEN 3312: Reinforced Concrete Design.....3
CVEN 3344: Sustainable Engineering.....3
ALIS 3212: Linguistic Communication Skills (Arabic).....2
Total Hours:..... 17

Senior Program

First Semester *Hours*

CVEN 4313: Design of Steel Structures.....3
CVEN 4323: Introduction to Geotechnical Engineering.....3
CVEN 4396: Civil Engineering Senior Design I.....3
GEEN 4311: Engineering Economy.....3
CVEN 4342: Transportation Engineering.....3
CVEN XXXX: CE Tech. Elective I.....3
Total Hours:..... 18

Second Semester *Hours*

ALIS 2212: The Biography of Prophet Mohammad 2
CVEN 4314: Construction Management.....3
CVEN 4397 Civil Engineering Senior Design II 3
CVEN XXXX: CE Tech. Elective II ** 3
Social Science: Social Science Elective* 3
Total Hours:..... 14

**Select any Social Science course from the College Core Curriculum.*

***Select from CVEN 4324: Foundation Analysis and Design, CVEN 4334: Air Pollution and Control, CVEN 4333: Water and Wastewater Treatment*

Electrical Engineering

Total Semester Credit Hours: 139

Freshman Program

First Semester *Hours*

ALIS 1211: Introduction to Islamic culture.....2
COMM 1311: Written Communications.....3
UNIV 1211: Professional Development and Competencies.....2
MATH 1422: Calculus I.....4
PHYS 1421: Physics for Engineers I.....4
GEEN 1211: Introduction to Engineering 2
Total Hours:..... 17

Second Semester *Hours*

Social Science: Elective* 3

PHED 1111: Active Living Lifestyle 1
COMM 1312: Writing and Research 3
UNIV 1212: Critical Thinking and Problem Solving 2
MATH 1423: Calculus II 4
PHYS 1422: Physics for Engineers II.....4
Total Hours:..... 17

**Select any Social Science course from the College Core Curriculum*

Sophomore Program

First Semester *Hours*

ASSE 2111: Learning Outcome Assessment I.....1
COMM 2311: Oral Communication 3
EEEN 2411: Circuits I 4
MATH 1324: Calculus III 3
CHEM 1421: Chemistry for Engineers I 4
ALIS 1212: The Social System in Islam.....2
Total Hours:..... 17

Second Semester *Hours*

GEEN 2211: Engineering Computing 2
COMM 2312: Technical and Professional Communication 3
UNIV 1213: Leadership & Teamwork.....2
GEEN 2310: Applied Linear Algebra for Engineers 3
MATH 2332: Ordinary Differential Equations 3
EEEN 2312: Circuits II.....3
Total Hours:..... 16

Junior Program

First Semester *Hours*

ASSE 3211: Learning Outcome Assessment II 2
EEEN 3392: Advanced Applied Mathematics.....3
EEEN 3361: Electromagnetic Fields and Waves 3
EEEN 3421: Electronics I.....4
EEEN 3331: Digital Systems.....3
ALIS 2211: Linguistic Communication Skills (Arabic) 2
Total Hours:..... 17

Second Semester *Hours*

EEEN 3422: Electronics II 4
EEEN 3432: Microcontroller Systems.....4
EEEN 3341: Signals and Systems 3
EEEN 3461: Electric Machinery 4
EEEN 3391: Probability and Random Signal Analysis 3
Total Hours:..... 18

Senior Program

First Semester *Hours*

EEEN 4440: Communication Systems 4

EEEN 4393: Electrical Engineering Senior Design I 3
EEEN 4423: Sensors and Instrumentation.....4
EEEN 4XXX: Technical Elective I.....3
GEEN 4311: Engineering Economy 3
Total Hours:..... 17

Second Semester	*Hours*
EEEN 4394: Electrical Engineering Senior Design II	3
EEEN 4451: Automatic Control Systems	4
EEEN 4XXX: Technical Elective II	3
EEEN 4424: Power Electronics	4
PHED 1112: Healthy Behaviors and Management	2
ALIS 2212: The Biography of Prophet Mohammad	1
Total Hours:	**17**

**Select any Social Science course from the College Core Curriculum.*

***Select all electives from one group:*

<u>Group 1</u> - Electrical Power Systems: MEEN 3333: Heat Transfer, EEEN 4371: Electric Power Systems ,and EEEN 4372: Electric Power Transmission and Distribution

<u>Group II</u> - Telecommunications Systems: EEEN 4341: Communication Systems, EEEN 4342: Digital Communication Systems, or EEEN 4343: Wireless Communication Systems

Mechanical Engineering

Total Semester Credit Hours: 139

Freshman Program

First Semester *Hours*

ALIS 1211: Introduction to Islamic culture.....2
PHED 1111: Active Living Lifestyle.....1
COMM 1311: Written Communication.....3
UNIV 1211: Professional Development and Competencies.....2
MATH 1422: Calculus I.....4
PHYS 1421: Physics for Engineers I.....4
GEEN 1211: Introduction to Engineering.....2
Total Hours:..... 18

Second Semester *Hours*

PHED 1112: Healthy Behaviors and management.....1
COMM 1312: Writing and Research.....3
UNIV 1212: Critical Thinking and Problem Solving.....2
MATH 1423: Calculus II.....4
CHEM 1421: Chemistry for Engineers I.....4
GEEN 2311: Engineering Mechanics I: Statics.....3
Total Hours:..... 17

Sophomore Program

First Semester *Hours*

ASSE 2111: Learning Outcome Assessment I.....1
COMM 2311: Oral Communications.....3
UNIV 1213: Leadership and Teamwork.....2
MATH 1324: Calculus III.....3
PHYS 1422: Physics for Engineers II.....4
GEEN 2211: Engineering Computing.....2
MEEN 2312: Engineering Mechanics II: Dynamics.....3
Total Hours:..... 18

Second Semester *Hours*

MEEN 2311: Materials Engineering.....3
GEEN 2313: Thermodynamics I.....3
MATH 2332: Ordinary Differential Equations.....3
MEEN 2313: Solid Mechanics.....3
ALIS 1212: The Social System in Islam.....2
COMM 2312: Technical and Professional Communication.....3
Total Hours:..... 17

Junior Program

First Semester *Hours*

GEEN 3314: Electric Circuits and Electronics 3
GEEN 3311: Introduction to Fluid Mechanics 3
MEEN 3111: Manufacturing Processes 3
MEEN 3101: Machine Shop Practice and Safety 1
MEEN 3322: Thermodynamics II.....3
MEEN 3391: Design Of Mechanisms 3
ALIS 2211: Linguistic Communication Skills (Arabic) 2
Total Hours: 18

Second Semester *Hours*

MEEN 3394: Computer Aided Design / Manufacturing 3
ASSE 3211: Learning Outcome Assessment II 2
MEEN 3432: Computational Methods 4
MEEN 3333: Heat Transfer 3
MEEN 3395: Mechanical Vibrations.....3
MEEN 3111: Thermofluids & Energy Lab 1
Total Hours: 16

Senior Program

First Semester *Hours*

MEEN 4392: Feedback Control.....3
MEEN 4393: Machine Design.....3
MEEN 4396: Mechanical Engineering Senior Design I.....3
GEEN 4311: Engineering Economy 3
MEEN 4322: Power Generation 3
MEEN XXXX: ME Tech. Elective I** 3
Total Hours: 18

***Select from MEEN 4312: Fluid Mechanics, MEEN 4315: Building Energy Analysis, MEEN 4331: Internal Combustion Engines, MEEN 4332: Turbomachinery, MEEN 4341: Corrosion Engineering, MEEN: 4344 Materials in Design, MEEN 4351: Intermediate Dynamics, or MEEN 4392: Advanced Control Systems.*

Second Semester *Hours*

ALIS 2212: The Biography of Prophet Mohammad 2
MEEN 4311: Principles of HVAC 3
MEEN 4397: Mechanical Engineering Senior Design II 3
Social Science: Social Science Elective* 3
MEEN XXXX: ME Tech. Elective II** 3
Total Hours: 14

** Select any Social Science course from the College Core Curriculum*

***Select from MEEN 4312: Fluid Mechanics, MEEN 4315: Principles of Building Energy Analysis, MEEN 4331: Internal Combustion Engines, MEEN 4332: Turbomachinery, MEEN 4341: Corrosion Engineering, MEEN: 4344 Materials in Design, MEEN 4351: Intermediate Dynamics, or MEEN 4394: Advanced Control Systems.*

UNDERGRADUATE COURSES OFFERED BY THE COLLEGE OF ENGINEERING

Assessment – ASSE

Civil, Electrical and Mechanical Engineering

ASSE 4311: Learning Outcome Assessment III (3,0) The Capstone course in the PMU Civil, Electrical, and Mechanical Engineering programs requires students to complete a design project from project identification through problem statement, conceptual design, project analysis, final design, report preparation, and a final oral presentation. Student work in groups of three (ideally, one student from each major) and apply the knowledge they have acquired to demonstrate their mastery of the discipline through a well-executed project. **Prerequisite**: Academic standing as a second semester senior

Civil Engineering – CVEN

CVEN 2311: CAD for Civil Engineering (2,3) This course provides students with a broad introduction into 2-dimensional and 3-dimensional Computer-Aided Design (CAD) and modeling with a focus on construction- and civil-specific applications, including Building Information Modeling (BIM). Students will learn how to use industry-leading CAD software programs (Autodesk CAD, model construction projects, and then create and distribute basic, industry-standard Civil drawings. Understanding of the power and precision of computer-aided modeling and drafting; Ability to construct accurate 2D geometry as well as complex 3D shapes and surface objects; Ability to create 2D representations of 3D objects as plan view, elevations and sections; Ability to assemble these drawings in industry-standard plan form and produce plotted hardcopies ready for distribution; Awareness of architectural drafting with a focus on industry standards. **Prerequisite:** MATH 1324: Calculus III

CVEN 3311: Structural Analysis (3,0) This course is designed to develop students' ability to design and analyze basic civil engineering structure systems including beams, girders, trusses, and frames. The course introduces students to the various types of structural forms and loads, reaction forces, shear and bending moment diagram for statically determinate structure systems. Discussions on the analysis of statically indeterminate structures include the force method, the slope-deflection method, and the moment distribution method. An introduction to the analysis of structures using the stiffness method is made. Application of the stiffness method and matrix algebra to solve structural problems in beams, frames and trusses is addressed at the end of the course. **Prerequisite:** MEEN 2313: Solid Mechanics

CVEN 3312: Reinforced Concrete Design (3,0) This course introduces students to the theory of reinforced concrete and basic analysis techniques required in the codified design of civil engineering structural elements including beams, slabs, columns, and footings. The students learn the properties and materials of reinforced concrete, code and nomenclature used in current building code requirements, analyses and design of beams, shear and torsional strength in beams, bond and anchorage of reinforcement, crack and deflection of beams, and design of short and slender columns. **Prerequisite:** CVEN 3311: Structural Analysis

CVEN 3322: Materials in Civil Engineering (2,3) This course develops a good understanding of appropriate mechanical, physical, chemical and electro-chemical properties of civil engineering materials, including concrete and reinforced concrete, metals and alloys, polymeric materials, timber, asphalt, and advanced composite materials. The course is conducted in a combination of classroom presentations and discussions and hands-on material laboratory sessions. The weekly laboratory sessions complement lectures and provide hands-on experience

with state-of-the-art mechanical tests on concrete, metals, polymers, fiber reinforced concrete, and wood. The subjects covered in this course are: terms and concepts in the field of materials engineering, materials structure and correlation with construction materials, corrosion and environmental degradation effects of materials, and common civil engineering materials including soils, aggregates, cements, asphalt and asphalt mixture, steel, alloys, plastics, wood and composite materials. **Prerequisite:** MEEN 2313: Solid Mechanics

CVEN 3323: Engineering Geology (3,0) This course is designed to provide students the understanding of the principles of geology with an emphasis on civil engineering applications. The course covers subjects such as rock geology, rock degradation, sediment erosion, hydrologic cycles, earthquake, slope stability, principles and problems in river and groundwater contamination. While general geology is the focus, emphasis is placed on Middle Eastern geology where appropriate. **Prerequisite:** GEEN 2313: Thermodynamics Dynamics I

CVEN 3331: Environmental Engineering Fundamentals (3,0) This course introduces students to the engineering aspects of environmental systems. It includes such topics as mass balance, water quality management, water supply engineering, sources of atmospheric emissions, air pollution control and modeling, solid and hazardous waste management, environmental impact assessment, global climatic changes, and health risk assessment. **Prerequisite:** GEEN 3311: Intro to Fluid Mechanics

CVEN 3332: Hydraulic Engineering (2,3) This course is built on the principles and concepts of the prerequisite GEEN 3311: Introduction to Fluid Mechanics to provide students with the knowledge to address common hydrology and hydraulic engineering problems. Students develop a depth of understanding in hydrologic cycle, surface runoff, stream flow, groundwater, well hydraulic, flows in pipes and piping systems, open channel hydraulics, dams and reservoirs, hydraulic structures and machinery, and flood damage reduction. **Prerequisite:** GEEN 3311: Intro to Fluid Mechanics

CVEN 3341: Engineering Measurements (2,3) This course is designed to introduce students to the fundamentals and modern practices of surveying. The course is consisted of a series of lectures on the principles and methods for civil engineering measurements and a number of laboratory sessions on the field procedures of surveying. The course provides students with in-depth knowledge in horizontal measurement, vertical measurement, surveying instrumentation, differential leveling, directional measurement, horizontal control survey, mapping, and geographic information system. **Prerequisite:** CVEN 2311: CAD for Civil Engineering

CVEN 3343: Engineering Probability and Statistics (3,0) This is an introductory course in applied probability and statistics. The course is designed to provide students with probability concepts and problem solving skills that are useful for civil engineers. The course is conducted in a combination of classroom presentations/discussions (two hours per week) and hands-on computer simulation laboratory sessions (three hours per week). Subjects to be discussed in this course include data descriptions and summary, discrete and continuous random variable, discrete probability functions, continuous probability functions, conditional probability, sampling distribution of the mean, confidence interval, experimental designs, hypothesis testing, linear and multi-regression models. **Prerequisite:** MATH 1324: Calculus III

CVEN 3344: Sustainable Engineering (3,0) Good engineering solutions require consideration of ethical, environmental and sustainable issues. In this course students are introduced to various topics including: engineering ethics; sustainability, including design and manufacture; life cycle assessments; and environmental impact assessments. It also offers a comprehensive look at sustainable engineering design for buildings and infrastructure, taking into account the changes taking place in environmental operating conditions. **Prerequisite:** CVEN 3322: Materials in Civil Engineering

CVEN 4313: Design of Steel Structures (3,0) This course teaches students the design of structural steel members of frames, trusses, and other structures. It is a study of the design of structural steel, analysis and selection of structural steel members according to specifications. Emphasis is on understanding the basic behavior of structures. This course relates design specifications to structural behavior and shows students how specifications and codes are used in the solution of practical design problems. Topics include specifications, loads, methods of design, analysis and design of tension and compression members, design of beams and columns, bolt connections and rivets, welding and building connections, composite beams and columns, and design of steel buildings. **Prerequisites:** CVEN 3312: Reinforced Concrete Design, MEEN 2313: Solid Mechanics

CVEN 4314: Construction Management (3,0) This course is designed to familiarize students with concepts and methods employed in construction project management. Students learn the principles of project management, cost estimation, activities scheduling, cost and schedule control, contract administration, project progress measurement, and construction quality control. The course helps students develop skills in critical thinking, communication, teamwork, logical analysis, engineering ethics, and project management via assigned group projects. A strong emphasis is placed on learning how to effectively apply relevant computer software in construction project management. **Prerequisite:** GEEN 4311: Engineering Economy

CVEN 4323: Introduction to Geotechnical Engineering (2,3) This is an introductory course to geotechnical engineering. It provides students with knowledge in the stresses and strain of sand, shear strength of clay, critical state theory, soil bearing capacity for shallow foundations, and ultimate soil-bearing capacity for shallow foundations. Students also learn the effect of groundwater table, factor of safety, general bearing capacity equation, foundations subjected to one or two-way eccentricity, bearing capacity of foundations on slope, and bearing capacity of sand based on settlement. The course is conducted in a combination of classroom presentations/ discussions (three hours per week) and hands-on soil and geotechnical laboratory sessions (three hours per week). The weekly laboratory sessions complement lectures and provide hands-on experience with state-of-the-art mechanical tests on soil and foundations. **Prerequisites:** CVEN 3322: Materials in Civil Engineering, CVEN 3323: Engineering Geology

CVEN 4324: Foundation Analysis and Design (3,0) This course is built on students' previously accumulated knowledge in soil mechanics, engineering materials, and geotechnical engineering to understand the most important design aspects encountered in foundation engineering. The course includes critical review of the geotechnical properties of soil, lateral earth pressure, procedures for estimation of bearing capacity and shallow foundation, sheet piled walls, braced cuts, pile foundations, drilled-shaft foundations, foundations on difficult soils, and other aspects of geotechnical design. **Prerequisite:** CVEN 4323: Introduction to Geotechnical Engineering

CVEN 4333: Water and Wastewater Treatment (3,0) This course is built on the knowledge of hydraulic and environmental engineering students previously acquired to examine the various water issues and the causes and solutions to these problems. Students are expected to develop a solid understanding in the engineered treatment of water and wastewater. The course emphasizes on the application of scientific methods to problems associated with the development, movement, and treatment of water and wastewater. Students build necessary skills to apply engineering concepts and general knowledge in the area of civil and environmental engineering to the more complicated contemporary infra-structural civil engineering issues. This course discusses topics of water use, drinking water quality standards, water supply and use, water treatment systems, wastewater generation and sewer systems, design of sanitary sewers, wastewater treatment processes, principles of coagulation, flocculation, sedimentation, filtration, biological treatment, solids handling, disinfection, and other advanced wastewater treatment processes. The course is conducted in a combination of classroom presentations/discussions (three hours per week) and several field trips to local water and wastewater treatment facilities. The field trips complement lectures and provide hands-on experience with state-of-the-art water treatment operations. **Prerequisites:** CVEN 3331: Environmental Engineering Fundamentals, CVEN 3332: Hydraulic Engineering

CVEN 4334: Air Pollution and Control (3,0) This course introduces students to the sources and origins, fate and transport, health and environmental effects, abatement and control of air pollutants that have dramatically impacted the quality of human health and the environment since the industrial revolution in the 19th century. Students develop the basic concepts of air pollution effects on human health and the ecosystem health and understand the theories and practices in air pollution control. They understand the philosophy and standards for regulating air emissions. Students develop skills in the use of mathematical models and computer software for estimating the air pollution effects. Topics include sources and origins of air pollutants, air pollution effects, air quality standards, air pollution meteorology, pollutant fate and transport, control of airborne particulate matter, control of gaseous pollutants, atmospheric photochemical reactions, mobile sources, and global climate changes. Regulatory models currently available for estimating pollutant emissions and air concentrations is presented and discussed in the class. **Prerequisite:** CVEN 3331: Environmental Engineering Fundamentals

CVEN 4342: Transportation Engineering (3,0) This is an introductory course to transportation engineering. Students are expected to acquire a basic understanding of the methods and processes employed in design, planning, and management of transportation systems. The subjects to be discussed in the course include elementary considerations in transportation economics, interdependence of land use and transportation, vehicle and human characteristics, traffic flow characteristics, basic road design considerations, highway capacity design, intersection control and design, public and urban transportation, road safety and road safety audits, and travel-demand forecasting. **Prerequisite:** CVEN 3341: Engineering Measurements

CVEN 4396: Civil Engineering Senior Design I (2,3) Senior design project (SDP), also known as capstone design course, is a series of courses conducting in two semesters, SDP I and II. The course requires students to complete a project using the knowledge they have acquired from their undergraduate program. The students work in groups of three to four under the supervision of faculty member(s). Where appropriate, they also work with representatives of companies in the region to research and identify a problem to solve. Students identify tasks to be implemented and form their conceptual design. They shall raise questions and problems through group discussion and learn to clearly and precisely formulate answers. Students gather and assess relevant information, so that they can address the project objectives. They learn how to think within alternative systems of thought and communicate effectively with others to arrive at solutions to the problems. At the end of the course, students complete a final project report and make an oral presentation. **Prerequisites:** CVEN 3301: Internship, CVEN 3312: Reinforced Concrete Design, Department approval

CVEN 4397: Civil Engineering Senior Design II (2,3) The course requires students to continue completing design project performed during Senior Design Project I (SDP I). The students are expected to retain group formation as was in the SDP I, and should there be new team arrangement it needs approval from respected advisor and/or course coordinator. In this course stage, students are encouraged to solicit professional engineers external to the department in the region to participate in the design development, i.e. discuss and to solve the design project. Students are expected to improve their design work and documentation, and they learn how to think within alternative systems of thought and communicate effectively with others to arrive at solutions to the problems. At the end of the course, students complete a final project report and make an oral presentation. **Prerequisites:** CVEN 4396: Senior Design Project I, GEEN 4311: Engineering Economy

Electrical Engineering – EEEN

EEEN 2411: Circuits I (3,3) This course covers important theory in DC circuits analysis. Topics include a review of the solution of simultaneous equations; Kirchoff's Current and Voltage Laws; nodal and mesh circuit analysis; superposition; source transformations; Thevenin and Norton Equivalent circuits; ideal op-amps; and RC, RL, and RLC circuits. This course also has a laboratory component. Topics include basic bread-boarding techniques and circuit construction; use of multimeters, oscilloscopes, power supplies, and function generators; DC voltage and current measurement techniques; troubleshooting techniques; and comparison of experimental and simulated circuits. **Prerequisites:** MATH 1323: Calculus II, PHYS 1422: Physics for Engineers II

EEEN 2312: Circuits II (3,0) Topics include a review of DC and AC circuit analysis techniques (covered in EEEN 2411: Circuits I).; complex numbers and phasors; use of phasors in the analysis of AC circuits; AC power concepts; polyphase circuits; magnetically coupled circuits; applications of Laplace and Fourier transforms in circuit analysis; s-domain circuit analysis; Bode plots; and filters. **Prerequisite:** EEEN 2411: Circuits I

EEEN 3331: Digital Systems - Also listed as COEN 3323: Digital Systems (2,3) This course presents students with knowledge and design applications in the field of Digital Systems. Students are led from the basics of Boolean algebra and logic gates through increasing understanding to the design of logic circuits. **Prerequisite:** EEEN 2411: Circuits I

EEEN3341: Signals and Systems (3,0) This course teaches the analysis and design of electrical circuits, devices, and systems. Students are introduced to types of signals, types of systems, the properties of systems, and convolution. Fourier series, transforms, and applications are covered. Laplace transforms and applications are covered. State variable techniques and z-transforms are taught. Problems are presented to help students identify real-life problems and formulate solutions using the skills developed in the course. **Prerequisites:** EEEN 2312: Circuits II, EEEN 3392: Applied Advanced Math

EEEN 3361: Electromagnetic Fields and Waves (3,0) This course constitutes an overview of the subject of electromagnetic fields: performing their analysis, acquiring and understanding of their underlying principles, and understanding the components of identifying and solving electric and magnetic field problems. The course progresses from identification to understanding through progressively modeling and simulating fields and waves as students learn to simulate and solve electromagnetic problems. **Prerequisite:** EEEN 2312: Circuits II

EEEN3391: Probability and Random Signal Analysis (3,0) In this course students acquire knowledge of the applied mathematics involved and develop skills in working with random signals and systems. Students are led from the basics of probability theory, random variables, and statistics through increasing understanding to the analysis of random signals and stochastic processes occurring in electrical engineering applications. **Prerequisites:** EEEN 2312: Circuits II, EEEN 3392: Advanced Applied Math

EEEN 3392: Advanced Applied Mathematics (3,0) In this course students acquire knowledge of the applied mathematics involved and develop skills in working with mathematical modeling and analysis of linear deterministic systems. Students are led from the basics of applied mathematics through increasing understanding to the modeling and analysis of linear systems occurring in electrical engineering applications. **Prerequisites:** GEEN2310: Applied Linear Algebra for Engineers, MATH 2332:Differential Equations

EEEN 3421: Electronics I (3,3) This course is the first of two courses in the use of electronic devices in analog and digital circuits. The lecture component covers device physics and modeling of op-amps, diodes, FETs, and BJTs; single and multi-stage amplifiers; differential amplifiers; feedback; frequency response; Bode plots. Laboratory component covers generation and acquisition of signals; current, voltage, and impedance measurements; transfer function measurement; and spectrum measurements and analysis. **Prerequisite:** EEEN 2312: Circuits II

EEEN 3422: Electronics II (3,3) This course is the second of two courses in the use of electronic devices in analog and digital circuits. Lecture component covers analysis and design of operational amplifier circuits. D/A and A/D conversion. CMOS logic circuits, filters, oscillators and multivibrator circuits, power amplifiers, and pulse and switching circuits. Laboratory component covers the design and analysis of electronic circuits for digital and analog applications to a set of prescribed criteria. **Prerequisite:** EEEN 3421: Electronics I

EEEN 3432: Microcontroller Systems (3,3) In this course, students learn the components of microprocessor/microcontroller-based and learn to design and assemble microprocessor/ microcontroller-based systems with applications to real-world engineering environments. Instruction covers microprocessor architecture and assembly language programming, hardware-software interactions, programming techniques, and control of real-time hardware. Students are led to consider the leadership role and societal responsibilities inherent in a professional, ethical, engineering approach to use of microprocessor systems. **Prerequisites:** EEEN 3331: Digital Systems, GEEN 2211: Engineering Computing

EEEN 4342: Digital Communication Systems (3,0) This course constitutes an overview of the essentials of digital communications and practice in analyzing, problem solving, and designing systems with the use of computer simulation. Students are introduced to basic underlying theory and are led through increasing understanding for analysis and design skills necessary to the field. Probability and signal processing are utilized in problem solving. Digital modulation, error coding techniques, and system modeling are introduced. Computer simulation as a tool is emphasized. **Prerequisite:** EEEN 4440: Communication Systems

EEEN 4343: Wireless Communication Systems (3,0) This course presents an overview of wireless communications development, its practices, technologies, and current issues. Students

design, study, and research the operation of wireless systems. System architecture, performance, modulation techniques, encoding, spread spectrum, coding and error control, networking and wireless LANS are studied. **Prerequisite:** EEEN 4440: Communication Systems

EEEN 4393: EE Senior Design I (3,0) In this course, students learn the importance of the design process in engineering. The design process is introduced and is taught through its components. Students make use of the design process to define and solve real-world engineering problems. Skills developed and used in the class include describing the design process for both product and system development, writing design specifications for problems, developing a project plan, applying concept generation, applying decision making tools, use of the Quality Function Deployment process, recognizing and discussing ethical issues, and developing an understanding of the role of professional codes and standards and their part in product safety, quality, and reliability. **Prerequisites:** EEEN 3432: Microcontroller Systems, EEEN 3301 Internship; **Corequisites:** EEEN 4440: Communication Systems, EEEN4423: Sensors and Instrumentation

EEEN 4394: EE Senior Design II (3,0) The course requires students to complete a project using the knowledge they have acquired from their undergraduate program. The students work in groups of three under the supervision of a faculty member. Where appropriate, they also work with representatives of companies in the region to research and identify a problem to solve. Students identify tasks to be implemented and form their conceptual design. They shall raise questions and problems through group discussion and learn to clearly and precisely formulate answers. Students gather and assess relevant information, so that they can address the project objectives. They learn how to think within alternative systems of thought and communicate effectively with others to arrive at solutions to the problems. At the end of the course, students complete a final project report and make an oral presentation. **Prerequisite:** EEEN 4393 EE senior Design I

EEEN 4423: Sensors and Instrumentation (3,3) Lecture component covers electronic

instrumentation systems, measurement errors and their minimization. Fundamentals of sensor technologies, their operation characteristics and applications such as temperature, light/ radiation, pressure, humidity, strain and motion. Design of measurement systems including sensor selection and signal conditioning circuits. Measurement errors and calibration. The Lab component covers sensors characterization experiments, data acquisition, processing and analysis using NI Labview program. **Prerequisite:** EEEN 3422: Electronics II

EEEN 4424: Power Electronics (3,3) This course comprising lectures and lab experiments. The lecture component covers power electronics devices such as, diodes, transistors, and silicon controlled rectifier (SCR). Power electronics converters are also covered in detail as such as AC/DC, DC/AC and DC/DC converters in single and three phase circuits. Circuits' designs and simulation are involved in different aspects of the course. Laboratory component covers the conduct of experiments with converters and compare the results with theoretical concepts and simulations. **Prerequisite:** EEEN 3422: Electronics II

EEEN 4440: Communication Systems (3,3) This course constitutes and overview and practice in the field of telecommunications theory. Topics include an introduction, signals and signal space, analysis and transmission of signals, amplitude modulations and demodulations, angle modulation and demodulation, sampling and analog-to-digital conversion, principles of digital data transmission, introduction to information theory, and error correcting codes. **Prerequisites:** EEEN 3341: Signals and Systems, EEEN 3391: Probability and Ransom Signal Analysis

EEEN 4451: Automatic Control Systems (3,3) This course presents students with knowledge and design applications in the field of Automatic Control Systems. Students are introduced to automatic control and the components of analysis. The course advances to mathematical modeling of systems and consideration of applications in a global context. **Prerequisite:** EEEN 3341: Signals and Systems

EEEN 3461: Electric Machinery (3,3) In this course, students learn the basic concepts about magnetic field and the reluctance of magnetic materials and air. The fundamentals of ac and dc machines and their detailed operating principles including transformers, induction machines, synchronous machines, and different types of dc machines are covered. Moreover, the voltage-current characteristics of generators and torque speed characteristics of motors are included. Various techniques for starting, speed control, reversing, and braking of AC and DC machines are considered to develop thorough understanding of construction, characteristics, operation, and proper application of ac machines being used in industries. **Prerequisite:** EEEN 3361: Electromagnetic Fields and Waves

EEEN 4371: Electric Power Systems (3,0) This course constitutes a comprehensive overview of electrical power systems. Fundamentals and underlying principles are addressed. Instruction includes topics which are encountered by practicing engineers. Real-world examples are presented for problem solving. The course also serves as preparation for further graduate study. Topics covered include basic concepts, modeling, power flow analysis, and fault analysis. **Prerequisite:** EEEN 4461: Electric Machinery

EEEN 4372: Electric Power Transmission and Distribution (3,0) Students develop knowledge and skills in the modeling, analysis, and design of electrical power systems incorporating overhead transmission and distribution lines, as well as underground distribution cables. Instruction, homework, and special analysis and design projects include recent power system issues. Electrical power distribution topics for low and medium voltage distribution systems include transformer connections and fault location calculations. Social, economic, environmental and ethical issues are also considered, including those issues related to high-voltage power transmission. **Prerequisite:** Successful completion of: EEEN 3461: Electric Machinery

Mechanical Engineering – MEEN

MEEN 2311: Materials Engineering (3,0) The course covers the various material structures, including chemical structure, microstructure, crystalline structure, interface structure, and phase diagrams. Bulk properties of metals, polymers, and ceramics are discussed with respect to the various structures. It also covers mechanical, electrical, optical, magnetic, and thermal properties of materials. **Prerequisites:** CHEM 1421: Chemistry for Engineers I, GEEN 2311: Engineering Mechanics I: Statics

MEEN 2312: Engineering Mechanics II: Dynamics (3,0) The course is the second course of engineering mechanics offered for all majors. This second course includes a thorough coverage of vectors, application of dot and cross products to engineering mechanics: dynamics problems. **Prerequisites:** MATH 1423: Calculus II, GEEN 2311: Engineering Mechanics I: Statics

MEEN 2313: Solid Mechanics (2,3) Topics covered in this course include concepts of stress, stress and strain-axial loading, torsion, bending, transverse loading, transformation of stress and strain, shear and bending moment diagrams, deflection of beams by integration method, deflection of beams by moment-area method, and column. **Prerequisites:** GEEN 2311 Engineering Mechanics I: Statics, MATH 1324: Calculus III

MEEN 3111: Thermofluids & Energy Lab (0,3) This course is an introduction to experimental methods in the thermal sciences. Students learn to analyze raw data and organize the results into a comprehensive lab report. They also are exposed to experiments and techniques in the various areas of thermal science. Students are expected to have a thorough understanding of fluid mechanics and thermodynamics, with heat transfer to be successful in this course. **Prerequisite:** MEEN 3333: Heat Transfer

MEEN 3101: Machine shop Practice & Safety (0,3) This course is an introduction to experimental methods in the Manufacturing sciences. Students learn to analyze raw data and organize the results into a comprehensive lab report. They also are exposed to experiments and techniques in the various types of manufacturing processes. Students are expected to have a thorough understanding of manufacturing and materials to be successful in this course. **Prerequisite:** MEEN 3311: Manufacturing Processes

MEEN 3311: Manufacturing Processes (3,0) This course introduces modern manufacturing processes including computer application (CAD/CAM) in manufacturing. It provides a special emphasis on materials selection for various design and manufacturing applications. Students are familiarized with solidification processes, particulate and plastic manufacturing processes, micro manufacturing, rapid prototyping, non-traditional material removal processes, composite manufacturing, and joining processes. Design for manufacturability, design-for-assembly, design-of-experiment, and Design for Cost are also discussed. **Prerequisite:** MEEN 22311: Materials Engineering

MEEN 3322: Thermodynamics II (3,0) This course continues the introduction to concepts of thermodynamics begun in GEEN 2313, Thermodynamics I. Various thermodynamic cycles and systems are covered, which include gas and vapor power cycles, propulsion, and refrigeration cycles and systems. The emphasis is on the calculation of the thermal performance and the approaches to improve. The basics of HVAC are introduced through concepts of properties of gas mixtures and psychrometry. Heating and cooling loads under a set of conditions are determined. Thermodynamics of the system with chemical reaction is also covered, which includes the air-fuel ratio, adiabatic flame temperature, and heat release from the reacting flow. **Prerequisite:** Successful completion of: GEEN 2313: Thermodynamics I, Concurrent registration in: GEEN 3311: Introduction to Fluid Mechanics

MEEN 3432: Computational Methods (3,3) This course presents numerical methods to solve problems related to Mechanical Engineering fields. These include Taylor series and error analysis, numerical integration and differentiation, non-linear algebraic equations; curve fitting and regression, boundary value problems; and ordinary differential equations. Students learn which techniques to apply to different systems – both what works, and what does not work. The students learn to solve mathematical equations using both numerical and analytical tools. **Prerequisites:** GEEN 2211: Engineering Computing, MATH 2332: Differential Equations

MEEN 3333: Heat Transfer (3,0) Topics covered in this course include introduction to heat transfer; conservation of energy requirement; Fourier law; conduction rate equation, boundary and initial conditions; one-dimensional steady state conduction; thermal resistance and thermal circuit; plane wall and radial systems; heat transfer from extended surfaces; introduction to convection; velocity and thermal boundary layers; dimensionless parameters; external flow; internal flow, combined internal and external flow; free convection; introduction to radiation heat transfer, heat exchanger design. **Prerequisite:** GEEN 3311: Introduction to Fluid Mechanics

MEEN 3391: Design of Mechanisms (3,0) This introduction to engineering design and the design concept provides an understanding of the kinematics of machine elements, including linkages, rolling and sliding contacts, cams, and gears and gear trains. Both static and dynamic force analyses in mechanisms are introduced. Students are expected to have a thorough understanding of calculus, physics, and statics and dynamics to be successful in this course. Mechanical engineering majors take this course in the first semester of the junior year. **Prerequisite:** MEEN 2312: Engineering Mechanics II: Dynamics

MEEN 3394: Computer Aided Design (2,3) This course is an introduction to computer aided design. Students are introduced to the basics of mechanical design using computers. The foundation of the course is based on introductory level computational mechanics. In addition, students will utilize commercially available CAD packages (preferably Solidworks) to design

mechanical components and assemblies. The use of CAD to optimize designs and to create bill of materials and kinematic studies is introduced. Mold design and sheet-metal applications are also introduced. The course will introduce use of computer aided designs to generate rapid prototypes and how to interface with computer aided manufacturing. Mechanical engineering majors take this course in the second semester of the junior year. **Prerequisites:** MEEN 3311: Manufacturing Processes, MEEN 3391: Design of Mechanisms

MEEN 3395: Mechanical Vibrations (2,3) This course capitalizes on students' acquired knowledge to provide them with vital skills as mechanical engineers. The course starts by introducing students to the basic vibratory system, viz., single degree of freedom system (SDOF): equation of motion formulation and solving for both linear and torsional systems. Free and forced vibration concepts are introduced at this level as well as the concept of damping and the natural frequency and resonance. This is further extended to the two degrees of freedom system (2DOF), where the vibration control (vibration absorber) is introduced. Multiple degrees of freedom systems (MDOF) are introduced and the concept of lumped parameter modeling (LPM) is explained (both linear and torsional). Matrix formulation and the MATLAB/Simulink differential equation solving capabilities are presented to the students to solve for the steady state vibrations of the system. Continuous systems are next introduced and the vibrations of beams and bars are discussed. Finally, the concepts of modal analysis and the measurements of vibrations are presented and illustrated by the aid of lab experiments and finite element simulations. **Prerequisite:** MEEN 3391: Design of Mechanisms

MEEN 4392: Feedback Control (2,3) The concepts of dynamics and control of mechanical systems are presented. The students learns to solve control problems for both steady-state and transient responses. Control design featuring both time and frequency response is covered. Several classes of controllers are covered. Students are expected to have a thorough understanding of mathematics and statics and dynamics to be successful in this course. Mechanical engineering students take this course in the second semester of the junior year. **Prerequisites:** MEEN 3432: Computational Methods, MEEN 3395: Mechanical Vibrations

MEEN 4393: Machine Design (3,0) This course presents the concepts of mechanical design from the point of view of stress analysis. Machine components are designed based on a reliability and failure analysis. Various types of mechanisms are discussed. Students are expected to have a thorough understanding of mathematics, statics and dynamics, mechanics of solids, and mechanisms to be successful in this course. Mechanical engineering students take this course in the first semester of the senior year. **Prerequisite:** MEEN 3394: Computer Aided Design

MEEN 4311: Principles of Heating, Ventilating, and Air Conditioning (HVAC) (2,3) The subject matter of this course includes an overview of various HVAC systems with an emphasis on cooling applications. Comfort conditions, psychometrics, HVAC components, equipment sizing and selection, cycle efficiencies, and duct and piping layouts are analyzed and designed. **Prerequisites:** MEEN 3322: Thermodynamics II, MEEN 3333: Heat Transfer

MEEN 4322: Power Generation (3,3) Starting with an overview of issues related to energy and power generation, the course covers the various systems and cycles used in producing electrical power. The main emphasis is on traditional steam-generation plants, gas turbines, and combined cycle plants burning natural gas or oil. The energy conversion processes and energy efficiency are presented, and the operation of key components (fan, pump, condenser and cooling tower) is covered. The basics of plant emission and controls are included in the course. To complete the picture of power generation, a brief introduction to power generation with renewable energy is given. **Prerequisites:** GEEN 3311: Introduction to Fluid Mechanics, MEEN 3322:

Thermodynamics II, MEEN 3333: Heat Transfer

MEEN 4396: Mechanical Engineering Senior Design I (2,2) The course requires students to complete a project using the knowledge they have acquired from their undergraduate program. The students work in groups of three under the supervision of a faculty member. Where appropriate, they also work with representatives of companies in the region to research and identify a problem to solve. Students identify tasks to be implemented and form their conceptual design. They shall raise questions and problems through group discussion and learn to clearly and precisely formulate answers. Students gather and assess relevant information, so that they can address the project objectives. They learn how to think within alternative systems of thought and communicate effectively with others to arrive at solutions to the problems. At the end of the course, students complete a final project report and make an oral presentation. **Prerequisites:** MEEN 3394 Computer Aided Design and Department approval

MEEN 4397: Mechanical Engineering Senior Design II (2,2) The course requires students to complete a project using the knowledge they have acquired from their undergraduate program. The students work in groups of three under the supervision of a faculty member. Where appropriate, they also work with representatives of companies in the region to research and identify a problem to solve. Students identify tasks to be implemented and form their conceptual design. They shall raise questions and problems through group discussion and learn to clearly and precisely formulate answers. Students gather and assess relevant information, so that they can address the project objectives. They learn how to think within alternative systems of thought and communicate effectively with others to arrive at solutions to the problems. At the end of the course, students complete a final project report and make an oral presentation. **Prerequisite:** MEEN 4396: Mechanical Engineering Senior Design I

MEEN 4312: Fluid Mechanics (3,0) In this course, students learn to solve problems related to piping systems in series and/or in parallel. The concept of a boundary layer is introduced, together with the pressure and shear stress along the surface of immersed bodies. Students learn how to calculate lift and drag acting on a body due to a flowing fluid. The fundamental principles of flow through pumps, fans, turbines, and compressors will be studied with a focus on fluid and thermal analysis on these machines. In addition, the compressible flow is examined. The concepts of compressibility, speed of sound, and Mach number are introduced. The topics covered in compressible flow also include both isentropic and nonisentropic flows of an ideal gas with constant and various flow cross-sectional areas. The basics of computational fluid dynamics (CFD) are also included in this course. **Prerequisites:** GEEN 3311: Introduction to Fluid Mechanics, MEEN 3322: Thermodynamics II

MEEN 4315: Principles of Building Energy Analysis (3,0) The course is to analyze the building energy usage by applying the current ASHRAE building load calculation methods. Both the heat balance (HB) and radiant time series (RTS) methods are introduced to calculate building loads. Solar radiation, heat release from occupants, and heat transfer from the building to the ambient under various weather conditions are considered. The concepts from thermodynamics, heat transfer, and mathematics courses are practiced in this course. Different from the HVAC course, the emphasis of this course is on thermal load analysis for different building structures and designs. MEEN 4311, Principles of HVAC and this course can be taken in any order. **Prerequisites:** MEEN 3322: Thermodynamics II, MEEN 3333: Heat Transfer

MEEN 4331: Internal Combustion Engines (3,0) In this course, students learn to solve problems involving the fluid mechanics, thermodynamics, and heat transfer of the internal combustion engine. Students are expected to have a thorough understanding of thermodynamics, fluid mechanics, heat transfer, and chemistry to be successful in this course. **Prerequisites:** MEEN 3311: Intro to Fluid Mechanics, MEEN 3322: Thermodynamics II, MEEN 3333: Heat Transfer

MEEN 4332: Turbomachinery (3,0) This course introduces students to various turbomachines, including pumps, fans, compressors and turbines. The performance of turbomachinery is analyzed through the application of fluid mechanics and thermodynamics. The similarity and scaling laws are developed to calculate the overall energy transfer rate and power input or output. The basics of blade design are covered through 2D cascades, and more detailed design principles of radial and axial flow machines are also presented. The relationship between the blade design and the performance is explored. **Prerequisites:** GEEN 3311: Introduction to Fluid Mechanics, MEEN 3322: Thermodynamics II, MEEN 3333: Heat Transfer (Co-requisite)

MEEN 4341: Corrosion Engineering (3,0) Topics covered in this course include the technology and evaluation of corrosion; electrochemical thermodynamics; electrochemical kinetics of corrosion; passivity and properties of passive films on metals; polarization methods for measuring corrosion rates; Galvanic, concentration cell, pitting, and crevice corrosion; effects of metallurgical structure on corrosion; corrosion in selected corrosive environments; coatings and inhibitors; and materials selection and design. **Prerequisites:** MEEN 3322: Thermodynamics II, MEEN 2311: Materials Engineering

MEEN 4344: Materials in Design (3,0) Introduction to product design and development process, codes and standards, materials properties, tribology and wear, corrosion, and materials processing as it relates to a specific product design. **Prerequisite:** MEEN 3311 Manufacturing Processes; **Co-requisite:** MEEN 4393 Machine Design

MEEN 4351: Intermediate Dynamics (3,0) The course will include three-dimensional Newtonian kinematics and dynamics of rigid bodies; Lagrange's equations; analytical solutions for rigid body dynamics; and an introduction to variational methods. **Prerequisites:** MEEN 2312 Engineering Mechanics II: Dynamics, MEEN 3391 Design of Mechanisms

MEEN 4394: Advanced Control Systems (3,0) The course teaches the students how to model mechanical, electrical, hydraulic, and thermal subsystems and to design control systems. The course covers classical dynamics, multiple degrees of freedom vibrations, transient and steady-state performance, and control system design specifications. **Prerequisites:** MEEN 3432: Computational Methods, MEEN 4392: Feedback Control

General Engineering – GEEN

GEEN 1211: Introduction to Engineering (2,0) This course is an introduction to engineering and engineering design at the freshman level. The disciplines of civil, electrical, and mechanical engineering are defined. A systems approach to engineering design is used to solve open-ended engineering design problems related to civil, electrical, and mechanical engineering. Principles of teaming are emphasized throughout the course in accord with the design problem. **Prerequisite:** None

GEEN 2311: Engineering Mechanics I: Statics (3,0) The course involves equilibrium of rigid bodies, resultants of force systems, centroids, and moments of intertia. Kinematics and kinetics of particles and rigid bodies also are covered. **Prerequisites:** PHYS 1421: Physics for Engineers I, MATH 1423: Calculus II

GEEN 2211: Introduction to Computing (1,2) The course is an introduction to computer systems, problem solving methods and algorithm development. Structured programming is taught using the programming language C, or C++, and JAVA. It includes designing coding, debugging and documenting programs using techniques of software development cycle. MATLAB also is taught, enabling students to solve mathematical problems with this tool. **Prerequisite:** MATH 1324: Calculus III

GEEN 2313: Thermodynamics I (3,0) This course introduces students to the concepts of heat and energy and how they relate and interact. Mass systems, control volumes, reversible and irreversible processes, open and closed systems, and open and closed cycles are covered. **Prerequisites:** MATH 1324: Calculus III, CHEM 1421: Chemistry for Engineers I

GEEN 2314: Electric Circuits and Electronics (2,3) Designed to be taken by non-Electrical Engineering majors, this course covers electric circuit analysis, AC circuits and frequency response, transformers, power supplies, AC power and power distribution, diodes, op amps, logic gates, introduction to solid state devices, and sensors. Practical problems of solving electronic circuits will also be covered in this course. **Prerequisites:** PHYS 1422: Physics for Engineers II

GEEN 4311: Engineering Economy (3,0) This course teaches the basic principles and techniques of economic analysis and cost engineering. Applications are made to real engineering problems and processes. The use of economics in evaluating engineering designs is emphasized. **Prerequisite:** 90 student credit hours

GEEN 3311: Introduction to Fluid Mechanics (3,0) This course introduces students to the concepts of fluid statics and fluid dynamics. Fluid statics refers to a fluid at rest and the forces which act on the fluid in that state. Fluid dynamics refers to a fluid in motion and the forces that act on the fluid in that state. **Prerequisite:** GEEN 2313: Thermodynamics I

GEEN 2310: Applied Linear Algebra for Engineers (3,0) Linear Algebra covers topics from linear algebra including vector spaces, linear transformations and matrices, matrix operations, and eigenvectors and eigenvalues. Students acquire mathematical knowledge and skills with matrices, linear systems, and vector spaces necessary for further study in engineering **Prerequisite:** GEEN 2310, MATH 2332.

MASTER OF SCINCE IN MECHANICAL ENGINEERING DEGREE PROGRAM

Vision and Mission of the Program

The Department of Mechanical Engineering at the PMU will educate mechanical engineering leaders and innovators, will create new knowledge, will provide a nurturing environment for teamwork and lifelong learning, and will positively impact the economic prosperity of the Kingdom of Saudi Arabia.

The mission of the Master of Science in Mechanical Engineering Degree Program at Prince Mohammad bin Fahd University (PMU) is to provide an environment conducive to the development of future engineers for Saudi Arabia and the Gulf region. The program prepares engineers for a changing world with a blend of theory and practice in association with the local needs of the community.

Candidates in the Master of Science in Mechanical Engineering Degree Program at PMU will also develop dispositions and habits needed for self-learning and life-long learning that will equip them to encounter problems and change with confidence. Specialized fields of study will help the graduates to concentrate on areas of interest to better prepare them to serve the engineering arena.

MASTER DEGREE PROGRAM OVERVIEW

The M.Sc. program in Mechanical Engineering at PMU will be dedicated to recruiting the highest caliber mechanical engineers willing to pursue their graduate studies, retaining them through guidance and direction, and graduating advanced level engineers who will compete and be recognized both locally and in a global society. To further fulfill this mission, an ongoing and active recruitment program will be carried out to retain and attract faculty and staff who will be recognized for their expertise and ability to impart to students the most needed advanced skills and knowledge.

Laboratory facilities in the Mechanical Engineering department will be equipped with more experiments, testing machines and research equipment. More and higher capacity computing facilities will be available for students use throughout their course of study.

The PMU Library will be expanding its database of journals, periodicals and advanced books that will assist the students in their research and course work. Online electronic library resources will also be expanding for the students.

THE MS PROGRAM EDUCATIONAL OBJECTIVES AND OUTCOMES

The Mechanical Engineering Program's intended student learning outcomes are consistent with the National Qualification framework of NCAAA. The College of Engineering emphasizes these outcomes within the five following domains:

- Engineering Knowledge
- Cognitive (Intellectual) Skills,
- Interpersonal Skills and Responsibility,
- Communication, Information Technology and Numerical Skills,
- Psychomotor and Other Non-Cognitive Skills.

The Department of Mechanical Engineering' at PMU, emphasizes the following educational objectives:

- Graduates of the program will meet the professional expectations of national and international employers of mechanical engineers.
- Graduates of the program will be prepared to undertake leadership roles in their communities and/or professions.
- Graduates of the program will be prepared to pursue advanced studies and/or professional certification/training, if they so desire.
- Graduates of the program will be prepared in research techniques, interdisciplinary teamwork, and critical analysis of mechanical engineering problems.

ADMISSION REQUIREMENTS

ADMISSION REQUIREMENTS AND SELECTION

Admission criteria: The character and quality of students in the Mechanical Engineering Master Program will be major defining factors of the program. Admission criteria and selection therefore are essential parts of the program. The admission process for the program should establish an overall profile for an entering class, including averages in academic performance and work experience, with acceptable ranges established around those averages. The program then should select individuals for the class to meet that profile.

The program is for male students. The requirement of the program participants is to have an accredited bachelor degree. The application deadline for admission to the program will be determined by the designated parties involved in running the program. There are minimum criteria for entrance into the program. An expanded list of criteria and standards includes:

Educational background: A completed baccalaureate degree from an accredited and/or recognized university provided that the applicant's field of specialization is relevant. Official transcripts of all college work at previous institutions must be provided. The applicant's undergraduate grade point average will be an indicator of his/her ability to complete the program. Ideally, applicants should have achieved a grade point average 2.75 (on a 4.0 scale) or higher in the last 60 hours of undergraduate coursework.

If the applicant does not come from a mechanical engineering major, then a one semester consisting of 4 pre-requisite courses will be required as determined by their preparation.

Work experience: Successful candidates are preferred to have industrial experience.

SCORES ON STANDARD TESTS

English language: Students must demonstrate proficiency in the English language through satisfactory performance on the International English Language Testing System (IELTS) of Test of English as a Foreign Language (TOEFL). PMU will require an overall IELTS score (or equivalent) of 6.0, with a minimum score of 5.0 on each test component administered within the last two years. Alternatively, having a score of not less than 550 in the TOFEL or acceptable evidence of proficiency in the English Language administered within the last two years. However, it is preferable that the TOFEL or IELTS exam should be taken 6-9 months prior to the term in which the student wishes to start their program.

The TOFEL or the IELTS exam may be waived for native speakers of English and for those students who received a bachelor degree from a university in which the language of instruction was English.

SUPPORT, REFERENCES AND INTERVIEW

Statement of purpose: A statement of purpose (usually around 500 words) in which the applicant summarizes his/her professional goals, including professional objectives, research interests, his/her motivation for graduate work and other significant information.

Letters of reference: Applicants must submit at least two letters of recommendation that attest to their professional competence, academic preparation, and potential for graduate work. The two letters should clearly reflect professional success and foresee academic success at the graduate level. Ideally, one letter should be from a college or university professor who can discuss the applicant's academic abilities and one should be from an administrator or colleague who can authoritatively describe the applicant's professional experience and potential.

Personal interview: a committee of program administrators and faculty should personally interview each candidate who otherwise meets the selection criteria. The interview will provide an opportunity to see the candidate in a setting of personal interaction and thus can help to determine whether or not the candidate has the right skill set for the program.

CONDITIONAL ADMISSION

All requirements implicit in the above statements must be completed before consideration of an applicant for admission. The program administrators cannot assure admission to all applicants who meet minimum standards specified for the degree program. A graduate selection committee chaired by the director of the program will review the credentials of each applicant. It is the responsibility of this committee to exercise professional judgment related to the criteria that applicants must meet in order to be considered for admission to the program.

Conditional acceptance means that a place will be reserved for the applicant in the chosen full time credit program. If an applicant does not meet the above requirements, he/she may be granted conditional admission. The conditional admission may be given but not limited to the following cases:

Students who do not have a relevant baccalaureate degree, conditional admission may be granted provided they complete the first 3 core courses of the program and achieve a B or higher

Students who do not achieve the required TOFEL or IELTS score, conditional admission may be granted if they pass the PMU graduate admission exam in reading, writing, speaking, listening, computing, presenting and researching.

Students with lower than 2.75 in their last 60 credit hours of the undergraduate coursework or their degree is more than 10 years old, may be granted conditional admission provided that they achieve a grade of B or higher in the first three core courses of the program.

Course accepted for transfer are calculated with courses taken at PMU in determining GPA.

ATTENDANCE AND COMPLETION REQUIREMENTS

Participation and Attendance: The assessment of an individual participant's performance in the Mechanical Engineering Master program requires full time class attendance and participation in all class activities throughout the program. Participation in theoretical development of a technique and exposure to class discussion is critical for mastery of the subject matter, to achieve the learning outcomes and maximize the learning environment. As well, the Program emphasizes the development of high standards of professional conduct. Therefore, punctual attendance is expected at all lectures, seminars, professional development sessions and scheduled activities of the master program. It is recognized that a student may be unavoidably delayed on occasion; however, arriving late can be very disruptive to colleagues and faculty members. It is at the faculty member's discretion how poor punctuality will be handled. Regular attendance in all courses is mandatory, unless absence is unavoidably caused by illness or compassionate reasons. If this is the case, the student is expected to contact the instructor in advance where possible; documentation may be required. If a student misses more than 15% of a course, the student may not be allowed to write/submit the final examination for that course.

Attendance regulation is as follows:

The specific application of the attendance guidelines is at the instructor's discretion.

In the event a student misses 15% of the sessions in a class for any reason, the instructor may initiate withdrawal of the student from the course.

If the withdrawal is initiated before the end of the tenth week of class, a grade of W is entered on the student's record. This grade is not calculated in the GPA.

If the withdrawal is initiated after the tenth week of class, a grade of WF is entered on the student's record and is calculated in the GPA.

In order to encourage student attendance and to minimize withdrawals, instructors are to keep attendance records and to draw students' attention to attendance requirements.

Instructors need not give substitute assignments or examinations to students who miss classes.

Three occasions of lateness count as one absence. Lateness is defined by the individual instructor.

Progression from year to year: Students in the Mechanical Engineering Master Program require maintaining an overall GPA of 2.5/4 to progress to the next year of their studies, but if they fail to maintain the required GPA score, they will be placed on academic probation.

Placement on Probation: Students will be placed on academic probation at the end of any semester in which their grade point average (GPA) is below 2.5. Students on probation have one semester in which to achieve a non-cumulative GPA of 2.5 or higher. (Non-cumulative GPA is defined as a single-semester GPA.) If they do so in their subsequent semester, they are removed from academic probation. Failure to do so results in dismissal from the university

Removal of Probation and Dismissal: Probation will be removed at the end of any semester in which the student attains a cumulative GPA of 2.5. (Cumulative GPA is defined as the total grade point average for all semesters since entering the university.) A student will be dismissed if he or she fails to remove his/her probation by the end of the third semester on probation. Actions involving academic probation and dismissal are entered on the student's permanent record.

Reinstatement: Students who left PMU not in good standing and have been out of the university for no more than two semesters may submit a written request for reinstatement to the Office of the Registrar. The request should outline activities since leaving PMU that contribute to the student's academic development. Courses taken at another institution during this interim period are not transferable.

Students who have been out of the university for more than two semesters must submit a new application for admission to the Office of Admissions. Dismissed students may also be considered for reinstatement.

Program completion: A student admitted to and enrolled in the program usually registers for maximum of 12 credits each semester. The required minimum load for all students is 6 credits per semester, and the

maximum load is 12 credits per semester.

The minimum graduation requirement for the Mechanical Engineering Master program is 30 and 36 credit hours for Thesis and Non-thesis tracks. The program has been designed to be completed in two years. However, some students may require additional time depending on their chosen course load.

Student performance and graduation: The PMU Mechanical Engineering Master program will require students to maintain minimum standards of academic performance. Using a 4.0 scale for course grades, the department will require that students achieve an overall grade point average (GPA) of 3.0 (B) for graduation. No more than 20% of grades for individual courses may be 2.5 or below.

A student who receives a grade of "D" (1.0) or "F" in a course during the first year should repeat the course during the following year, simultaneously with the second year curriculum. A student who receives a grade "F "D" or "F" in the second year will take that course only during the following year

A student who receives a grade of "C: or above and wishes to repeat the course to achieve a higher grade, the student will be allowed to take the course at any time if the course(s) is offered with full payment for the course fees.

THESIS/RESEARCH REQUIREMENT

Brief: The thesis/research course acts as mechanism for you to synthesize your previous learning and ability to conduct an independent piece of work. Writing a research thesis gives you a unique opportunity to undertake an extended piece of personal research on a topic of your own choosing. You will be allocated to supervisors on the basis of the choice of topic. The research thesis can take a number of forms, for example:

- Empirical work involving quantitative and/or qualitative analysis of data
- A case study of a particular firm or industry, or
- Study of a particular problem in an industry, or
- Theoretical development of a technique, or
- Numerical development of a technique, or

Thesis/research requirements:

- The proposal (15%)
- Final thesis report (70%)
- Final thesis oral presentation (15%)

DEGREE REQUIREMENTS

Conferment of Master of Science in Mechanical Engineering requires successful completion of;
Thesis option: 24 credit hours of graduate level courses and a successful defense of a written research thesis. The research described in the thesis will be directed by a faculty advisor. The 24 credit hours represent 8 courses with 3 credit hours each.
Non - Thesis option: 27 credit hours of graduate level courses and a successful defense of a written research project. The research described in the project will be directed by a faculty advisor. The 27 credit hours represent 9 courses with 3 credit hours each.

PROGRAM DETAILS

Required Courses—12 Credit Hours

- GEEN 5301: Applied Mathematics for Engineers (3 Cr)
- MEEN 5302: Computer Aided Engineering (3 Cr)
- MEEN 6303: Design of Experiments (3 Cr)
- GEEN 6304: Interdisciplinary Research and Seminar (3 Cr)

Restricted Electives—12 Credit Hours
Thiess option (12 Credit Hours): Select 4 courses from one of the following tracks:
Non – thesis option (15 Credit Hours): Select 5 courses from one of the following tracks:

Thermofluid Track

- MEEN 5311: Advanced Fluid Mechanics (3 Cr)
- MEEN 5312: Advanced Heat Transfer (3 Cr)
- MEEN 5313: Computational Fluid Dynamics (3 Cr)
- MEEN 6314: Design of Heating Ventilation and Air Conditioning Systems (3 Cr)
- MEEN 6315: Gas Turbines Technology (3 Cr)
- MEEN 6316: Thermal Power Plants (3 Cr)
- MEEN 6317: Renewable Energy Technology (3 Cr)
- MEEN 6318: Advanced Thermodynamics(3 Cr)
- MEEN 6319: Energy Conservation (3 Cr)
- MEEN 6320: Advanced Turbo-Machinery (3 Cr)
- MEEN 6321: Desalination (3 Cr)
- MEEN 6329: Special Topics in Thermofluid (3 Cr)

Mechanical Track

- MEEN 5341: Experimental Mechanics (3 Cr)
- MEEN 5342: Mechanical Vibration (3 Cr)
- MEEN 5343: Finite Element Analysis (3 Cr)
- MEEN 5344: Digital Control Systems (3 Cr)
- MEEN 6345: Advanced Systems Dynamics and Control (3 Cr)
- MEEN 6346: Advanced Dynamics of Mechanical Systems (3 Cr)
- MEEN 6347: Advanced Mechanics of Materials (3 Cr)
- MEEN 6348: Advanced Engineering Materials (3 Cr)
- MEEN 6349: Advanced Corrosion Analysis (3 Cr)
- MEEN 6350: Advanced Manufacturing Processes (3 Cr)
- MEEN 6351: Fracture Mechanics (3 Cr)
- MEEN 6352: Non-Destructive Testing and Evaluation (3 Cr)
- MEEN 6353: Tribology (3 Cr)
- MEEN6354: Reverse Engineering and Rapid Prototyping (3 Cr)
- MEEN 6359: Special Topics in Mechanical (3 Cr)

Thesis Option—6 Credit Hours

- MEEN 6399: Thesis (6 Cr)

Non-Thesis Option—3 Credit Hours

- MEEN 6398: M.Sc. Project (3 Cr)

GRADUATE COURSES OFFERED BY THE COLLEGE OF ENGINEERING

COURSE SEQUENCE FOR MASTER OF SCIENCE IN MECHANICAL ENGINEERING (MS ME) PROGRAM

Thermofluid Track (Thesis Study Plan)

Total Semester Credit Hours: 30
Courses 24 credits Thesis 6 credits

First Semester: Compulsory Courses (9 - Credits) *Hours*

GEEN 5301: Applied Mathematics for Engineers.....3
MEEN 5302: Computer Aided Engineering.....3
MEEN 6303: Design of Experiments.....3
Total Hours:..... 9

Second Semester: Electives Courses (6 - Credits) *Hours*

GEEN 6304: Interdisciplinary Research and Seminar.....3
From elective courses list: First Elective Course.....3
From elective courses list: Second Elective Course.....3
Total Hours:..... 9

Third Semester: Electives Courses (6 - Credits)+Thesis *Hours*

From elective courses list: Third Elective Course.....3
From elective courses list: Fourth Elective Course.....3
Total Hours:..... 6

Fourth Semester: Thesis Preparation (6 - Credits) *Hours*

MEEN 6399: Master Thesis 6

Total Hours:..... 6

Thermofluid Track (Non-Thesis Study Plan)

Total Semester Credit Hours: 30

Courses 30 credits Thesis 0 credits

First Semester: Compulsory Courses (9 - Credits) *Hours*

GEEN 5301: Applied Mathematics for Engineers.....3

MEEN 5302: Computer Aided Engineering.....3

MEEN 6303: Design of Experiments 3

Total Hours:..... 9

Second Semester: Electives Courses (9 - Credits) *Hours*

GEEN 6304: Interdisciplinary Research and Seminar.....3

From elective courses list: First Elective Course.....3

From elective courses list: Second Elective Course 3

Total Hours:..... 9

Third Semester: Electives Courses (9 - Credits) *Hours*

From elective courses list: Third Elective Course 3

From elective courses list: Fourth Elective Course 3

Total Hours:..... 6

Fourth Semester: Electives Courses (6 - Credits) *Hours*

MEEN 6398: M.Sc. Project 3

Total Hours:..... 3

List of Courses (Compulsory & Electives) For Thermofluid Track

Course No.	Course Title	Credit hours		
		Th.	Pr.	Cr.
A- Compulsory Courses				
GEEN 5301	*Applied Mathematics for Engineers*	3	0	3
MEEN 5302	*Computer Aided Engineering*	2	3	3
MEEN 6303	*Design of Experiments*	2	3	3
GEEN 6304	*Interdisciplinary Research and Seminar*	3	0	3

B- Elective Courses				
MEEN 5311	*Advanced Fluid Mechanics*	3	0	3
MEEN 5312	*Advanced Heat Transfer*	3	0	3
MEEN 5313	*Computational Fluid Dynamics*	2	3	3
MEEN 6314	*Design of Heating Ventilation and Air Conditioning Systems*	2	3	3
MEEN 6315	*Gas Turbines Technology*	2	3	3
MEEN 6316	*Thermal Power Plants*	3	0	3
MEEN 6317	*Renewable Energy Technology*	3	0	3
MEEN 6318	*Advanced Thermodynamics*	3	0	3
MEEN 6319	*Energy Conservation*	3	0	3
MEEN 6320	*Advanced Turbo-Machinery*	3	0	3
MEEN 6321	*Desalination*	3	0	3
MEEN 6329	*Special Topics in Thermofluid*	3	0	3
C- Thesis *MEEN 6399 Thesis* C – Non-thesis track 6398 M.Sc. Project				6 3

Mechanical Track (Thesis Study Plan)
Total Semester Credit Hours: 30
Courses 24 credits Thesis 6 credits

First Semester: Compulsory Courses (9 - Credits) *Hours*

GEEN 5301: Applied Mathematics for Engineers.....3
MEEN 5302: Computer Aided Engineering.....3
MEEN 6303: Design of Experiments 3
Total Hours:..... 9

Second Semester: Electives Courses (9 - Credits) *Hours*

GEEN 6304: Interdisciplinary Research and Seminar.....3
From elective courses list: First Elective Course.....3
From elective courses list: Second Elective Course 3
Total Hours:..... 9

Third Semester: Electives Courses (6 - Credits)+Thesis *Hours*

From elective courses list: Third Elective Course 3
From elective courses list: Fourth Elective Course 3
Total Hours:..... 6

Fourth Semester: Thesis Preparation (6 - Credits) *Hours*

MEEN 6399: Master Thesis 6

Total Hours:..... 6

Mechanical System Track (Non-Thesis Study Plan)
Total Semester Credit Hours: 30
Courses 30 credits Thesis 0 credits

First Semester: Compulsory Courses (9 - Credits) Hours

GEEN 5301: Applied Mathematics for Engineers.....3
MEEN 5302: Computer Aided Engineering.....3
MEEN 6303: Design of Experiments 3
Total Hours:..... 9

Second Semester: Electives Courses (9 - Credits) Hours

GEEN 6304: Interdisciplinary Research and Seminar.....3
From elective courses list: First Elective Course.....3
From elective courses list: Second Elective Course 3
Total Hours:..... 9

Third Semester: Electives Courses (9 - Credits) Hours

From elective courses list: Third Elective Course 3
From elective courses list: Fourth Elective Course 3
From elective courses list: Fifth Elective Course 3
Total Hours:..... 9

Fourth Semester: Electives Courses (9 - Credits) Hours

MEEN 6398: M.Sc. Project 3
Total Hours:..... 3

List of Courses (Compulsory & Electives) For Mechanical System Track

Course No.	Course Title	credit hours		
		Th.	Pr.	Cr.
A- Compulsory Courses				
GEEN 5301	*Applied Mathematics for Engineers*	3	0	3
MEEN 5302	*Computer Aided Engineering*	2	3	3
MEEN 6303	*Design of Experiments*	2	3	3
GEEN 6304	*Interdisciplinary Research and Seminar*	3	0	3
B- B- Elective Courses				
MEEN 5341	*Experimental Mechanics*	2	3	3
MEEN 5342	*Advanced Mechanical Vibration*	2	3	3

MEEN 5343	*Finite Element Analysis*	2	3	3
MEEN 5344	*Digital Control Systems*	2	3	3
MEEN 6345	*Advanced Systems Dynamics and Control*	3	0	3
MEEN 6346	*Advanced Dynamics of Mechanical Systems*	3	0	3
MEEN 6347	*Advanced Mechanics of Materials*	3	0	3
MEEN 6348	*Advanced Engineering Materials*	3	0	3
MEEN 6349	*Advanced Corrosion Analysis*	3	0	3
MEEN 6350	*Advanced Manufacturing Processes*	3	0	3
MEEN 6351	*Fracture Mechanics*	3	0	3
MEEN 6352	*Non-Destructive Testing and Evaluation*	2	3	3
MEEN 6353	*Tribology*	3	0	3
MEEN6354	*Reverse Engineering and Rapid Prototyping*	2	3	3
MEEN 6359	*Special Topics in Mechanical*	3	0	3
C- Thesis or *MEEN 6399 Thesis* C – Non-thesis track 6398 M.Sc. Project				6 3

GRADUATE COURSES OFFERED IN MS ME PROGRAM

GEEN 5301: Applied Mathematics for Engineers (3, 0, 3): Fourier Analysis and Partial Differential Equations (PDE), Complex Numbers and Functions, Complex Integration, Power Series, Taylor Series, Laurant Series and Residue Integration, Complex Analysis to Potential Theory.

MEEN 5302: Computer Aided Engineering (2, 3, 3): This course emphasizes the usage of computer software throughout the engineering design process. Topics covered include: fundamental of design process, stress analysis, thermal and fluid flow analysis, concurrent engineering, geometric modeling, parametric modeling, visualization techniques in engineering, optimization of the product or process. A widely used proprietary design packages is to be used for system simulation and design (ANSYS).

MEEN 6303: Design of Experiments (2, 3, 3): This course consists of introduction to industrial experimentation, fundaments of design of experiments, understanding key interactions**,** mean effect plots, interaction plots, full factorial design, error and variance, partial factorial design, basic statistical measurements and their application in engineering, statistical analysis of data. P-value plots, α plots, probability distributions, sampling distributions, estimation and confidence, intervals for parameters of statistical distributions, hypothesis testing, design and analysis of variance for estimation and confidence intervals for parameters of non-statistical models, single and multiple-factor experiments, regression analysis, single and multiple-factor experiments, regression analysis, Use of commercial software for the application of above topics in design of experiments and statistical techniques. Mini project.

GEEN 6304: Research Methodology and Seminar (3, 0, 3): Emphasis on research and writing strategies in proposing and completing an evidence-based academic paper. Drafting and revising thesis statements, literature reviews, sources citation in text. Selection of an appropriate research approach, and constructing a reference list in compliance with international manual style for students and researchers. The use of library in both traditional and electronic methods of finding and making use of evidence. The background and foundations for writing the capstone proposal are provided.

MEEN 5311: Advanced Fluid Mechanics 3 (3,0): Conservation Laws: conservation of mass, momentum and energy, strain and stress in fluid flow and their relationship, laminar flow of viscous incompressible fluids: flow between, parallel flat plates, Couette flow, Poiseuille flow, flow between two coaxial cylinders, flow of two concentric rotating cylinders, unsteady motion of flat plates, boundary layer theory, Blasius solution, shear stress and boundary layer thickness, boundary layer on a surface with pressure gradient, Momentum integral theorem for boundary layer, separation and its prevention, turbulence, concepts of linearized stability of parallel viscous flow, transition to turbulent flow, Reynolds equation for turbulent flow, Prandtl mixing length theory, velocity profile, turbulent flow in pipes and turbulent boundary layer on a flat plate, inviscid flow, elementary plane flow solutions, uniform flow, source or sink and vortex, superposition of lane flow solutions, flow over wedge, circular and Rankine oval.

MEEN 5312: Advanced Heat Transfer (3, 0, 3): This course consists of the following topics, 1D and 2D conduction and applications, transient conduction, thermal boundary layers-free and forced convection, boiling and condensation, pool boiling, two phase flow, laminar and turbulent film condensation, heat exchangers: types, analysis and design procedure, thermal radiation processes and properties, blackbody radiation, gray surfaces.

MEEN 5313: Computational Fluid Dynamics (2, 3, 3): Introduction to the methods and analysis techniques used in computational solutions of fluid mechanics and heat transfer problems. Finite difference method, partial differential equations, discretization approaches, stability, consistency, and convergence. Finite-volume formulations, explicit and implicit methods, code and solution verification, incompressible flows. Validation and uncertainty quantification. A widely used proprietary design package is to be used for system simulation and design (ANSYS/Fluent commercial CFD code).

MEEN 6314: Design of Heating Ventilation and Air Conditioning Systems (2, 3, 3): This course is an application of thermodynamics, fluid mechanics, and heat transfer to the design and selection of HVAC equipment. Topics covered are: HVAC design process, occupant comfort and health, load calculations, HVAC components, all-air HVAC systems, air-and-water systems, all-water systems, special HVAC systems: desiccant systems, thermal storage, energy-efficient subsystems, HVAC&R controls. A widely used proprietary design package is to be used for system simulation and design.

MEEN 6315: Gas Turbines Technology (2, 3, 3): Gas turbine engine and component performance; gas turbine thermodynamic cycles; combustors fuels and emissions; gas turbine applications and implications to the user; gas turbine control system; gas turbine maintenance strategies; reliability and availability; gas turbine procurement; condition monitoring; usage and retention.

MEEN 6316: Thermal Power Plants (3, 0, 3): Forms of energy; oil, gas and coal; combustion processes; gas power plants; steam power plants; combined power plants; nuclear power plants; steam generators and their component design; turbines load curves and power plant economy; matching of power plant elements; project: thermal analysis and performance of a power stations.

MEEN 6317: Renewable Energy Technology (3, 0, 3): This course is an introduction to available/projected technologies to generate energy/electricity from renewable resources. It aims to place engineering technologies in the context of environmental, political, and economic constraints. Topics covered are: survey of current energy generation, projected demand, political targets, environmental and economic risks, theory of turbines, hydro-energy, wind energy (on-shore/off-shore); fluid mechanics of wind-turbines, solar energy systems, geothermal systems, wave power, tidal streams and tidal barrages. Problems challenging grid placement and dissemination throughout a source network are also studied.

MEEN 6318: Advanced Thermodynamics (3, 0, 3): First law of thermodynamics; second law of thermodynamics and entropy (review); availability analysis and availability-cycles; multi-component systems; HVAC systems; combustion systems; optimization of systems; thermodynamic design.

MEEN 6319: Energy Conversion (3, 0, 3): Energy sources and their classification; conventional energy conservation: power plant and vapor cycles; renewable energy: Solar energy with emphasis on solar cells, and wind energy; ocean thermal energy conversion "OTEC" systems; geothermal energy; nuclear fission and types of fission reactors; fuel cells.

MEEN 6320: Turbo-Machinery (3, 0, 3): Radial flow turbines; axial flow turbines; flow through axial stages; theory of twisted blades; multi-stage turbines; design of the turbine blades; governing of steam and gas turbines; vibration aspects; coefficients of performance and design considerations for axial flow compressors and ducted fans; coefficients of performance and design considerations for centrifugal compressors; centrifugal pumps: performance, losses, cavitation, water hammer and impeller design; water turbines; characteristics, design considerations, performance.

MEEN 6321: Desalination (3, 0, 3): Concepts in thermodynamics; water treatments; fouling and scaling on tubes; fouling removal; thermal desalination: multistage evaporation systems (MES); multistage flash systems (MSF); vapor compression desalination systems(VCD); solar desalination systems; co-generation power systems; reverse osmosis systems: types of membranes; membrane arrangements; energy recovery; back washing; membrane fouling; ultra and nanofiltration.

MEEN 6329: Special Topics in Thermofluid (3, 0, 3): This course is delivered in light of the advent of new specializations in the field of thermofluid design in addition to the availability of a faculty member in the required specialty. Independent study is part of the course.

MEEN 5341: Experimental Mechanics (2, 3, 3): Analysis and presentation of experimental data. Displacement measurement and sensors. Signal conditioning and measurement interpretation. Theory and application of strain measurement using electrical resistance strain gages, strain gage circuits. Digital data acquisition systems. Transducer design, calibration and applications. Dynamic measurements. Theory and application of photoelasticity.

MEEN 5342: Mechanical Vibration (2, 3, 3): This course intended for engineers with background in mechanical, structural or related engineering disciplines Formulation of vibration problems, Free vibrations of Single-Degree-of-Freedom (SDOF) systems, Harmonic forced vibrations of SDOF system, General periodic and non-periodic response, Multi-degree-of-freedom systems, Vibration control techniques, Continuous systems, Vibration measurement.

MEEN 5343: Finite Element Analysis (2, 3, 3): Basics of Finite Element Method, -Matrix notation, General steps of FEM, Applications of FEM, Advantage and Limitations, Stiffness (Displacement) Method, Stiffness Matrix, Spring Element, Matrix Derivation, Assembly, Shape Functions, Boundary Conditions, Truss Equations, Bar Element, Derivation of Stiffness Matrix, Global Stiffness Matrix, Solution of Plane Truss, Weighted Residual (Galerkin's Residual Method), Beam Equations, Beam Stiffness, Global Stiffness Matrix, Shape Functions, Distributed Load, Nodal Hinge, Weighted Residual (Galerkin's Residual Method), Plane Stress and Plane Strain Stiffness Equations, Plane stress and Plane Strain Concepts, Constant Strain Triangular Element (CST), Linear Strain Triangular Element (LST), Isoparametric Formulation, Bar Element, Review Numerical Integration (Gaussian & Newton-Cotes Quadrature), Plane Element, Stiffness, Shape Functions, Higher Order Shape Functions, Heat Transfer, Basic Differential Equations.

MEEN 5344: Digital Control Systems (2, 3, 3): Review of the continuous control, introductory digital control, discrete time systems analysis, Sampled-Data Systems, Discrete Equivalents, Design Using Transform Techniques, Design Using State-Space Methods, Case Study: Design of a Disk Drive Servo.

MEEN 6345: Advanced Systems Dynamics and Control (3, 0, 3): This course introduces the Modeling and Simulation, Linearization, Review of the classical Control Theory, State space representation, Controllability and observability, State feedback and linear quadratic regulator, State observers, Kalman filters, Modeling/ performance trad-offs in control system design, Real Application.

MEEN 6346: Advanced Dynamics of Mechanical Systems (3, 0, 3): This course includes an Introduction to dynamics systems, Fundamental principles, Equations of motion using Newton's laws, Work-energy principle, Simulation of dynamical systems, Kineto-static and time response analysis, Principle of virtual work, Potential energy principle, Lagrange's equations, Hamilton's principle

MEEN 6347: Mechanics of Materials (3, 0, 3): Stress & Strain, Stress at a point, Notation, Stress transformation, principle stress, Plane stress, Mohrs Circle 2D, 3D, Stain theory, transformation, principle strain, Small displacement theory, Stress-Strain-Temperature Relations, Hooke's law: anisotropic, isotropic elasticity, Equ. of thermo-elasticity (isotropic material), Failure Theories, Yield criteria, Yield of Ductile metals, Alternative yield criteria, Energy Methods, Catigliano's theorem on deflection, Deflection of statically determinate structures, Statically indeterminate structures, Torsion, Circular cross-section, Noncircular cross-section, Bending of Straight Beams, Symmetrical bending, Nonsymmetrical bending, Deflection, Shear Center for Thin-Wall Beam Cross-sections, Bending of Curved Beams, Thick-Wall Cylinder, Stress Concentrations

MEEN 6348: Engineering Materials (3, 0, 3): Smart/functional materials, smart/functional materials, high-strength ferrous alloy, high-strength nonferrous alloys, super alloys, high performance polymers, eco-materials, processing-structure-property relationship, damage tolerance, toughening mechanisms structure integrity and reliability.

MEEN 6349: Advanced Corrosion Analysis (3, 0, 3): This course covers the topics of forms of corrosion, electrochemical mechanisms, thermodynamics and kinetics of corrosion, steel corrosion, corrosion inhibitors, anodic protection, cathodic protection, metallic and organic coatings.

MEEN 6350: Advanced Manufacturing Processes (3, 0, 3): Rapid Prototyping, Polymer processing / processing of composites, Metal forming, Sheet metal working, Material removal processes, Non-traditional machining, SPC/Lean Manufacturing.

MEEN 6351: Fracture Mechanics (3, 0, 3): This course introduces Crack tip solutions, displacements of fracture surfaces, Stress and strain fields and path-independent integrals, Basic tensor algebra, Concepts of dissipated energy, stiffness reduction and compliance methods, Limits of linear fracture mechanics, stress intensity factors and fracture toughness, Fatigue, Paris' law and stress corrosion laws, Non-linear fracture mechanical concepts and fracture resistance curves, Special Topics in Fracture Mechanics.

MEEN 6352: Non-Destructive Testing and Evaluation (2, 3, 3): Basic concepts of Non-Destructive Testing and Evaluation. Instrumentation and materials. Radiographic techniques, ultrasonic and acoustic emission techniques, infrared and optical techniques. Eddy current testing. Magnetic and Liquid Penetrant Methods. Applications and laboratory sessions.

MEEN 6353: Tribology 3 (3,0): Introduction to tribology and tribological failure modes. Contact mechanics. Wear modeling and analysis. Roughness, hardness, friction. Thick pressurized fluid films in both hydrostatic and hydrodynamic bearings. Elasto-hydrodynamic lubrication, boundary lubrication mechanisms. Dry and lubricated bearing design. Applications: journal and rolling element bearings, cams and followers, gear teeth.

MEEN 6354: Reverse Engineering and Rapid Prototyping (2, 3, 3): Introduction, terminology and principles. The role of CAD. Three-dimensional measurement and scanning, surface digitization strategies, curve and surface modeling. Characteristics and capabilities of specific Rapid Prototyping processes. Laboratory techniques will provide the necessary hands on experience.

MEEN 6359: Special Topics in Mechanical (3, 0, 3): This course is delivered in light of the advent of new specializations in the field of mechanical systems design. Independent study is part of the course.

COLLEGE OF ARCHITECTURE AND DESIGN

College of Architecture and Design
Office: Insert Building, Room
Phone: Insert Phone Number
e-mail: jnayfeh@pmu.edu.sa

Jamal Nayfeh, PhD, Acting Dean
Helen Peterson, PhD, Chair, Interior Design, Acting Chair, Architecture
E. Jeannine Grantham, PhD, Acting Chair, Graphic Design

COLLEGE OVERVIEW

The College of Architecture and Design will accept successful male and female students from the PMU Preparation Year Program or other qualified students into degree programs in architecture and design. The classroom experience for students in the College of Architecture and Design will be highly student-centered, interactive, and communicative. Courses will combine theoretical content with practical and laboratory experience. Syllabi will include techniques for students to develop communication, teamwork, and leadership skills as part of an overall strategy for achieving the PMU core competencies. The curricula are designed to be accredited by National Architectural Accrediting Board (NAAB), Council for Interior Design Accreditation (CIDA) and Schools of Art and Design (NASAD) all of which require a balanced program of general education, technical classes, and design courses.

While students completing COAD degrees at PMU could certainly continue to graduate studies, the main emphasis in the college's programs is the preparation of graduates for employment and licensing as professional architects and designers. Graduates of the College of Architecture and Design will be self-directed, motivated, technically competent professionals with strong design skills, communication skills, capability for effective teamwork, and leadership.

Vision and Mission

Vision

The College of Architecture and Design at PMU will offer a unique and distinguished education that prepares future leaders, innovators, and creative global citizens in the professions of Architecture, Interior Design and Graphic Design. To address the fundamental and grand challenges of achieving economic, ecological, social, and aesthetic design solutions, its graduates will apply research-informed design and innovative technology.

Mission

The PMU College of Architecture and Design and its faculty will provide education for future leaders and innovators in the professions of Architecture, Interior Design and Graphic Design, create new knowledge about the built environment and design, provide resources for lifelong learning, and serve the Kingdom of Saudi Arabia by increasing the quality of the environment of its communities and positively impact its economic prosperity.

Degrees Offered

The College of Architecture and Design offers the following degree programs:

Bachelor of Science in Architecture- male & female
Bachelor of Science in Interior Design- female only
Bachelor of Science in Graphic Design- male & female

ADMISSIONS PROCESS AND REQUIREMENTS

The character and quality of students entering the College of Architecture and Design will define the quality of the degree programs within the college. Therefore, it is important that students be properly qualified to enter their chosen discipline and that they fulfill all of the admission requirements.

Admissions to the College of Architecture and Design will be open to students who have completed the PMU Preparation Year Program or who have met the university criteria for bypassing the program.

Required Courses in the Preparation Year Program

The PMU Preparation Year Program (as described in the report *Preparation Program Design*) concentrates on English language, mathematics, and study skills and learning strategies. English language, study skills, and the first semester math course, PRPM 0011: Introductory Algebra, are required of all students. However, during the second semester of mathematics, students have a choice of two tracks, depending on their desired major in the college.

- Students seeking entrance to the Department of Architecture will be required to pass PRPM 0022: Pre-Calculus, during the second semester of the Preparation Year Program.

- Students seeking entrance to the Department of Interior Design or Graphic Design will be required to pass PRPM 0012: Intermediate Algebra or higher, during the second semester of the Preparation Year Program.

PERFORMANCE EXPECTATIONS

The College of Architecture and Design will require minimum standards of academic performance from its students. Using a 4.0 scale for course grades, the College of Architecture and Design will require that students maintain minimum grade point averages (GPA) for various categories of courses consisting of:

- 2.0 GPA in courses from the PMU Core Curriculum
- 2.0 GPA in all degree-specific courses (courses from the Core Curriculum that students must take beyond the minimum requirement)
- 2.5 GPA in all courses within the major academic discipline

A student who receives a D (1.0) or F in any course will be required to repeat the course and to achieve the required grade point average for that category of course. In the case of an elective, another elective may be selected. These students will be required to participate in tutoring and remediation programs offered by the college faculty and the PMU Learning Resources Center.

Students may repeat a course one time, with additional repeats allowed at the discretion of the faculty. However, no more than 10 repeated courses will be allowed over the student's career at the PMU. After the first repeat, prior grades will count toward the student's GPA. For example: A student who receives a D followed by an A will have the D erased and replaced with the A on the transcript. A student who receives an F followed by a D followed by an A will have the F erased, and both the D and the A will be averaged into the GPA.

In order to graduate, all students at the PMU will be required to maintain an overall GPA of 2.0.

Required Grade Average - Interior Design

The Department of Interior Design will require students to maintain minimum standards of academic performance. Using a 4.0 scale for course grades, the department will require students to maintain a minimum grade point average of

2.0 in all Core Curriculum courses
2.25 in all electives
2.5 in all interior design courses

A student who receives a grade lower than 2.5 in an interior design course will be required to repeat the course and to achieve the required grade point score. These students also will be required to participate in tutoring and remediation programs offered by the interior design faculty and the PMU Learning Resources Center. The course may be repeated one time or more with consent of the instructor.

Student Computing Requirements

Like all other students at PMU, students within the College of Architecture and Design will be required to have personal laptop computers. They will have access to the university-wide technology-infused environment including wireless Internet access.

However, students in the college will have specific computing requirements that extend beyond the standard Microsoft Office applications of a typical laptop. Many of these specific computing requirements will be available through the university's technology infrastructure to students' laptop computers. Others will be provided through general access and specialized computer laboratories.

COMPONENTS OF DEGREE PROGRAMS

Each of the degree programs offered within the College of Architecture and Design will consist of five components.

- General Education Requirements. These requirements for the University Core Curriculum and College Core Curriculum include 51-53 credit hours of courses in PMU core competencies, communications, Arabic Language and Islamic Studies, physical education, mathematics, laboratory science, and social and behavioral sciences.
- College of Architecture and Design Requirements for Architecture and Interior Design. These are eleven courses totaling 31 credit hours that are common to both the Architecture and Interior Design degree programs in the College of Architecture and Design. They represent a base of knowledge that is presumed for all built environment professionals or are combined advanced electives. The courses within the College of Architecture and Design that meet these requirements are designated with the prefix COAD. The COAD courses include the following:
    - COAD 1311: Design Studio I- Fundamentals
    - COAD 1312: Hand Drawing and Rendering Techniques
    - COAD 1313: Design Studio II- Fundamentals
    - COAD 1314: Construction Documents and Detail Drawings
    - COAD 2251: Digital Design I - Computer Aided 2D Drawing
    - COAD 2252: Digital Design II - Computer Aided 3D Modeling and Rendering
    - COAD 2332: Environmental Psychology for Design
    - COAD 3322: Building Codes and Universal Design
    - COAD 3341: Built World Design History and Theory I
    - COAD 3342: Built World Design History and Theory II
    - COAD 3353: Digital Design III – BIM
    - COAD 4333: History of Islamic Design (Elective)
    - COAD 4351: Built World Photography (Elective)

- Degree Program Requirements. Each degree program will have unique course requirements that apply to the degree major and that also differentiate the program from other majors within the College.
- Electives. Each degree program will identify the available electives and any constraints that will apply to the selection and scheduling of electives.

The Architecture program consists of 163 semester credit hours.
The Interior Design program consists of 126 semester credit hours.
The Graphic Design program consists of 125 semester credit hours.

Major in Architecture
The PMU Department of Architecture will be dedicated to recruiting the highest caliber students, retaining them through guidance and direction, and graduating individuals eligible for becoming licensed architects who will compete and be recognized both locally and globally.

Studio courses in the Department of Architecture are intended to promote a strong design culture within a context of project-based learning. In these studios, students will become familiar with the procedures, processes, analyses, tools, representation, and communication methods employed by professional architects. Various laboratories will be available for students' use throughout their course of study to support activities including computing, fabrication, and building performance testing. In addition, every student will be required to have a laptop computer.

Courses taught by the Department of Architecture are:
COAD 1311: Design Studio I- Fundamentals
COAD 1312: Hand Drawing & Rendering Techniques
COAD 1313: Design Studio II- Fundamentals
COAD 1314: Construction Docs & Detail Drawings
COAD 2332: Environmental Psychology for Design
ARCH 2341: Principles of Design with Climate
ARCH 2421: Design Studio III
COAD 2251: Digital Design I- 2D
ARCH 2342: Materials and Methods
ARCH 2422: Design Studio IV
COAD 2252: Digital Design II- 3D
COAD 3341: Built World Design History and Theory I
COAD 3353: Digital Design III: BIM
ARCH 3523: Design Studio V
COAD 3322: Building Codes and Universal Design
COAD 3342: Built World Design History and Theory II
ARCH 3343: Principles of Structural Systems
ARCH 3524: Design Studio VI
ARCH or COAD 43xx: Professional Elective
ARCH 4344: Introduction to Environmental Systems
ARCH 4354: Simulation and Optimization
ARCH 4525: Design Studio VII
ARCH 4345: Architectural Structures
ARCH 4346: Integrated Environmental Systems
ARCH 4361: Preparing the Project Brief
ARCH 4362: Construction Process and Building Economics
ARCH 4526: Design Studio VIII
ARCH 4365: Internship
ARCH 53xx: Professional Elective
ARCH 5327: Design Studio IX- Capstone Project Programming
ARCH 5363: Professional Practice and Ethics

ARCH 5628: Design Studio X- Capstone Project

Professional Electives:
COAD 4333: History of Islamic Design
COAD 4351: Built World Photography
ARCH 4371: Contemporary Materials in Architecture and Design
ARCH 5372: Building Energy Use Modeling and Simulation
ARCH 5373: Sustainable Housing and GeoDesign
ARCH 5374: Advanced Design Visualization
ARCH 5375: Computational Modeling and Simulation

Major in Interior Design

The PMU interior design program provides a firm foundation for aspiring entry-level professionals. Courses provide a broad perspective of the profession and issues of practice as well as detailed instruction and experience in how to apply learning in a professional setting.

With the exception of three credit-hours of electives, all students in the interior design program will pursue the same program in which they take the same courses in the same sequence. Interior design is a demanding discipline that covers a full range of technical, aesthetic, ethical, and functional topics. In order to best include these topics, the curriculum will center on a combination of lecture classes and interior design studios. In the studios, students will have the opportunity to integrate multiple aspects and concepts of interior design into their projects. Electives will provide students an opportunity to freely select additional courses from specified list to further enhance their educational experience.

Courses taught by the Department of Interior Design are:

COAD 1311: Design Studio I- Fundamentals
COAD 1312: Hand Drawing and Rendering Techniques
COAD 1313: Design Studio II- Fundamentals
COAD 1314: Construction Documents and Detail Drawings
IDES 2331: Materials for Interior Design
IDES 2311: Interior Design III Residential Design Studio
COAD 2251: Digital Design I – Computer Aided 2D Drawing
IDES 2312: Interior Design IV- Commercial Programming and Space Planning Studio
COAD 2252: Digital Design II–Computer Aided 3D Modeling and Rendering
COAD 2332: Environmental Psychology for Design
IDES 3411: Interior Design V - Office Design Studio
COAD 3341: Built World Design History and Theory I
IDES 3321: Interior Building Systems
IDES 3331: Interior Lighting
COAD 3353: Digital Design III - Building Information Modeling
IDES 3412: Interior Design VI – Hospitality Design Studio
COAD 3342: Built World Design History and Theory II
COAD 3322: Building Codes and Universal Design
IDES 3338: Interior Design Internship
IDES 4425: Interior Design VII - Healthcare Design
IDES 4337: Sustainable Design
IDES 4112: Interior Design Capstone Project Research
IDES 4413: Interior Design Capstone Project Design
IDES 4343: Professional Practices for Interior Designers
IDES or COAD 43xx: Professional Elective

Professional Electives:
IDES 4314: Advanced Design Methods

IDES 4332: Custom Furniture Design
COAD 4333: History of Islamic Design
COAD 4351: Built World Photography
IDES 4344: Interior Design Study Tour

Major in Graphic Design

The PMU Graphic Design curriculum has been developed to address the need for preparing future leaders in the field of graphic design in Saudi Arabia. Innovative graphic technologies and teaching methods have been proposed to contribute to the development of design knowledge.

Through this undergraduate curriculum, students will gain comprehensive learning experiences within the field of Graphic Design, including its subfields of brand identity, editorial design, packaging design, motion design, and user experience design (UX/UI).

Courses taught by the Department of Graphic Design are:

GDES 1311: Drawing
GDES 1321: 2D Design
GDES 1331: Art Appreciation
GDES 1312: Digital Imaging
GDES 1322: 3D Design
GDES 1332: Art History
GDES 2311: Typography I
GDES 2321: Illustration
GDES 2331: History of Visual Communication
GDES 2312: Arabic Typography
GDES 2322: Digital Photography
GDES 2332: Design Thinking
GDES 3311: Typography II
GDES 3321: Brand Identity
GDES 3331: Interaction I
GDES 3312: Information Design
GDES 3322: Motion Design
GDES 3332: Interaction II
GDES 3338: Internship
GDES 4321: Advanced Graphic Design
GDES 4112: Graphic Design Capstone Research
GDES 4413: GD Capstone Project
GDES 4322: Portfolio Development
GDES4331: Special Topics in Graphic Design

Capstone Requirements

During their senior year, each student will perform a two part comprehensive design project including research and ideation for the project the first semester and realization during the second semester in consultation with Department faculty. Intended to simulate a real-world design project in the specialization the student intends to pursue after graduation, the courses will include skills and subject-matter the student has learned in earlier classes including concepts, procedures, and processes.

The project will include problem identification, research, creative problem-solving strategies, and the production of a final capstone project, which will serve as the centerpiece in their professional portfolio. Seniors will use this project to synthesize what they have learned, what they may still want to learn, and to create a vehicle to distinguish or promote themselves in a specific niche in their chosen field.

Capstone Series – Architecture
The PMU Core Curriculum includes a series of three required assessment courses. The series begins in the sophomore year with ASSE 2111: Learning Outcome Assessment I and continues in the junior year with ASSE 3211: Learning Outcome Assessment II. The series culminates in the senior year with a final capstone design courses- ARCH 5327: Design Studio IX- Capstone Project Programming and ARCH 5628: Design Studio X- Capstone Project.

Capstone Series – Interior Design
The PMU Core Curriculum includes a series of three required assessment courses. The series begins in the sophomore year with ASSE 2111: Learning Outcome Assessment I and continues in the junior year with ASSE 3211: Learning Outcome Assessment II. The series culminates in the senior year with a final capstone design courses- IDES 4112: Interior Design Capstone Project Research and IDES 4413: Interior Design Capstone Project Design.

Capstone Series – Graphic Design

The PMU Core Curriculum includes a series of three required assessment courses. The series begins in the sophomore year with ASSE 2111: Learning Outcome Assessment I and continues in the junior year with ASSE 3211: Learning Outcome Assessment II. The series culminates in the senior year with a final capstone design courses- GDES 4112: Graphic Design Capstone Research and GDES 4413: GD Capstone Project Design

Internship for COAD Students

All COAD students will be required to pass a 320 hour professional internship in the summer semester after completing their Junior year courses.

COURSE SEQUENCE FOR MAJORS
Architecture

Total Semester Credit Hours: 163

Freshman Program

First Semester	*Hours*
COMM 1311: Written Communication	3
UNIV 1211: Prof. Development	2
MATH 1422: Calculus I	4
COAD 1311: Design Studio I- Fundamentals	3
COAD 1312: Hand Drawing & Rendering Techniques	3
Total Hours: 15	

Second Semester	*Hours*
PSYC 1311: Intro to Psychology	3
ALIS 1211: Introduction to Islamic Culture	2
COMM 1312: Writing & Research	3
UNIV 1212: Critical Thinking	2
COAD 1313: Design Studio II- Fundamentals	3
COAD 1314: Construction Docs & Detail Drawings	3
Total Hours: 16	

Sophomore Program

First Semester	*Hours*

MATH 1423: Calculus II	4
ASSE 2111: Learning Outcome Assessment I	1
COAD 2332: Environmental Psychology for Design	3
ARCH 2341: Principles of Design with Climate	3
ARCH 2421: Design Studio III	4
COAD 2251: Digital Design I- 2D	2

Total Hours: 17

Second Semester	*Hours*
UNIV 1213: Leadership & Teamwork	2
COMM 2311: Oral Communication	3
PHYS 1421: Physics for Engineers I	4
ARCH 2342: Materials and Methods	3
ARCH 2422: Design Studio IV	1
COAD 2252: Digital Design II- 3D	2

Total Hours: 18

Junior Program

First Semester	*Hours*
COMM 2312: Technical Communication	3
ASSE 3211: Learning Outcome Assessment II	2
COAD 3341: Built World Design History and Theory I	2
COAD 3353: Digital Design III: BIM	3
ARCH 3523: Design Studio V	5

Total Hours: 16

Second Semester	*Hours*
ALIS 1212: The Social System in Islam	2
COAD 3322: Building Codes and Universal Design	3
COAD 3342: Built World Design History and Theory II	3
ARCH 3343: Principles of Structural Systems	3
ARCH 3524: Design Studio VI	5

Total Hours: 16

Senior Program

First Semester	*Hours*
Social Science Elective*	3
ARCH or COAD 43xx: Professional Elective	3
ARCH 4344: Introduction to Environmental Systems	3
ARCH 4354: Simulation and Optimization	3
ARCH 4525: Design Studio VII	5

Total Hours: 17

**Select any Social Science course from the College Core Curriculum.*

Second Semester	*Hours*
ARCH 4345: Architectural Structures	3
ARCH 4346: Integrated Environmental Systems	3
ARCH 4361: Preparing the Project Brief	3
ARCH 4362: Construction Process and Building Economics	3
ARCH 4526: Design Studio VIII	5

Total Hours: 17

Summer Semester
ARCH 4365: Internship (320 work hours) 3
Total Hours: 3

Fifth Year Program

First Semester	*Hours*
ALIS 2211: Linguistic Communication Skills	2
PHED 1111: Active Living Lifestyle	1
Natural Sciences Elective CHEM 1411 or BIOL 1411	4
ARCH 53xx: Professional Elective	3
ARCH 5327: Design Studio IX- Capstone Project Programming	3

Total Hours: 13

Second Semester	*Hours*
ALIS 2212: The Biography of Prophet Mohammad	2
PHED 1112: Healthy Behaviors and Management	1
ARCH 53xx: Professional Elective	3
ARCH 5363: Professional Practice and Ethics	3
ARCH 5628: Design Studio X- Capstone Project	6

Total Hours: 15

Interior Design

Total Semester Credit Hours: 126

Freshman Program

First Semester	*Hours*
COMM 1311: Written Communication	3
UNIV 1211: Professional Development	2
MATH 1311: Finite Math	3
PHED 1111: Active Living Lifestyle	1
COAD 1311: Design Studio I- Fundamentals	3
COAD 1312: Hand Drawing & Rendering Techniques	3

Total Hours: 15

Second Semester	*Hours*
PSYC 1311: Intro to Psychology	3
PHED 1112: Healthy Behaviors and Management	1
COMM 1312: Writing & Research	3
UNIV 1212: Critical Thinking	2
COAD 1313: Design Studio II- Fundamentals	3
COAD 1314: Construction Documents & Detail Drawings	3

Total Hours: 15

Sophomore Program

First Semester	*Hours*
COMM 2311: Oral Communication	3
UNIV 1213: Leadership & Teamwork	2

MATH	1312: Calculus for Business	3
IDES	2331: Materials for Interior Design	3
IDES	2311: Interior Design III Residential Design Studio	3
COAD	2251: Digital Design I- 2D	2

Total Hours: 16

Second Semester *Hours*

ASSE	2111: Learning Outcome Assessment I	1
COMM	2312: Technical Communication	3
PHYS	1411: Intro to Physics	4
IDES	2312: Interior Design IV- Comm.Prog.& Sp. Plan. Studio	3
COAD	2252: Digital Design II- 3D	2
COAD	2332: Environmental Psych for Design	3

Total Hours: 16

Junior Program

First Semester *Hours*

ALIS	1211: Introduction to Islamic Culture	2
ASSE	3211: Learning Outcome Assessment II	2
IDES	3411: Interior Design V Office Design Studio	4
COAD	3341: Built World Design History and Theory I	3
IDES	3321: Interior Building Systems	3
IDES	3331: Interior Lighting	3

Total Hours: 17

Second Semester *Hours*

ALIS	1212: The Social System in Islam	2
IDES	3353: Digital Design III- Building Information Modeling	3
IDES	3412: Interior Design VI Hospitality Design Studio	4
COAD	3342: Built World Design History and Theory II	3
COAD	3322: Building Codes and Universal Design	3

Total Hours: 15

Summer Semester

IDES	3338: Internship (320 work hours)	3

Total Hours: 3

Senior Program

First Semester *Hours*

ALIS	2211: Linguistic Communication Skills	2
CHEM	1411: Intro to Chemistry or BIOL 1411: Intro Biology	4
IDES	4425: Interior Design VII Healthcare Design Studio	4
IDES	4337: Sustainable Design	3
IDES	4112: Interior Design Capstone Research	1

Total Hours: 14

Second Semester *Hours*

ALIS	2212: The Biography of Prophet Mohammad	2
ECON	1311: Intro to Macroeconomics	3
IDES	4413: ID Capstone Project Studio	4

IDES 4343: Professional Practices	3
IDES or COAD XXXX: Professional Elective	3
Total Hours: 15	

Graphic Design

Total Semester Credit Hours: 125

Freshman Program

First Semester	*Hours*
COMM 1311: Written Communication	3
PHED 1111: Active Living Lifestyle	1
MATH 1311: Finite Math	3
GDES 1311: Drawing	3
GDES 1321: 2D Design	3
GDES 1331: Art Appreciation	3
Total Hours: 16	

Second Semester	*Hours*
UNIV 1211: Professional Development	2
PHED 1112: Healthy Behaviors and Management	1
COMM 1312: Writing & Research	3
GDES 1312: Digital Imaging	3
GDES 1322: 3D Design	3
GDES 1332: Art History	3
Total Hours: 15	

Sophomore Program

First Semester	*Hours*
COMM 2311: Oral Communication	3
UNIV 1212: Critical Thinking and Problem Solving	2
ASSE 2111: Learning Outcome Assessment I	1
GDES 2311: Typography I	3
GDES 2321: Illustration	3
GDES 2331: History of Visual Communication	3
Total Hours: 15	

Second Semester	*Hours*
ALIS 1211: Introduction to Islamic Culture	2
COMM 2312: Technical Communication	3
MATH 1313: Statistical Methods	3
GDES 2312: Arabic Typography	3
GDES 2322: Digital Photography	3
GDES 2332: Design Thinking	3
Total Hours: 17	

Junior Program

First Semester	*Hours*
ALIS 1212: The Social System in Islam	2
ASSE 3211: Learning Outcome Assessment II	2

Social and Behavioral Science Elective*	3
GDES 3311: Typography II	3
GDES 3321: Brand Identity	3
GDES 3331: Interaction I	3
Total Hours: 16	

Second Semester	*Hours*
ALIS 2211: Linguistic Communication Skills	2
Natural and Physical Science Elective**	4
GDES 3312: Information Design	3
GDES 3322: Motion Design	3
GDES 3332: Interaction II	3
Total Hours: 15	

Summer Semester

GDES 3338: Internship	3
Total Hours: 3	

Senior Program

First Semester	*Hours*
ALIS 2212: The Biography of Prophet Mohammad	2
UNIV 1213: Leadership & Teamwork	2
Social and Behavioral Science Elective*	3
GDES 4321: Advanced Graphic Design	3
GDES 4112: Graphic Design Capstone Research	1
GDES 43XX: Prof. Elective or GDES 4331: Special Topics	3
Total Hours: 14	

Second Semester	*Hours*
Natural and Physical Science Elective**	4
GDES 4413: GD Capstone Project	4
GDES 4322: Portfolio Development	3
GDES 43XX: Prof. Elective or GDES 4331: Special Topics	3
Total Hours:14	

**Select any Social Science course from the College Core Curriculum.*

***Select Physical or Natural Science course from the College Core Curriculum.*

UNDERGRADUATE COURSES OFFERED BY THE COLLEGE OF ARCHITETCURE AND DESIGN

Architecture – ARCH

COAD 1311: Design Studio I – Fundamentals 3 (1, 2) This foundation course exposes students to interior design as a profession utilizing new skills and knowledge. It focuses on learning about interior spaces through graphic conventions and hand drafting. **Pre-requisite:** PRPM 0022: Introductory Calculus or equivalent. **Co-requisite:** COAD 1312: Hand Drawing and Rendering Techniques.

COAD 1312: Hand Drawing and Rendering Techniques 3 (1, 2) Hand drawing and rendering are essential tools in interpreting ideas and visual thinking. The course focuses on simple, basic techniques for drawing and rendering. Even in the computer age, hand drawing is the designer's most useful tool for notation, design exploration, and graphic communication. This course will build skill and confidence through the techniques of hand drawing and rendering using various media. **Co-requisite:** COAD 1311: Design Studio I- Fundamentals

COAD 1313: Design Studio II- Fundamentals 3 (1, 2) This course is a continuation of the foundations class sequence begun in IDES 1311: Design Studio I- Fundamentals. It continues the introduction to professional skills and to written, graphic, and oral communication through creative projects. **Pre-requisites:** COAD 1311: Design Studio I- Fundamentals, COAD 1312: Hand Drawing and Rendering Techniques

COAD 1314: Construction Documents and Detail Drawing 3 (1, 2) This studio course covers architectural/interior environment construction documents and detail drawings that graphically represent and communicate how to construct and/or install a design project. **Pre-requisite:** COAD 1311: Design Studio I – Fundamentals. **Co-requisite:** COAD 1313: Design Studio II- Fundamentals

COAD 2332: Environmental Psychology for Design 3 (3, 0) The course introduces the students to the basic psychology of designing spaces and places for human occupancy. Concepts introduced provide students with a basic knowledge of crowding, territoriality, attitudes relative to personal space, personality, and the definition of space and privacy as they relate to both residential and non-residential environments. Other concepts include managing limited resources and the design of built environments. **Pre-requisites:** COAD 1313: Design Studio II- Fundamentals, PSYC 1311: Intro to Psychology

ARCH 2341: Principles of Design with Climate 3 (3, 0) This course provides an introduction to the fundamentals of climate-responsive design. It explores different climate regions around the world and presents examples of how vernacular and contemporary construction methods have responded to changes in climate conditions. The course uses a case studies approach to introduce the basic principles of thermal comfort, daylighting, ventilation, energy efficiency, and resource efficiency. Case studies from different climate regions will be used to illustrate the possible range of climatic responses. Special focus will be given to vernacular approaches to building in hot and dry areas. **Pre-requisites:** None

ARCH 2421: Design Studio III- Architectural Design 4 (1, 3) This course provides a foundational introduction to architecture and architectural design. The course is conceived to address the breadth of knowledge in architecture to encourage students to situate their learning in subsequent courses to begin to identify a future area of focus for their careers. The course will use a design studio method that involves project-based learning. **Pre-requisites:** COAD 1313: Design Studio II- Fundamentals **Co-requisites:** COAD 2251: Digital Design – 2D, ARCH 2332: Environmental Psychology

COAD 2251: Digital Design I – Computer Aided 2D Drawing 2 (1,1) This course is an introduction to computer drafting for architects and designers that teaches students the drafting skills required to produce two-dimensional architectural drawings. Small scale design projects (such a house, an art gallery, boutique, café, etc.) provides the site for students to gain an understanding of the commands and features of AutoCAD, or other standard of the industry, for designing and drawing architectural spaces. Students will expand other

computer and design skills through the design and development of interior design presentations developed through the use of Photoshop or other presentation media. **Pre-requisite:** COAD 1314: Construction Documents and Detail Drawings. **Co-requisite:** ARCH 2421: Design Studio III- Architectural Design.

ARCH 2342: Materials and Methods 3 (2,1) The course provides an introduction to concepts and skills fundamental to structure, construction, building enclosure, sustainability, and interior environments. Analysis and selection of materials, components, and assemblies are also explored. The course provides an introduction to the historic role of materials in architecture. **Pre-requisites:** None

ARCH 2422: Design Studio IV- Integrated Architectural Design 4 (1,3) This course provides a practical knowledge of materials and construction as they relate to architectural design. Working in teams, students will design and construct a small outdoor shelter. The course is conceived to address the breadth of knowledge in architecture to encourage students to situate their learning in subsequent courses and begin to identify a future area of focus for their careers. The course will use a design studio method that involves project-based learning. It will be carefully coordinated with ARCH 2342: Materials and Methods. **Pre-requisites:** ARCH 2421: Design Studio III- Architectural Design. **Co-requisites:** ARCH 2342: Materials and Methods, COAD 2252: Digital Design II.

COAD 2252: Digital Design II–Computer Aided 3D Modeling and Rendering 2 (1,1) This course is the second of two computer-aided drawing courses. Topics covered in this course include three-dimensional drafting or modeling and color rendering of an interior space. Students study space planning and dimensioning as it relates to the human body. Students explore the use of V-Ray rendering engine for improved design visualization. Other programs may be introduced as they become standards of the industry. **Pre-requisites**: COAD 2251: Digital Design I – Computer Aided 2D Drawing. **Co-requisite:** ARCH 2422: Design Studio IV- Integrated Architectural Design

COAD 3341: Built World Design History and Theory I 3 (3,0) The course surveys the evolution of architecture, design and theory inclusive of the Ancient World period, Classical World period, Middle Ages, Renaissance, Baroque and design work up to 1800CE. The student explores design choices and critically analyzes existing designs based on historical information. This course prepares students to participate in designing in a broader context. **Pre-requisite:** ARCH 2422: Design Studio IV- Integrated Architectural Design.

COAD 3353: Digital Design III - Building Information Modeling 3 (1,2) This course expands the student's professional skills in computer-aided design software through experience with building information modeling (BIM) using Revit Architecture, or any other standard of the industry, to build a virtual model and generate 2D and 3D views from the model. **Pre-requisite:** COAD 2252: Digital Design II-3D

ARCH 3523: Design Studio V- Architectural Design 5 (1,4) This course focuses on the integration of architectural theories and philosophy with environmental design systems; the study of theoretical approaches to graphic and analytical thinking, problem identification, and design dissemination through various media, case studies, and problem resolution; conditions and forces associated with a variety of building types; and the generation of design solutions. **Pre-requisites:** ARCH 2422: Design Studio IV- Integrated Architectural Design. **Co-requisite:** COAD 3353: Digital Design III - Building Information Modeling

COAD 3322: Building Codes and Universal Design 3 (3,0) This lecture course covers universal and barrier-free design, means of egress and the international building code as they apply to interior environments. **Pre-requisite:** ARCH 2342: Materials and Methods.

COAD 3342: Built World Design History and Theory II 3 (3,0) The course continues a survey of architecture, design and theoretical characteristics of specific design styles in selected cultures from 1800CE to the present. The progression and evolution of the design of the built environment throughout history gives an appreciation for humankind's achievements and aids in understanding

current design trends. **Pre-requisites**: COAD 3341: Built World Design History and Theory I

ARCH 3343: Principles of Structural Systems 3(3,0) This course provides an introduction to the principles of architectural structures as related to architectural design. It includes consideration of spatial, structural and aesthetic issues of building structural systems and introduces structural behavior, forces and responses in structural systems. **Pre-requisites:** ARCH 2342: Materials and Methods, PHYS 1421: Physics for Engineers I, MATH 1423: Calculus II

ARCH 3524: Design Studio VI- Integrated Architectural Design 5(1,4) This course focuses on the application of verbal, graphic, research, critical thinking, and fundamental design skills to architectural projects that emphasize the integration of architectural history and theory issues. **Pre-requisites:** ARCH 3523: Design Studio V- Architectural Design. **Co-requisite:** COAD 3342: Built World Design History and Theory II

ARCH 4344: Introduction to Environmental Systems 3 (3,0) This course provides an introduction to the design of environmentally responsive buildings and the natural and artificial systems that support them. It includes consideration of topics such as active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, acoustics, embodied energy and building services systems. **Pre-requisite:** ARCH 2341: Principles of Design with Climate

ARCH 4354: Simulation and Optimization 3(2,1) This course covers architectural design methods; collaboration with representatives of allied disciplines; search for solutions; simulation of various criteria, such as energy performance, structural performance, cost performance, lighting performance, visual performance, and code compliance; optimization and comparison of schemes; performance criteria; and selection of satisficing scheme. **Pre-requisites:** COAD 3353: Digital Design III- BIM, ARCH 3343: Principles of Structural Systems

ARCH 4525: Design Studio VII- Architectural Design 5(1,4) This course covers the application of verbal, graphic, research, critical thinking, and fundamental design skills to architectural projects that emphasize the integration of structural, environmental, life safety, building envelope systems, and building service systems. It also covers code compliance, resource conservation, cost control and economic analysis. **Pre-requisite:** ARCH 3524: Design Studio VI – Integrated Architectural Design, COAD 3322 Building Codes and Universal Design

ARCH 4345: Architectural Structures 3 (2,1) This course provides an advanced study of architectural structures. It considers the physical principles that govern classical statics and strength of materials as well as graphical and mathematical design of structural systems. The course also addresses considerations of the role of structural articulation in the design of buildings. **Pre-requisites:** ARCH 3343: Principles of Structural Systems. **Pre-requisite:** ARCH 4354: Simulation and Optimization. **Co-requisite:** ARCH 4526: Design Studio VIII- Integrated Architectural Design.

ARCH 4346: Integrated Environmental Systems 3 (2,1) This course covers advanced issues in the design of environmentally responsive buildings and the natural and artificial systems that support them, such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, acoustics and building services systems. It includes the use of appropriate performance assessment tools. **Pre-requisite:** ARCH 4344: Introduction to Environmental Systems. **Co-requisite:** ARCH 4526: Design Studio VIII- Integrated Architectural Design.

ARCH 4361: Preparing the Project Brief 3 (3,0) This course covers the contents of a project brief; methods for creating a brief; evidence-based design; fundamental concepts in environmental psychology and sociology; benchmarking; development of a basecase; and design using a brief. The course directly addresses research-informed design, one of the hallmarks of the PMU architecture program. **Pre-requisites:** UNIV 1213: Leadership & Teamwork, COAD 2332: Environmental Psychology for Design

ARCH 4362: Construction Process and Building Economics 3 (3,0) This course covers the development, design, construction, and operation of buildings; building market analysis; project financial structures; project scheduling; construction cost; facilities operations and management; and life cycle costing. It provides students with the context of architectural practice as related to clients, contractors, tenants, and society. **Pre-requisite:** ARCH 3343: Principles of structural systems.

ARCH 4526: Design Studio VIII- Integrated Architectural Design 5 (1,4) This course offers a comprehensive and integrated design studio focused on the integration of design theory with functionally sustainable environmental systems (ARCH 4345: Architectural Structures) and structural systems (ARCH 4346: Integrated Environmental Systems). It considers projects from site analysis and programming through design detailing.

The integrated studio combines a studio focus with the environmental systems and structural course materials. **Pre-requisites:** ARCH 4525: Design Studio VII- Architectural Design. **Co-requisites:** ARCH 4345: Integrated Architectural Structures, ARCH 4346: Integrated Environmental Systems.

ARCH 4365: Architecture Internship Course 3 (1,320) This course enables students to apply their studio and class experience to practical use in a work-world apprentice situation. Students have the opportunity to seek design employment in the surrounding geographic area or in the PMU Community Design Center, if it is established. **Pre-requisite:** Work & register in Summer after 4th year

ARCH 5327: Design Studio IX- Capstone Project Programming 3 (1,2) This first part of the capstone course in the Assessment Capstone Series is a research class that addresses the creative, professional, technical, and historical issues involved in a problem chosen and defined by the student. This course culminates in the formal presentation of a completed design program in preparation for the design segment of the capstone classes. **Pre-requisites:** ARCH 4526: Design Studio VIII- Integrated Architectural Design, ARCH 4365: Architecture Internship Course

ARCH 5363: Professional Practice and Ethics 3 (3,0) This course is a required course meeting accreditation standards and covers business, legal, and social issues in the practice of architecture; ethics in architecture and the environment; and architectural challenges of the 21st century. **Pre-requisite:** ARCH 4526 Design Studio VIII- Integrated Architectural Design

ARCH 5628: Design Studio X- Architectural Capstone 6 (1,5) The second part of capstone course in the Assessment Capstone Series is a design studio that addresses the creative, professional, technical, and historical issues involved in a problem chosen and defined by the student. This course culminates in the formal presentation of a unique solution to the problem as a part of the final professional portfolio. **Pre-requisites:** ARCH 5327: Design Studio IX- Capstone Project Programming.

Interior Design – IDES

COAD 1311: Design Studio I- Fundamentals 3 (1,2) This foundation course exposes students to architecture as a profession utilizing new skills and knowledge. It focuses on learning about architecture through graphic conventions and hand drafting. **Pre-requisite**: PRPM 0012: Intermediate Algebra. **Co-requisite:** COAD 1312: Hand Drawing and Rendering Techniques

COAD 1312: Hand Drawing and Rendering Techniques 3 (1,2) Hand drawing and rendering are essential tools in interpreting ideas and visual thinking. The course focuses on simple, basic techniques for drawing and rendering. Even in the computer age, hand drawing is the designer's most useful tool for notation, design exploration, and graphic communication. This course will build skill and confidence through the techniques of hand drawing and rendering using various media. **Co-requisite**: COAD 1311: Design Studio I- Fundamentals

COAD 1313: Design Studio II- Fundamentals 3 (1,2) This course is a continuation of the foundations

class sequence begun in COAD 1311: Design Studio I- Fundamentals. It continues the introduction to professional skills and to written, graphic, and oral communication through creative projects. **Pre-requisites:** COAD 1311: Design Studio I- Fundamentals, COAD 1312: Hand Drawing and Rendering Techniques.

COAD 1314: Construction Documents and Detail Drawings 3 (1,2) This studio course covers architectural/interior environment construction documents and detail drawings that graphically represent and communicate how to construct and/or install a design project. **Pre-requisite:** Pre-requisite: COAD 1311: Design Studio I- Fundamentals. **Co-requisite:** COAD 1313: Design Studio II- Fundamentals

IDES 2331: Materials for Interior Design 3 (3,0) The course covers the technical aspects of surface and structural materials in relation to function and appropriate application in the interior environment. It covers ways in which materials are communicated in design projects including: estimation, specification writing and contract documentation. **Pre-requisites:** IDES 2331: Design Studio II- Fundamentals.

IDES 2311: Interior Design III – Interior Design III- Residential Design Studio 3 (1,2) This course continues student learning of two-dimensional and three-dimensional hand drafting and representation of interior spaces while focusing on residential design. Students study the effects of light, color, furniture and decorative objects in residential design. Space planning and volumetric study as it relates to the human body are emphasized. **Pre-requisite:** COAD 1313: Design Studio II- Fundamentals, COAD1314: Construction Documents and Detail Drawings. **Co-requisite:** COAD 2251: Digital Design I.

COAD 2251: Digital Design I – Computer Aided 2D Drawing 2(1,1) This course is an introduction to computer drafting for architects and designers that teaches students the drafting skills required to produce two-dimensional architectural drawings. Small scale design projects (such a house, an art gallery, boutique, café, etc.) provides the site for students to gain an understanding of the commands and features of AutoCAD, or other standard of the industry, for designing and drawing architectural spaces. Students will expand other computer and design skills through the design and development of interior design presentations developed through the use of Photoshop or other presentation media. **Pre-requisites:** COAD 1314: Construction Documents and Detail Drawings. **Co-requisite:** IDES 2311: Interior Design III – Residential Design

IDES 2312: Interior Design IV- Commercial Programming and Space Planning Studio 3 (1,2) This class emphasizes the study of programming, complex space planning, circulation patterns and building codes related to non-residential design. It continues student learning of two-dimensional and three-dimensional hand and/or computer aided drafting and representation of interior spaces while focusing on non-residential design. **Pre-requisite:** IDES 2311: Interior Design III. **Co-requisite:** COAD 2252: Digital Design II.

COAD 2252: Digital Design II – Computer Aided 3D Modeling and Rendering 2 (1,1) This course is the second of three computer-aided drawing courses. Topics covered in this course include three-dimensional drafting or modeling and color rendering of architectural spaces. Students explore the use of V-Ray rendering engine for improved design visualization. Other programs may be introduced as they become standards of the industry. **Pre-requisite:** COAD 2251: Digital Design I – Computer Aided 2D Drawing. **Co-requisite:** Interior Design IV- Commercial Programming and Space Planning Studio 3

COAD 2332: Environmental Psychology for Design 3(3,0) The course introduces the students to the basic psychology of designing spaces and places for human occupancy. Concepts introduced provide students with a basic knowledge of crowding, territoriality, attitudes relative to personal space, personality, and the definition of space and privacy as they relate to both residential and non-residential environments. Other concepts include managing limited resources and the design of built environments. **Pre-requisites:** COAD 1313: Design Studio II- Fundamentals, PSYC 1311: Intro to Psychology.

IDES 3411: Interior Design V - Office Design Studio 4(1,3) This course focuses on contemporary approaches to office design projects. In addition to refining students design skills for non-residential projects, the studio emphasizes research and programming methods. Selection and

specification of office system products, finishes, and design of custom millwork balance practical aspects of practice with a design solution that meets client requirements for corporate branding and budget. **Pre-requisites:** IDES 2312: Interior Design IV, COAD 2252: Digital Design II.

COAD 3341: Built World Design History and Theory I 3(3,0) This lecture course covers standard interior building systems including partitions, ceilings, floors, and stairs. Students learn about glazing, woodwork, hardware, structural coordination, heating, ventilation, air conditioning, plumbing, and electrical distribution. **Pre-requisite:** COAD 2332: Environmental Psychology for Design.

IDES 3321: Interior Building Systems 3(3,0) The course continues to survey the history and evolution of furniture styles, decorative elements and motifs, and interior design with a concentration on the East, the Renaissance Period, the New World, and the Modern World. The progression and evolution of furniture styles, decoration, and the design of the interior environment throughout history gives an appreciation for humankind's achievements and aids in understanding current design trends. **Pre-requisite:** IDES 2331: Materials for Interior Design, COAD 1314: Construction Documents and Detail Drawings, PHYS 1411: Intro to Physics.

IDES 3331: Interior Lighting 3(2,1) This course focuses on lighting design for interior spaces. Students gain knowledge of the perception and psychological aspects of light as well as technical information related to current fixture types and appropriate application. **Pre-requisite:** COAD 1314: Construction Documents and Detail Drawings, IDES 2331: Materials for Interior Design, MATH 1312: Calculus for Business.

COAD 3353: Digital Design III - Building Information Modeling 3(1,2) This course expands the student's professional skills in computer-aided design software through experience with building information modeling (BIM) using Revit Architecture, or any other standard of the industry, to build a virtual model and generate 2D and 3D views from the model. **Pre-requisite:** COAD 2252: Digital Design II- 3D.

IDES 3412: Interior Design VI – Hospitality Design Studio 4(1,3) In this course, students develop a restaurant and hotel project that applies research and specific knowledge related to the hospitality industry. The course builds the student's ability to apply acquired interior design knowledge by adding specialized information and skills appropriate in the hospitality industry. **Pre-requisite:** IDES 3411 - Interior Design V.

COAD 3342: Built World Design History and Theory II 3(3,0) The course continues a survey of architecture, design and theoretical characteristics of specific design styles in selected cultures from 1800CE to the present. The progression and evolution of the design of the built environment throughout history gives an appreciation for humankind's achievements and aids in understanding current design trends. **Pre-requisites:** COAD 3341: Built World Design History and Theory I.
COAD 3322: Building Codes and Universal Design 3(3,0) This lecture course covers universal and barrier-free design, means of egress and the international building code as they apply to interior environments. **Pre-requisites:** IDES 3321: Interior Building Systems.

IDES 3338: Interior Design Internship 3(1,320) This course enables students to apply their studio and class experience to practical use in a work-world apprentice situation. Students have the opportunity to seek design employment in the surrounding geographic area or in the PMU Community Design Center, if it is established. **Pre-requisite:** Work & registered in Summer after 3rd year.

IDES 4425: Interior Design VII - Healthcare Design 4(1,3) The course focuses on the interior design of healthcare facilities including hospital and out-patient services. Emphasis is placed on emerging technologies as well as space planning critical to healthcare facilities. **Pre-requisites:** IDES 3412: Interior Design Studio VI – Hospitality.

IDES 4337: Sustainable Design 3(3,0) The course will expand the student's awareness of the relationship between ecology and the built environment. It exposes the student to sustainable design utilizing skills and

knowledge obtained in all previous IDES courses. **Pre-requisites:** IDES 3321: Interior Building Systems

IDES 4112: Interior Design Capstone Project Research 1(1,0) This first part of the capstone course in the Assessment Capstone Series is a research class that addresses the creative, professional, technical, and historical issues involved in a problem chosen and defined by the student. This course culminates in the formal presentation of a completed design program in preparation for the design segment of the capstone classes. **Pre-requisites:** IDES 3412: Interior Design Studio VI – Hospitality Design Studio, IDES 3338: Internship

IDES 4413: Interior Design Capstone Project 4(0,4) The second part of capstone course in the Assessment Capstone Series is a design studio that addresses the creative, professional, technical, and historical issues involved in a problem chosen and defined by the student. This course culminates in the formal presentation of a unique solution to the problem as a part of the final professional portfolio. **Pre-requisites:** IDES 4112: ID Capstone Project Research, IDES 4425: Interior Design VII- Healthcare Design

IDES 4343: Professional Practices for Interior Designers 3(3,0) This course covers standard practices and procedures of the interior design profession. Students gain knowledge of the history of the profession, ethics, business structures, organization, management, legal issues, fee structures, and promotional activities. **Pre-requisites:** IDES 4112- Interior Design Capstone Research.

Graphic Design – GDES

GDES 1311: Drawing 3 (1,2) This course focuses on the development of fundamental drawing skills. Students will develop skills in observing the physical environment and recording it on a two-dimensional surface with accuracy and sensitivity. Emphasis will be placed on developing core technical skills in a variety of drawing techniques and the exploration of various technical approaches to produce both descriptive and expressive drawings. **Pre-requisites:** There are no Pre-requisites to take this course.

GDES 1321: Two-Dimensional Design 3 (1,2) This course is the study of the elements and concepts of two-dimensional (2D) design, including the basic design principles and sources of design inspiration fundamental to all visual arts through readings, discussion, exercises and laboratory application. This is a visual design theory course that introduces the core concepts of visual design — visual elements, principles of design and creative process. Composition issues and strategies valid in all areas of visual design are explored through examples, exercises, critiques and creative projects. **Pre-requisites:** There are no Pre-requisites to take this course.

GDES 1331: Art Appreciation 3 (3,0) This course is a general introduction to art and aesthetics and their role in human life and culture. The course includes discussion and analysis of architecture, sculpture, painting, ceramics, drawing, printmaking, photography, design, and other art forms from various historical periods and world cultures. **Pre-requisite:** There are no Pre-requisites to take this course.

GDES 1312: Digital Imaging 3 (1,2) This course provides an introduction to computers as a creative tool and explores topics such as the development of image making techniques, data handling and image compositing. This course introduces students to the fundamentals of digital drawing. Students will undertake a series of projects that encompass traditional drawing skills and scanning methods. They will learn digital illustration techniques, image manipulation, layout, color, digital output and graphic design visual literacy. Students will investigate visual aesthetics and explore digital media to produce works of art. **Pre-requisite:** GDES 1311: Drawing

GDES 1322: Three-Dimensional Design 3 (1,2) This study of the elements and concepts of three-dimensional (3D) design introduces students to the fundamentals and technical principles of working three dimensionally. Students will experiment with a number of construction methods and materials used to create, represent, respond to and reflect on form in space. Students will read, watch and discuss perspectives on 3D art and design written/created by artists, curators, art historians and critics. Using this information as a springboard, they will create their own 3D works. **Pre-requisites:** GDES 1321: Two-Dimensional Design

GDES 1332: Art History 3 (3,0) This course surveys the arts of the Western and non-Western world from prehistoric eras through the 14th century. The course will consider both the formal development of art and its cultural/historical context. **Pre-requisite:** GDES 1331: Art Appreciation

GDES 2311: Typography I 3 (1,2) This course provides an introduction to the study of the letterform as a cornerstone of graphic design. It focuses on how typography can be used as a communicative device as well as a graphic, compositional and expressive element. Areas explored include letterform anatomy, letterform analysis, measuring systems, typographic identification and practical issues of setting and using type effectively. **Pre-requisites:** GDES 1321: 2D Design

GDES 2321: Illustration 3 (1,2) This is an introductory course to explore the professional field of illustration. Students will acquire fundamental illustration skills and become familiar with principal areas within the field, such as editorial, advertising and scientific-technical. Students will explore a variety of techniques, while developing critical thinking and problem-solving skills. Students will use their knowledge of drawing, design and style to communicate ideas graphically and start building a professional portfolio. **Pre-requisites:** GDES 1322: Three-Dimensional Design.

GDES 2331: History of Visual Communication 3 (3,0) This course provides a historical analysis of visual communication with emphasis on the development of the profession of graphic design and the relationship of commerce and technology to the history of graphic design. **Pre-requisite:** GDES 1332: Art History

GDES 2312: Arabic Typography 3 (1,2) This is an intermediate level course devoted to the study of the marriage of Latin and Arabic typography. This course develops the student's ability to create typographic designs by visually and aesthetically merging Arabic and Latin fonts. This multi-script combination targets the needs of the Arab market. Students will learn how to dissect fonts, create modules, experiment with type, generate Arabic adaptations and construct typographical patterns that evolve into 3D objects. The student further learns the rules of the typographic grid system in order to be able to experiment with breaking the grid while designing layouts, spreads and posters. **Pre-requisite:** GDES 2311: Typography I

GDES 2322: Digital Photography 3 (1,2) This course will introduce students to how to see and communicate using the medium of photography, focusing on digital single-lens reflex (D-SLR) cameras and computer/editing software as creative tools. Students will learn to understand the principles of light, exposure and frame composition. **Pre-requisite:** GDES 1312: Digital Imaging

GDES 2332: Design Thinking 3 (3,0) Design thinking refers to a creative and strategic process for problem finding and solving. In this course, students learn how to understand a problem and deliver a design concept to their project stakeholders from a systemic perspective with data and empathy. Students also learn prototyping and testing methods. **Pre-requisites:** GDES 2331: History of Visual Communication, UNIV 1212: Critical Thinking and problem solving

GDES 3311: Typography II 3 (1,2) This course is an advanced course that explores diverse typographic issues related to digital or screen-based communication. It expands on typographic principles and design elements for screen-based media while providing the groundwork for innovative and effective typographic and UI design practices. **Pre-requisite:** GDES 2311: Typography I

GDES 3321: Brand Identity 3 (1,2) This course covers the theory and practice of creating brand identity designs for products. Students will learn to combine typography, color theory and layout to form a cohesive brand identity and apply that identity across multiple platforms. Brand identity process and best practices will be explored. **Pre-requisite:** GDES 2311: Typography I, GDES 2321: Illustration

GDES 3331: Interaction Design I 3 (1,2) This course introduces the fundamental knowledge of website design. The Internet has been one of the essential tools in many people's everyday

lives from shopping to socializing. This course explores how to design well-organized and practical user interface and user experience (UI/UX) for various websites. **Pre-requisites:** GDES 2312: Arabic Typography, GDES 2322: Digital Photography, GDES 2332: Design Thinking

GDES 3312: Information Design 3 (1,2) This course is an intermediate-level course in information visualization. The purpose of this class is to help students develop the skills necessary to research, analyze and present both quantitative and qualitative information in ways that promote greater understanding of a subject. The final deliverables in the course may be either print and/or Web-based infographic narratives. **Pre-requisite:** GDES 3311: Typography II, GDES 3321: Brand Identity, GDES 3331: Interaction Design 1

GDES 3322: Motion Design 3 (1,2) This course will introduce students to effective communication using motion graphics, including its application in the areas of film titles, broadcast and commercial design, interactive media and gaming. The combination of music, visuals and typography will be explored following the basic theories of kinetic composition and aesthetics. Students will study the history of the field, including the work of pioneers in motion design. **Pre-requisites:** GDES 3311: Typography II, GDES 3321: Brand Identity, GDES 3331: Interaction Design I

GDES 3332: Interaction Design II 3 (1,2) Interaction Design 2 continues to explore user interface and user experience (UI/UX) design for screen. The course introduces designing for mobile applications and the Internet of Things (IoT). The chosen device for this course will be iOS-based mobile devices such as the iPhone and iPad tablet. Students will also learn how their design concepts can be transferred to other, Android-based platforms. **Pre-requisite:** GDES 3331: Interaction Design I

GDES 3338: Internship 3 (1,320) The goal of this internship is to provide students with a valuable opportunity to advance their professional development by applying learned concepts and skills to real-world settings. It will combine classroom learning with related practical job experience. More specifically, the internship will enable students to obtain practical knowledge of the graphic design profession by working for a business, agency or institution while enrolled in classes. An internship may lead to other positions within the host firm or increase a student's likelihood of finding employment with other similar organizations. The internship will be arranged jointly by the student, faculty member and a cooperating organization. **Pre-requisite:** Work & registered in Summer after 3rd year.

GDES 4321: Advanced Graphic Design 3 (1,2) This course offers students the opportunity to work on assigned problems within specific areas of experience design. Work is done on a contract basis with specific objectives and tangible results. **Pre-requisites:** GDES 3322: Motion Design, GDES 3332: Interaction Design II.

GDES 4112: Graphic Design Capstone Project Research 1 (1,0) In this course, students conduct a self-directed graphic design writing project, applying their cumulative knowledge of graphic design. Students demonstrate in-depth design research skill and comprehensive understanding of graphic design. Upon the completion of the course, students will present their projects through written components and an oral presentation. **Pre-requisites:** GDES 3338: Internship, GDES 3322: Motion Design, GDES 3332: Interaction Design II

GDES 4413: Graphic Design Capstone Project 4 (0,4) In this course, students continue their self-directed graphic design thesis project based on the written outcomes from GDES 4112: Graphic Design Capstone Project Research. The practicum component of this course allows students to apply the collective knowledge of graphic design to a defended undergraduate senior capstone project. **Pre-requisites:** GDES 4112: Graphic Design Capstone Project Research, GDES 4321: Advanced Graphic Design

GDES 4322: Portfolio Development 3 (1,2) In this course, students thoroughly organize and refine their previous graphic design works to create a strong portfolio to prepare for their career path after graduation. Students also learn how to develop a job application package, including cover letter,

resume, business card and portfolio website. **Pre-requisite:** GDES 4321: Advanced Graphic Design

COLLEGE OF COMPUTER ENGINEERING AND SCIENCE

College of Computer Engineering and Science
Office: Insert Building, Room
Phone: Insert Phone Number
FAX: Insert Fax Number
e-mail: Insert e-mail of Dean

_____, Ph.D., Dean

COLLEGE OVERVIEW

The College of Computer Engineering and Science accepts successful male and female students from PMU Preparatory Program. The classroom experience for students in the College of Computer Engineering and Science is highly student-centered, interactive, and communicative. Courses combine both theoretical and conceptual content, enhanced with practical and laboratory opportunities. Syllabi include techniques for incorporating opportunities for students to develop communication, teamwork, and leadership skills as part of an overall strategy for achieving the PMU core competencies. Graduates from the College of Computer Engineering and Science are self-directed, motivated, technically competent professionals with strong communication skills, capable of effective teamwork and leadership. The degree programs within the College of Computer Engineering and Science are:

- **The Bachelor of Science in Information Technology**. This degree program provides appropriate professional preparation for students working toward careers in Information Technology departments supporting the management and administration of information systems in commercial and public organizations.
- **The Bachelor of Science in Computer Science**. This degree program provides appropriate professional preparation for students working toward careers in software engineering, network administration and database administration for both commercial and public organizations. This program also offers excellent preparation for students intending to study at the advanced degree level.
- **The Bachelor of Science in Computer Engineering**. This degree program provides appropriate professional preparation for students working toward careers in hardware and network design, and systems integration. This program offers excellent preparation for students intending to study at the advanced degree level.

The College of Computer Engineering and Science provides the structure and organization for male and female students to successfully pursue degree programs in Information Technology, Computer Science, and Computer Engineering at the undergraduate level.

Vision and Mission

Vision

The College of Computer Engineering and Science provides a unique and distinguished academic unit that participates in:

- Preparing future Information Technology and Computer Science and Engineering professionals and leaders who can support the emergence of Saudi Arabia as a global IT resource.
- Enriching and developing Information Technology intellectual resources.
- Exploring innovative instructional methodologies and technologies to provide quality preparation of information technology professionals.
- Establishing communication and the exchange of ideas between the academic and business communities

Mission

The College of Computer Engineering and Science will achieve the following objectives:

- Contribute to advancement of human intelligence and to the promulgation and development of knowledge and understanding in the Information Technology domain.
- Prepare professionals in Information Technology and Computer Science and Engineering, through the utilization of innovative educational processes, in a modern technological environment.
- Transform the graduate to play a pioneering and leading role in the community, enabling him or her to take responsibilities and contribute to solving problems through innovative thinking, collective work, reflection, and self-development.
- Link academic programs and specializations with actual requirements of the surrounding work environment. This will be achieved by maintaining effective partnerships between the university and local business and industry.
- Guide research activities to create solutions for persistent problems in surrounding communities through applied research and technical consultation.
- Provide community service through continuous training and education.

Degrees Offered

The College of Computer Engineering and Science offers the following degree programs:

- ***Bachelor of Science in Information Technology***
- ***Bachelor of Science in Computer Science***
- ***Bachelor of Science in Computer Engineering***

ADMISSIONS PROCESS AND REQUIREMENTS

Admission to the College of Computer Engineering and Science is open to students who have successfully completed the PMU Preparation Year Program or who have met the university criteria for bypassing the program.

The degree programs in the College of **Computer Engineering and Science** are designed to accept both male and female students**.**

Required Courses in the Preparation Year Program

The PMU Preparation Year Program concentrates on English language, mathematics, and study skills. Within this program, the first semester math course, PRPM 0011: Introductory Algebra, is required of all students. However, during the second semester of mathematics, students have a choice of two tracks, depending on their desired major at the university.
Students seeking entrance to the College of Computer Engineering and Science are required to take PRPM 0022: Pre-Calculus, during the second semester of the Preparation Year Program.

PERFORMANCE EXPECTATIONS

Required Grade Average

The College of Computer Engineering and Science provides for minimum standards of academic performance from its students. Using a 4.0 scale for course grades, the College of Information Technology requires that students maintain minimum grades of:

2.0 in courses from the PMU Core Curriculum

2.0 in all degree-specific courses (courses from the Core Curriculum that IT students must complete beyond the minimum requirement)

2.25 in all courses required by the college (courses with the GEIT prefix)

2.5 in all courses within the academic discipline

A student who receives a D or F in any course is required to repeat the course (in the case of an elective, another elective may be selected) and to achieve the required grade point.

These students will be required to participate in tutoring and remediation programs offered by the college faculty and the PMU Learning Resources Center.

Student Computing Requirements

Students within the College of Computer Engineering and Science are required to have personal laptop computers. They will have access to the university-wide technology-infused environment including wireless Internet access.

Students in the college will have additional specific computing requirements that extend beyond the standard Microsoft Office applications of a typical laptop. They will require access to compilers, design tools, and specialized computing environments.

COMPONENTS OF DEGREE PROGRAMS

The degree programs in the College of Computer Engineering and Science consists of 132-137 semester credit hours.

Majors in IT, Computer Science, Computer Engineering

Each of the degree programs offered within the College of Computer Engineering and Science consists of five components.

General Education Requirements**.** These requirements for the University Core Curriculum and College Core Curriculum include 60 credit hours of courses in the PMU core competencies, communication, Arabic Language and Islamic Studies, physical education, mathematics, laboratory science, and social and behavioral sciences.

Degree-Specific Requirements. Each degree program has its own requirements for additional courses from the College Core Curriculum in support of the degree program. Those courses will primarily be drawn from mathematics and laboratory science courses. The degree-specific requirements are unique to each degree program.

College of Computer Engineering and Science Requirements**.** These requirements will consist of seven courses totaling 26 credit hours that are common to all degree programs within the College of Computer Engineering and Science. They represent a base of knowledge that is presumed for all IT and computing professionals. The courses within the College of Computer Engineering and Science that meet these requirements are designated with the prefix **GEIT**. The courses include the following:

GEIT1411: Computer Science I
GEIT1412: Computer Science II
GEIT2421: Data Structures
GEIT2291: Professional Ethics
GEIT2331: Mathematical Reasoning & Algorithmic Thinking
GEIT3331: Computer Organization
GEIT3341: Database 1
GEIT3351: Principles of Software Engineering
GEIT4361: Internship

Degree Program Requirements**.** Each degree program has unique requirements that different it from others within the college.

Electives. Each degree program identifies the available electives and any constraints that apply to the elective selection.

Capstone Series

Building on the sophomore and junior level Capstone Series courses required by the PMU Core Curriculum, the college's series is comprised of three courses, ASSE2111 Assessment 1, ASSE3211 Assessment 2, GEIT3351 Principles of Software Engineering and ASSE4311 Learning Outcome Assessment III.

GEIT 3351: Principles of Software Engineering. Examine the theory and practice of software development and maintenance with the focus being on the full software development life cycle, including coverage of tools, techniques, principles, and guidelines for software requirements, specification, design and implementation.

ASSE 4311: Learning Outcome Assessment III concentrates on the implementation, testing, debugging and maintenance of a designed software engineering solution.

COURSES REQUIRED FOR MAJORS

Information Technology

The Bachelor of Science in Information Technology is comprised of five components:

The PMU Core Curriculum. This core curriculum consists of 60 hours of coursework as described on page 87.

The College of Information Technology Requirements. These requirements consist of 22 hours of coursework contained in the seven college courses designated with the GEIT prefix as described on page 88.

Degree-Specific Requirements. These requirements represent support courses in mathematics, laboratory science and business. These requirements both specify and extend Core Curriculum requirements.

The Information Technology degree program extends the PMU College Core Curriculum mathematics requirement from six to nine semester credit hours of mathematics and specifies that the courses will be:

MATH1311: Finite Mathematics
MATH1312: Calculus for Student of business
MATH1313: Statistical Methods

University Core Curriculum requires 8 credit-hours semester hours of Natural and Physical Science:

Natural Science elective I & II

The Degree Program Requirements. These requirements consist of 34 hours of coursework as follows:

ITAP1311: Intro to IT
ITAP2312: Web Programming
ITAP2431: Network Management
ITAP3313: User Interface Development

ITAP3382: Business Intelligence
ITAP3383: Enterprise Resource Planning Systems
ITAP3431: Network Security
ITAP3471: Web Server Management
ITAP3411: Systems Programming
ITAP4371: e-Commerce

Electives. The Information Technology degree program requires three semester credit hours from the College of Business Administration including:

The Information Technology Degree Program requires nine semester credit hours of electives to be taken from an approved list of 3000 level and 4000 level courses within the College of Information Technology.

Computer Science

The Bachelor of Science in Computer Science is comprised of four components:

The PMU Core Curriculum. This core curriculum consists of 60 hours of coursework.

The College of Computer Engineering and Science Requirements.
These requirements consist of 26 hours of coursework contained in the eight college courses designated with the GEIT prefix plus 3 credit hours for the internship

Degree-Specific Requirements. These requirements represent support courses in mathematics, laboratory science and business. These requirements both specify and extend Core Curriculum requirements.

The Computer Science degree program extends the PMU College Core Curriculum mathematics requirement from six to 18 semester credit hours and specifies that the courses will be:

MATH1432: Calculus I
MATH1433: Calculus II
MATH2313: Probability and Statistics
MATH1324: Calculus III
MATH3433: Linear Algebra and Differential Equation

The Computer Science degree program extends the PMU College Core Curriculum requirement in Natural and Physical Sciences from eight to 12 semester credit hours and specifies that the courses will be:

PHYS 1412: Physics for Engineers I
PHYS 1413: Physics for Engineers II
Natural Science elective

The Degree Program Requirements. These requirements consist of 29hours of coursework as follows.

COSC2312: Web Programing
COSC3332: Discrete Structures and Combinatorial Analysis
COSC3411: Systems Programming
COSC3351: Algorithms I
COSC3361: Computer Networks
COSC4361: Operating Systems
COSC4362: Artificial Intelligence

COSC4363: Theory of Computation
COSC4461: Programming Languages

Electives: The Computer Science degree program requires 9 credit hours from the Computer Science/College at level 3000 or 4000 listed as CS Elective I to III.

Computer Engineering

The Bachelor of Science in Computer Engineering is comprised of five components:

The PMU Core Curriculum. This core curriculum consists of 60 hours of coursework as described on page 87.

Degree Specific Requirements. These requirements represent support courses in mathematics, laboratory science and business. These requirements both specify and extend Core Curriculum requirements. The degree-specific requirements add 15 credit hours to the degree program.

The Computer Engineering degree program extends the PMU College Core Curriculum mathematics requirement from six to 18 semester credit hours and specifies that the courses will be:

MATH 432: Calculus I
MATH1433: Calculus II
MATH1324: Calculus III
MATH2313: Probability and Statistics
MATH3433: Linear Algebra and Differential Equation

The Computer Engineering degree program extends the PMU College Core Curriculum requirement in Natural and Physical Sciences from 8 to 12 semester credit hours and specifies that the courses will be:

PHYS 1412: Physics for Engineers I
PHYS 1413: Physics for Engineers II
Plus, Natural Science elective

The College of Computer Engineering and Science Requirements**:** These requirements consist of 26 hours of coursework contained in the eight college courses designated with the GEIT prefix plus 3 credit hours for the internship.

GEIT1411: Computer Science I
GEIT2331: Mathematical Reasoning & Algorithmic Thinking
GEIT1412: Computer Science II
GEIT2421: Data Structures
GEIT2291: Professional Ethics
GEIT3331: Computer Organization
GEIT3341: Database 1
GEIT3351: Principles of Software Engineering
GEIT4361: Internship

The Degree Program Requirements**:** These requirements consist of 24 credit-hours of coursework as follows:

COEN2411: Circuits
COEN3361: Computer Networks
COEN3323: Digital and Logic Design
COEN3421: Electronics I
COEN4361: Operating Systems
COEN4413: Embedded Systems
COEN4322: Digital Signal Processing

Electives: The Computer Engineering degree program requires 12 Credit Hours to be taken as degree specific electives COEN Elective I. COEN Elective IV.

COURSE SEQUENCE FOR MAJORS

Information Technology

Total Semester Credit Hours: 128

Freshman Program

First Semester *Hours*

ALIS 1211: Introduction to Islamic Culture 2
COMM 1311: Written Communication 3
UNIV 1211: Professional Development and Competencies 2
MATH 1311: Finite Math 3
ITAP 1311: Intro to IT.....3
GEIT 1411: Computer Science I.....4
PHED 1111: Active Living Lifestyle 1
Total Hours:..... 18

Second Semester *Hours*

ALIS 1212: The Social System in Islam.....2
COMM 1312: Writing and Research 3
UNIV 1212: Critical Thinking and Problem Solving 2
MATH 1312: Calculus for Business 3
GEIT 1412: Computer Science II 4
PHED 1112: Healthy Behavior and Management 1
Total Hours:..... 15

Sophomore Program

First Semester *Hours*

ALIS 2211: Linguistic Communication Skills.....2
UNIV 1213: Leadership and Teamwork.....2
ASSE 2111: Learning Outcome Assessment I.....1
COMM 2311: Oral Communications 3
GEIT 2421: Data Structures.....4
MATH 1313: Statistical Methods 3
Social Science Elective* 3
Total Hours:..... 18

Second Semester *Hours*

ALIS 2211: The Biography of Prophet Mohammad.....2
COMM 2312: Technical and Professional Communications 3
ITAP 2312: Web Programming.....3
GEIT 2291: Professional Ethics.....2
GEIT 2331: Mathematical Reasoning and Algorithmic Thinking.....3
ITAP 2431: Network Management 4
Total Hours:..... 17

Junior Program

First Semester *Hours*

ASSE 3211: Learning Outcome Assessment II 2
GEIT 3341: Database I 3
ITAP 3431: Network Security.....4
GEIT 3331: Computer Organization.....3
ITAP 3313: User Interface Development.....3

IT Elective I*** 3

Total Hours:..... 18

Second Semester *Hours*

ITAP 3471: Web Server Administration 4
ITAP 3411: Systems Programming.....4
ITAP 3383: Enterprise Resource Planning Systems 3
GEIT 3351Principles of Software Engineering 3
ITAP 3382: Business Intelligence.....3

Total Hours:..... 17

Summer of Junior Year *Hours*

GEIT 3341: Database I 3

Total Hours:..... 3

Senior Program

First Semester *Hours*

ITAP 4371: e-Commerce 3
ASSE 4311: Learning Outcome Assessment III 3
IT Elective II*** 3
Natural Science Elective I**.....4

Total Hours:..... 13

Second Semester *Hours*

IT Elective III***.....3
Social Science Elective II* 3
MIS/Business Elective **** 3
Natural Science Elective II** 4

*** Social Science Electives:** ECON1311 Intro. to Macroeconomics, ECON1312 Intro. to Microeconomics, GEGR1311 World Regional Geography, HIST1311 World Civilization, PSYC1311 Intro. to Psychology, FREN1311 Introduction to French language, SUST 1311 Introduction to Sustainability

**** Natural Science Electives:** BIOL1411 Introductory Biology, CHEM1411 Introductory Chemistry, CHEM1421 Chemistry for Engineers I, CHEM1422 Chemistry for Engineers II, PHYS1411 Introductory Physics

***** IT Electives (Tracks):**

Software Development: ITAP4316 Introduction to Software Project Management, ITAP3315 Software Testing & Quality Assurance, ITAP4391 Reuse and Component-based, ITAP3371 Database II, ITAP4313 Advanced Visual Programming

Mobile/Web: ITAP4313 Advanced Visual Programming, ITAP3362 Mobile Applications Design and Development, ITAP3363 Principles of Open Source & Enterprise Computing with JAVA, ITAP4315 Cloud Computing, ITAP4314 Multimedia Computing and Applications

Security: ITAP4361 Operating Systems, ITAP4390 Information Security and Assurance, ITAP4396 Computer and Network Forensics, ITAP4376 Secure e-Commerce

Admin: ITAP4362 Network Administration, ITAP4363 Systems Administration, ITAP4367 Database Administration, ITAP4364 Performance Analysis of Computer Networks, ITAP4393 Special Topics

****** MIS/Business Electives:** Any 4000 level courses

Computer Science

Total Semester Credit Hours: 137

Freshman Program

First Semester *Hours*

ALIS 1211: Introduction to Islamic Culture 2
COMM 1311: Written Communication 3
UNIV 1211: Professional Development and Competencies 2
MATH 1422: Calculus I 4
GEIT 1411: Computer Science I 4
PHED 1111: Active Living Lifestyle 1
Total Hours: 16

Second Semester *Hours*

ALIS 1212: The Social System in Islam 2
COMM 1312: Writing and Research 3
UNIV 1212: Critical Thinking and Problem Solving 2
PHYS 1421: Physics for Engineers II 4
GEIT 1412: Computer Science II 4
MATH 1423: Calculus II 4
Total Hours: 19

Sophomore Program

First Semester *Hours*

ALIS 2211: Linguistic Communication Skills 2
UNIV 1213: Leadership and Teamwork 2
PHYS 1422: Physics for Engineers II 4
MATH 1324: Calculus III 3
GEIT 2421: Data Structures 4
COMM 2311: Oral Communication 3
PHED 1112: Healthy Behaviors and Management 1
Total Hours: 19

Second Semester *Hours*

ALIS 2212: Bibliography of Prophet Mohammad 2
COMM 2312: Technical and Professional Communications 3
ASSE 2111: Learning Outcome Assessment I 1
GEIT 2331: Math. Reasoning and Algorithmic Thinking 3
COSC 2312: Web Programming 3
GEIT 2291: Professional Ethics 2
MATH 2313: Probability and Statistics 3
Total Hours: 17

Junior Program

First Semester *Hours*

COSC 3332: Discrete Structures and Combinatorial Analysis 3
GEIT 3341: Database I 3
GEIT 3331: Computer Organization 3
MATH 3433: Linear Algebra and Differential Equation 4
ASSE 3211: Learning Outcome Assessment II 2

CS Elective I*** 3
Total Hours: 18

Second Semester *Hours*

GEIT 3351: Principles of Software Engineering 3
COSC3361: Computer Networks 3
COSC 3351: Algorithms I.....3
COSC 3341: Systems Programming.....4
Natural Science Elective ** 4
Total Hours: 17

Summer of Junior Year *Hours*

GEIT 4361: Internship 3
Total Hours: 3

Senior Program

First Semester *Hours*

COSC 4361: Operating Systems.....3
COSC 4461: Programming Languages.....4
ASSE 4311: Learning Outcome Assessment III 3
CS Elective II*** 3
Social Science Elective I*.....3
Total Hours: 16

Second Semester *Hours*

COSC 4362: Artificial Intelligence.....3
COSC 4363: Theory of Computation 3
Social Science Elective II* 3
CS Elective III***.....3
Total Hours: 12

*** Social Science Electives:** ECON1311 Intro. to Macroeconomics, ECON1312 Intro. to Microeconomics, GEGR1311 World Regional Geography, HIST1311 World Civilization, PSYC1311 Intro. to Psychology, FREN1311 Introduction to French language, SUST 1311 Introduction to Sustainability

**** Natural Science Electives**: BIOL1411 Introductory Biology, CHEM1411 Introductory Chemistry, CHEM1421 Chemistry for Engineers I, CHEM1422 Chemistry for Engineers II

***** CS Electives**: COSC3354 Introduction to Cryptography, COSC4371 Computer Graphics, ITAP3313 User Interface Development, COSC3359 Computer Animation, COSC3357 Logic and Formal Verification, COSC4373 Computer Vision, COSC4352 Formal Methods in Software Engineering, COSC4372 Distributed Systems and Algorithms, COSC4376 Bioinformatics, COSC4380 Quantum Information and Computation, COSC4393 Special Topics, COSC4311 Parallel Computing, COSC4364 Compilers, ITAP4371 e-Commerce, ITAP3371 Database II

Computer Engineering

Total Hours: 135

Freshman Program

First Semester	*Hours*
ALIS 1211: Introduction to Islamic Culture	2
COMM 1311: Written Communication	3
UNIV 1211: Professional Development and Competencies	2
MATH 1422: Calculus I	4
GEIT 1411: Computer Science I	4
PHED 1111: Physical Education	1
Total Hours:	**16**

Second Semester	*Hours*
ALIS 1212: The Social System in Islam	2
COMM 1312: Writing and Research	3
UNIV 1212: Critical Thinking and Problem Solving	2
PHYS 1421: Physics for Engineers I	4
MATH 1423: Calculus II	4
GEIT 1412: Computer Science II	4
Total Hours:	**19**

Sophomore Program

First Semester	*Hours*
ALIS 2211: Linguistic Communication Skills	2
UNIV 1213: Leadership and Teamwork	2
PHYS 1422: Physics for Engineers II	4
MATH 1324: Calculus III	3
GEIT 2421: Data Structures	4
COMM 2311: Oral Communication	3
PHED 1112: Healthy Behavior and Management	1
Total Hours:	**19**

Second Semester	*Hours*
ALIS 2212: The Biography of Prophet Mohammad	2
COMM 2312: Technical and Professional Communications	3
ASSE 2111: Learning Outcome Assessment I	1
GEIT 2331: Math. Reasoning and Algorithmic Thinking	3
COEN 2111: Circuits	4
GEIT 2291: Professional Ethics	2
GEIT 2291: Probability and Statistics	3
Total Hours:	**18**

Junior Program

First Semester	*Hours*
GEIT 3341: Database I	3
GEIT 3331: Computer Organization	3
MATH 3433: Linear Algebra and Differential Calculus	4
COEN 3323: Digital and Logic Design	3
CE Elective I***	3

Total Hours:.....16

Second Semester *Hours*

GEIT 3351: Principles of Software Engineering 3
GEIT 3361: Computer Networks.....3
ASSE 3211: Leaning Outcome Assessment II.....2
COEN 3421: Electronics.....4
CE Elective II***.....3
Total Hours:.....15

Summer of Junior Year *Hours*

GEIT 4361: Internship 3

Senior Program

First Semester *Hours*

COEN 4361: Operating Systems 3
ASSE 4311: Learning Outcome Assessment III 3
Natural Science Elective ** 4
CE Elective III*** 3
Social Science Elective I*.....3
Total Hours:.....16

Second Semester *Hours*

COEN 4413: Embedded Systems 4
Social Science Elective II* 3
COEN 4322: Digital Signal Processing.....3
CE Elective IV*** 3
Total Hours:.....13

*** Social Science Electives:** ECON1311 Intro. to Macroeconomics, ECON1312 Intro. to Microeconomics, GEGR1311 World Regional Geography, HIST1311 World Civilization, PSYC1311 Intro. to Psychology, FREN1311 Introduction to French language, SUST 1311 Introduction to Sustainability

**** Natural Science Electives:** BIOL1411 Introductory Biology, CHEM1411 Introductory Chemistry, CHEM1421 Chemistry for Engineers I, CHEM1422 Chemistry for Engineers II

***** CE Electives:** COSC3354 Introduction to Cryptography, COSC4371 Computer Graphics, COSC4373 Computer Vision, COEN4371 Synthesis with Hardware Description Languages, COEN4331 Microprocessor, COEN4393 Robotics, COEN4394 Digital Video Processing, COEN4395 Wireless and Mobile Computing, COEN4396 Modern Control Theory, COEN4393 Special Topics.

UNDERGRADUATE COURSES OFFERED BY THE COLLEGE OF COMPUTER ENGINEERING AND SCIENCE

GEIT 1411: Computer Science I 4 (3,2) - Computer Science I is an introduction to programming and to the use of algorithms in designing programs. A software engineering approach to developing computer programs is stressed and object-oriented concepts are introduced. The course examines standard control structures, approaches to modularization, and the use of primitive and structured data types.

GEIT 1412: Computer Science II 4 (3,2) - This course is a continuation and extension to GEIT 1411 Computer Science I. It introduces the student to a systematic study of basic data structures such as queues, stacks and binary trees including searching and sorting algorithms and their associated computational costs. A software engineering approach to developing computer programs is stressed and object-oriented concepts are emphasized. Reusability of code, effective software development

methodologies and good programming practices are significant components of the course.

GEIT 2291: Professional Ethics 2 (2,0) - This course is designed to educate students on the impact ethical issues have on the use of information technology in the modern business world. It examines the ethical codes of the professional societies and the philosophical bases of ethical decision-making. Students acquire the foundation that helps them make appropriate decisions when faced with ethical dilemmas.

GEIT 2331: Math. Reasoning and Alg. Thinking 3 (3,0) - Discrete Structures, in general, is the study of objects that have discrete as opposed to continuous values including the foundations of logic, algorithms and their complexity, mathematical reasoning, relations, graphs, trees and combinatorics. GEIT 2331: Mathematical Reasoning and Algorithmic Thinking is a mandatory course for all students in the College of Computer Engineering and Science and as such, its goal is to provide students with logical reasoning and other basic mathematical skills that will help them in subsequent courses in their programs and their future careers.

GEIT 2421: Data Structures 4 (3,2) - Data structures are the systematic study of some advanced data structures, including list, stack, queue, dictionary, and graph. Sorting and hashing algorithms and their associated computational costs are discussed. Algorithm analysis techniques are also investigated to provide a metric to measure the performance of an algorithm in question.

GEIT 3331: Computer Organization 3 (3,0) - This course examines the functional components of computer systems. Topics discussed include processors, memory types and hierarchies, buses, I/O, interrupts, etc. with emphasis on how they affect program execution, parameter passing and inter-program communications between programs written in diverse languages.

GEIT 3341: Database 1 3 (2,2) - The objective of this course is to give students an understanding of key issues related to database design and implementation to support the automation of key business processes in organizations. The course is designed so as to cover topics that are relevant from a database design and implementation perspective; particularly one that involves the provision of online access to data resources to a variety of physically distributed organizational users. It includes a mix of lectures (some of which are conducted in the laboratory) and discussions on contemporary articles from industry publications.

GEIT 3351: Principles of Software Engineering 3 (3,0) - The course is designed to provide an introduction to the theory and practice of software development and maintenance. The focus is on the full software development life cycle, including coverage of tools, techniques, principles, and guidelines for software requirements, specification, design and implementation. Particular emphasis is placed on the principles and methods used to develop and validate software requirements. Students are guided toward a better understanding of the various tasks and specialties that contribute to the development of a software product.

GEIT 4361: Practical Training_3 (3,0) - This course provides opportunities for students to apply the academic concepts, skills and techniques learned in their coursework to a professional work-oriented setting. The course offers the potential for a one-semester internship with a regional employer or a directed study course providing practical learning experiences that benefit the community.

ASSE 4311: Learning Assessment III 3 (3,0) - This is the capstone course required of all students pursuing an undergraduate degree program within the College of Information Technology. The

objective of this course is to bring together in an applied manner the knowledge and skills obtained by the students throughout their undergraduate program. The course is designed so as to cover topics that are relevant from an integrated IT systems design and implementation perspective. The term "integrated IT systems design and implementation" refers to complex collaborative efforts that bring together knowledge skills in the related areas of computer science, computer engineering, and information technology (as covered by the three undergraduate programs offered by the College of Information Technology). The course is very applied. One of its main components is a team project focusing on integrated IT systems design and implementation. The course also includes a mix of speakers' presentations, project work, and discussions on contemporary articles from industry publications.

ITAP 1311: Introduction to Information Technology 3 (3, 0) - This course is designed to provide the students with an introduction to information systems. It includes a discussion of the fundamental principles, generalizations, and theories of Information Technology. Students are exposed to many of the areas of information Technology including databases, telecommunications, Networking, software and hardware concepts, and information security. In essence this course provides information on the following topics:

ITAP 2312: Web Programming 3 (2, 2) - This course is designed to provide the students with an introduction to world wide web programming. It introduces the student to the techniques used in programming web pages for interactive content. It specifically addresses the basic elements of AJAX (Asynchronous JavaScript and XML) to design web pages that dynamically interact with databases that reside on a server. The course begins by reviewing basic web technologies i.e. HTML, CSS style sheets, and explores the use of event-driven programming in JavaScript to add interactive elements such as buttons and text fields to web pages. Students will be able to use AJAX tools to build web pages that connect to servers like Google to dynamically access data (maps, search results, videos, images, etc.). Students will know how to write their own server-side code to provide access to a custom database.

ITAP 2431: Network Management 4 (3,3) - This course introduces students to business data communications and networking concepts, tools and methods. The goal is to prepare students to apply networking tools and methods to the solution of business problems. The course covers the use of basic data communications and networking hardware such as hubs and routers, and of simple programming tools to customize and integrate existing software. It introduces networking, distributed transaction processing, and Web-related concepts. The course also covers concepts for managing distributed storage and connectivity related to data, voice, image, and video. Its specific focus is on Web-based systems. The course includes a mix of lectures, laboratory demonstrations and assignments, and discussions on contemporary articles from industry publications.

ITAP 3313: User Interface Development (3,0) - This is an introductory course to the subject of interaction design. It covers issues like the design of interactive products to support the way people communicate and interact in their everyday and working lives plus the design of spaces for human communication and interaction.

The goal of the course is to expose the students to the various techniques and methods relating to the subject, such that they can participate actively in the production and design of products and spaces that are Usable/User-Friendly. i.e. products and spaces that are both intuitive, easy to learn, effective to use and provide an enjoyable experience. The course ends with mobile interface design and implementation as an example of use of interaction design activities.

ITAP 3382: Business Intelligence 3 (3,0) - The objective of this course is to give students an understanding of key issues involved in business intelligence applications in organizations. The course is designed so as to cover topics that are relevant from a business intelligence perspective. It is oriented toward the provision of online access to aggregate data analysis results to a variety of physically distributed organizational users. It includes a mix of lectures (some of which are conducted in the laboratory) and discussions on contemporary articles from industry publications.

ITAP 3383: Enterprise Resource Planning Systems 3 (3,0) - The course is intended to introduce students to the underlying need for information and business process integration in large organizations. It takes an overview look at the functional areas of a business and the business processes that support the functional areas. The emphasis is on the use of advanced information technology for integrating business functions through distributed databases for support of internal business functions. It includes a discussion of the idea behind selection and implementation of enterprise resource planning (ERP) systems. A part of the course is set aside for demonstrations and "hands on" exercises with one of the available ERP software. Students use this software to perform some of the processes and tasks to create, track, and communicate enterprise information.

ITAP 3411: Systems Programming 4 (3,3) - Systems programming is the study of the basic programming principles and skills for building systems software, including the introduction to UNIX, shell programming, and Perl programming.

ITAP 3431: Network Security 4 (3,3) - This course examines the basic principles, techniques and technologies associated with securing local area networks. Topics covered include security threats, data protection including cryptography and authentication, a review of network security applications and techniques for the management of intruders, malicious software and other internal and external threats to the network

ITAP 3471: Web Server Management 4 (3,3) - The primary objective of this course is to give students a comprehensive overview of the tools and techniques needed to successfully administer Web servers. The course is designed so as to cover topics that are relevant to the role of a Web server administrator. Topics include installation, configuration, and administration of Web servers on common hardware/software platforms

ITAP 4371: E-Commerce 3 (3,0) - The primary objective of this course is to expose students to the advanced use of information technology in the design and implementation of Web-based business applications to support c-commerce. The course presents concepts, methodology, and tools for designing, implementing, and management of e-commerce applications in a business-to-business paradigm.

COSC2312: Web Programing 3 (2, 2) - This course is designed to provide the students with an introduction to world wide web programming. It introduces the student to the techniques used in programming web pages for interactive content. It specifically addresses the basic elements of AJAX (Asynchronous JavaScript and XML) to design web pages that dynamically interact with databases that reside on a server. The course begins by reviewing basic web technologies i.e. HTML, CSS style sheets, and explores the use of event-driven programming in JavaScript to add interactive elements such as buttons and text fields to web pages. Students will be able to use AJAX tools to build web pages that connect to servers like Google to dynamically access data (maps, search results, videos, images, etc.). Students will know how to write their own server-side code to provide access to a custom database.

COSC3332: Discrete Structures and Combinatorial Analysis 3 (3,0) - Discrete Structures and Combinatorial Analysis is the study of objects that have discrete as opposed to continuous values including counting techniques, relations, graphs, trees and combinatorics. Students of COSC 3332: Discrete Structures and Combinatorial Analysis develop the quantitative skills necessary for continued success in computer science. These skills enhance their ability to both analyze and describe mathematically many of the algorithms and data structure performance characteristics common to computer science as a discipline and to effectively communicate their solutions to fellow professionals. The course makes extensive use of the technology infrastructure of the school for communication within the class and between students and the instructor. Through the use of group tasks and projects this course establishes both mathematical reasoning skills and technical communication skills.

COSC3351: Algorithms 3 (3,0) - This course is the study of the design and performance analysis of algorithms. Time and space complexity analysis of algorithms, design paradigms, and graph algorithms are discussed.

COSC3361: Computer Networks 3 (3,0) - This course covers the architecture and protocols of local and wide area networks, including signaling, data representation, error control, flow control and routing. The Java-based interprocess communication API is used to provide practical examples of communication, error control and flow control. Peer to peer and client/server configurations based upon Unix/Linux and Windows architectures are explored. This course concentrates on theoretical and technical issues. Students in this course enhance their interpersonal and group effectiveness skills.

COSC3411: Systems Programming 4 (3,3) - Systems programming is the study of the basic programming principles and skills for building systems software, including the introduction to UNIX, shell programming, and Perl programming.

COSC4361: Operating Systems 3 (3,0) - This course is the study of the principles, purposes, and organization of operating systems. The goal is to prepare students an understanding of the theory as well as practices of the design and implementation of operating systems software.

COSC4362: Artificial Intelligence 3 (3,0) - The course presents an overview of artificial intelligence and its methods for solving problems. Basic algorithms for finding solutions to problems or adaptively improving responses to situations are discussed. Expert systems, genetic algorithms, and intelligent agents are among the areas that are explored.

COSC4363: Theory of Computation 3 (3,0) **-** This course is to give an introductory study of automata, formal languages, and computability, including set theory and countability, finite automata and regular languages, push-down automata and context-free languages, Turing machines, Church's thesis, halting problem, and incommutability.

COSC4461: Programming Languages 4 (3,3) - Programming Languages is the study of basic concepts and constructs underlying the design of the modern programming languages. Various programming paradigms, including object-oriented, functional, logic, and concurrent programming, are discussed.

COEN2411: Circuits I 4 (3,3) - This course covers important theory in DC and AC circuit analysis. Topics include a review of the solution of simultaneous equations; Kirchoff's Current and Voltage Laws; nodal and mesh circuit analysis; superposition; source transformations; thevenin and Norton Equivalent circuits; ideal op-amps; and RC, RL, and RLC circuits.

COEN 3323: Digital and Logic Design 3 (2,3) - This course addresses the understanding and design of digital systems. Topics progress through Boolean algebra and logic gates; combinational logic; sequential logic and synchronous sequential logic systems; and design of logic circuits.

COEN 3421: Electronics 4 (3,3) - This course addresses the use of electronic devices in analog and digital circuits. The lecture component covers device physics and modeling of op-amps, diodes, FETs, and BJTs; single and multi-stage amplifiers; differential amplifiers; feedback; frequency response; Bode plots. Laboratory component covers generation and acquisition of signals; current, voltage, and impedance measurements; transfer function measurement; and spectrum measurements and analysis.

COEN3361: Computer Networks 3 (3,0) - This course covers the architecture and protocols of local and wide area networks, including signaling, data representation, error control, flow control and routing. The Java-based intercrosses communication API is used to provide practical examples of communication, error control and flow control. Peer to peer and client/server configurations based upon Unix/Linux and Windows architectures are explored. This course concentrates on theoretical and technical issues. Students in this course enhance their interpersonal and group effectiveness skills.

COEN 4322: Digital Signal Processing 3 (2,3) - The course presents an overview of the nature of signals, the algorithms and techniques used to process those signals and the applications to which digital signal processing can be usefully put.

COEN4361: Operating Systems 3 (3,0) - This course is the study of the principles, purposes, and organization of operating systems. The goal is to prepare students an understanding of the theory as well as practices of the design and implementation of operating systems software.

COEN4413: Embedded Systems 4 (3,3) - This project-based course introduces the basic concepts of embedded systems. Embedded systems are generally optimized for size, speed and power consumption. This course will focus on handling these issues in the design and development of software for embedded system.

COLLEGE OF LAW

College of Law
Office: Law Building, Room T-36
Phone: 0138498880 Ext. 9721
e-mail: mbashayreh@pmu.edu.sa

Mohammad Bashayreh, Ph.D., Dean

OVERVIEW

The College of Law is a center for legal knowledge and professional training. The College provides an internationalized medium for learning with faculty members coming from different countries representing various legal systems. The College has learning facilities of highest standards: a well-equipped moot court and a legal clinic office.

Vision and Mission

Vision

To be one of the leading colleges of law in the region committed to fostering justice and serving the community through innovative legal education and research. To realize this vision, the College of Law endeavors to:

- Be a nationally and internationally accredited center of legal education.
- Offer law programs that meet the ongoing and prospective needs of the community and the changes in the legal profession.
- Produce legal research of impact.

Mission

The College of Law pursues the mission of excelling in teaching and legal research and serving the community. This mission is fulfilled through:

- Graduating students acquainted with good legal knowledge and ability to use it in a professional and ethical manner in serving their clients and the community, in domestic and international contexts and with a commitment to justice.
- Conducting legal research of impact that deepens the understanding of the law and contributes to its development.
- Providing community service through continuous professional training and education.

Degrees Offered

The College of Law offers a degree of Bachelor of Arts in Law.

ADMISSIONS PROCESS AND REQUIREMENTS

Admission to the College of Law is open to male and female students who have completed the PMU Preparation Year Program or who meet PMU's requirements for direct entry to the program.

Required Courses in the Preparation Year Program

The PMU Preparation Year Program concentrates on the English language, mathematics, and study skills. These requirements are taught in 95 contact hours.

Direct Entry Requirement:
A student may be admitted to the law program directly if he or she has passed the IELTS with a total score of 6 or higher and with no score less than 5.5.

PERFORMANCE EXPECTATIONS

Required Grade Average

Pursuant to PMU policy, the College of Law applies a four scale point average (GPA) system. The following grading system is used:

A+	4.00 grade points
A	3.75 grade points
B+	3.50 grade points
B	3.00 grade points
C+	2.50 grade points
C	2.00 grade points
D+	1.50 grade points
D	1.00 grade points
F	0 grade points
WF*	0 grade points

*Administrative Withdrawal

Students are required to maintain an overall GPA of 2.0.

If the student gets "D" or "F" in a course, he should repeat that course and to obtain the passing grade (D+ or more). In all the Preparation Year Program courses, the passing grade is C.

Length of the Program
The law program is designed to be completed in four years (eight semesters). A student admitted to and enrolled in a degree program usually registers for 15 to 19 credits each semester. The required minimum load for all students is 12 credits per semester, and the maximum load is 20 credits per semester, with certain exceptions.

Students must complete all degree requirements within eight years of admission to PMU as an undergraduate student, including leave time from the university.

COMPONENTS OF THE LAW DEGREE PROGRAM

The law degree program in the College of Law consists of 138 credit hours. The components of the degree plan are:

General Education Requirements**.** These requirements for the University Core Curriculum which develop 39 credit hours of courses in communication, Arabic Language and Islamic Studies, physical education, mathematics, laboratory science, and social and behavioral sciences.

Law Requirements. The law program has 93 credit hours of compulsory law courses and 6 credit hours of electives. The degree plan covers the major branches of law, including skills and profession-oriented courses (Internal Legal Practice; Legal Writing and Research, Legal Ethics) in addition to one experiential course (Internship).

Compulsory Courses: Compulsory courses include 67 credit hours taught in Arabic and 26 credit hours taught in English.

Electives. Law students have to study one elective course (2 credit hours) taught in Arabic and two electives (4 credit hours) taught in English.

Capstone Series

In the sophomore and junior level, Capstone Series courses required by the PMU Core Curriculum include Learning Outcome Assessment I and Learning Outcome Assessment II. The College of Law builds on that the legal capstone course: Learning Outcome Assessment III at which students carry out legal research and submit their work in writing and deliver an oral presentation.

COURSE SEQUENCE IN THE DEGREE PLAN

Bachelor of Law

Total Semester Credit Hours: **138**

Freshman Program

First Semester

		Hours
ALIS 1211:	Introduction to Islamic Culture	2
PHED 1111:	Active Living Lifestyle	1
COMM 1311:	Written Communication	3
UNIV 1213:	Leadership and Teamwork	2
UNIV 1211:	Prof. Development and Competencies	2
LAWB 1321:	Introduction to Law	3
Elective	Social Sciences Elective	3
	Total Hours: ……..	**16**

Second Semester

		Hours
ALIS 1212:	The Social System in Islam	2
PHED 1112:	Healthy Behavior and Management	1
COMM 1312:	Writing and Research	3
UNIV 1212:	Critical Thinking and Problem Solving	2
MATH 1313:	Statistical Methods	3
LAWB 1311:	Usul al-Fiqh	3
LAWB 1322:	Sources of Obligation	3
	Total Hours: ……..	**17**

Sophomore Program

First Semester		*Hours*
ALIS 2211:	Linguistic Communication Skills	2
ITLB 2211:	Intro. to Computer Concepts and Applications	2
LAWB 2323:	Provisions of Obligation	3
LAWC 2311:	Global Legal Systems	3
LAWB 2361:	Legal Writing and Research	3
COMM 2311:	Oral Communication	3
	Total Hours: ……..	**16**

Second Semester		*Hours*
ALIS 2212:	The Biography of Prophet Mohammad	2
ASSE 2111:	Learning Outcome Assessment I	1
COMM 2312:	Technical and Professional Communications	3
LAWB 2331:	Constitutional Law	3
LAWB 2351:	Commercial Law	3
LAWB 2341:	General Criminal Law	3
LAWB 2224:	Civil Contracts	2
	Total Hours: ……..	**17**

Junior Program

First Semester		*Hours*
LAWB 3362:	Legal Procedures and Methods of Proof	3
LAWB 3352:	Company Law and Bankruptcy	3
LAWB 3342:	Private Criminal Law	3
LAWB 3212:	Family Law	2
INTL 3321:	Public International Law	3
LAWB 3326:	Property & Assets	3
	Total Hours: ……..	**17**

Second Semester		*Hours*
ASSE 3211:	Learning Outcomes Assessment II	2
INTL 3322:	International Economic Law	3
LAWB 3325:	Labor Law and Social Security	3
LAWB 3332:	Administrative Law	3
LAWB 3363:	Criminal Procedure Law	3
LAWB 3313:	Law of Zakat and Taxation	3
	Total Hours: ……..	**17**

Senior Program

First Semester	*Hours*

INTL 4331:	Energy Law	3
LAWB 4314:	Wills and Inheritance	3
LAWB 4353:	Commercial Papers and Banking	3
LAWB 4333:	Administrative Judiciary	3
LAWC 4211:	Legal Ethics	2
LAWB 4364:	Internal Legal Practice	3
	Total Hours: ……..	**17**

First Semester		*Hours*
ASSE 4311:	Learning Assessment III	3
INTL 4341:	Alternative Dispute Settlement	3
INTL 4351:	Intellectual Property	3
LAWB 4371:	Law Private International Law	3
LAWE XXXX:	Law Elective (English)	2
LAWE XXXX:	Law Elective (English)	2
LAWE XXXX:	Law Elective (Arabic)	2
	Total Hours: ……..	**18**

*Students select two Law Elective from the following courses (English): *LAWE 4211: Media Law (English), LAWE 4212: Oil& Gas Law (English), LAWE 4213: Political system of Islam (English), LAWE 4214: Economic System of Islam (English), LAWE 4215: Environmental Law (English), LAWE 4216: Human Rights and Humanitarian Law (English), LAWE 4217: Cyber Law (English), LAWE 4218: Maritime Law & Space Law (English), LAWE 4219: Banking and Insurance Law, LAWE 4281: Psychology and Law, LAWE 4282: Sociology and Law, LAWE 4243: International Relations and Law. LAWE 4244: Transnational Crimes.*

*Students select one Law Elective from the following courses (Arabic): *LAWE 4221: International Organizations Law (Arabic), LAWE 4222: Arbitration Law (Arabic), LAWE 4223: Rules of Islamic jurisprudence (Arabic), LAWE 4224: Political Provisions(Arabic), LAWE 4258 Commercial Contracts, LAWE 4257 E-Commerce.*

** Students select one Social Science Elective from the following courses: *ECON 1311: Introduction to Macroeconomics, ECON 1312: Introduction to Microeconomics, GEGR 1311: World Regional Geography, HIST 1311: World Civilizations, PSYC 1311: Introduction to Psychology, SUST 1311: Introduction to Sustainability*, *FREN 1311: Introduction to French Language, SPAN 1311: Introduction to Spanish Language*

UNDERGRADUATE COURSES OFFERED BY THE COLLEGE OF LAW

BA in Law

LAWB 1321: Intro to Law (3) (Arabic)
Introduction to law introduces students to the fundamental legal principles which Saudi national legal systems are based on. The course is divided into two parts. The first part is designed to provide students with an understanding of the structure of the Saudi legal system, including the judicial system structure, legislative, sources of law and categories of law. The second part focuses on the theory of righteousness and the theory of sovereignty.

LAWB 1311: Usul al-figh (3) (Arabic)
This course presents students with the laws of evidence in reference to Shariah Law. This course provides students with different legitimate rules in Islam: defining al-hukm al-taklifi and al-hukm al-wadh`ei. This course, therefore, allows students to gain insight into the provisions of jurisprudence and sources of legislation, providing them with the essential foundations and knowledge to progress in the degree program.

LAWB 1322: Sources of Obligation (3) (Arabic)
1. The course examines the definition of the obligation, the general theory of contract, formation of a contract, classifications of types of contracts, valid, void, and voidable contracts, the unilateral will as a source of obligation, injurious act (tort), beneficial act (restitution). ***Pre-requisite: LAWB 1321***

LAWB 2323: Provisions of Obligation (3) (Arabic)
2. The course examines the modalities of the discharge of a civil obligation, the general theory of condition (precedent/resolutory), assignment, set-off, civil damages, and how to measure them. ***Pre-requisite: LAWB 1322***
3.
4. **LAWC 2311: Global Legal Systems (3)** (English)
5. This course outlines and explains to students the major legal systems in the world today and throughout history. Students will learn and investigate the different sources of law, legal divisions, legislation, and decided cases. Furthermore, students will gain an understanding of the social orders behind the legal systems, and the values that different legal systems strive to promote. ***Pre-requisite: LAWB 1321***

LAWB 2361: Legal Writing & Research (3) (Arabic)

This course aims to provide the student in developing the ways and methods of legal writing. It also provides the student with ample opportunities to improve their skills in legal analysis, writing, and research. The course will allow the student to analyze the legal problem presented and to draft an office memorandum. This course offers students an opportunity to gain an in-depth working knowledge of legal research resources and methods. ***Pre-requisite: LAWB 1321***

LAWB 2331: Constitutional Law (3) (Arabic)
The course defines the Constitution in terms of its making-methods, its sources, types, interpretation, amendment, termination of the constitution, and control over the constitutionality of laws. This course focuses on the study of the constitutional system in the Kingdom of Saudi Arabia.
Pre-requisite: LAWB 1321

LAWB 2351: Commercial Law (3) (Arabic)

The course focuses on Saudi commercial law: general rules and principles of commerce; enforcement methods; commercial acts; commercial registration law; commercial notebooks law; membership of Saudi Chamber of Commerce rules; settlement of commercial disputes. ***Pre-requisite: LAWB 1321***

LAWB 2341: General Criminal Law (3) (Arabic)
This course covers the general part of criminal law by examining the general rules and provisions concerning the elements of a crime and the territorial scope of application of criminal provisions of Shariah and the principle of non-retroactivity of criminal provisions. The course explains the conditions for criminal liability, attempted crime, complicity, and the general rules relating to punishment, the causes for increasing or reducing the punishment, causes exempting the doer from punishment, or that remove the criminal nature of the act. ***Pre-requisite: LAWB 1321***

LAWB 2224: Civil Contracts (2) (Arabic)
The course examines the formation and consequences of the contract of sale of goods and lease contracts. Other contracts may be studied, such as agency. ***Pre-requisite: LAWB 2323***

LAWB 3362: Legal Procedures and Methods of Proof (3) (Arabic)
The focus of this subject is the Saudi judicial system and civil trial. It introduces students to the Saudi judicial system and explores the qualification and competencies of judges, the criteria for their appointment, responsibilities and duties. The course also provides students with the knowledge and skills necessary to file civil lawsuits and address different types of evidentiary rules and methods. ***Pre-requisite: LAWB 2323***

LAWB 3352: Company Law and Bankruptcy (3) (Arabic)
The first part of this course aims to provide students with substantive knowledge about the formation, administration, and termination of commercial companies according to the new Saudi Companies' Law. It allows students to explore the difference between the rules and regulations for partnerships and corporations, and the penalties for breaching the companies law rules. This part also provides an overview of the ways of settling company law disputes. The second part of this course provides an overview of Saudi bankruptcy procedures, according to the new Bankruptcy Law, and the rules and procedures of the bankruptcy commission. ***Pre-requisite: LAWB 2351***

LAWB 3342: Private Criminal Law (3) (Arabic)
6. The course examines the elements of several crimes, namely: murder, assault, slander, theft, fraud and bribery. ***Pre-requisite: LAWB 2341***

LAWB 3212: Family Law (2) (Arabic)
This course introduces the students to the basic principles of family law and the relevant Shariah provisions. The course invites the student to think about contemporary matters of family law in Muslim society. The course trains the student to appreciate the role of the family and the rights and duties of the individual family member. It also examines the settlement of disputes of family law. The topics of the course include marriage, divorce, termination of marriage upon the wife's request and waiver of her financial right (khulu'). The student will be introduced to the multiplicity of Islamic fiqh in this area of law in order to balance differing juristic views. ***Pre-requisite: LAWB 1311***

INTL 3321: Public International Law (3) (English)
This course is intended as a general foundation of contemporary public international law. Through this course, students will gain a broad understanding of specialized areas of public international law, including the sources of international law, international customary law, the laws of treaties, jurisdiction and sovereignty, immunity, and state responsibility. Students will acquire further skills in examining and analyzing treaties, international conventions, judicial decisions, and scholarly

work. Students will gain experience in briefing cases and assessing their significance. Through the course, the students will increase their knowledge of international law and learn how to extract legal principles from various instruments, enhancing their critical thinking skills, which will improve their employability competencies required for their future careers. ***Pre-requisite: LAWC 2311***

LAWB 3326: Property & Assets (3) (Arabic)
This course provides an explanation of the rules that give the holder rights authority to use or exploit it and dispose of it or a part of this power. It will allow students to explore the property rights and the other rights derived from it. ***Pre-requisite: LAWB 2323***

INTL 3322: International Economic Law (3) (English)
The course will consider the international economic legal order - specifically, the whole array of international economic legal instruments, regulations, treaties and practices that impact a range of issues on trade law, international investment law, and international financial and monetary law. The course will do so through consideration of the relevant: regional trade agreements; bilateral investment treaties; multilateral international economic treaties; the roles of the WTO; the roles of the international financial and monetary regimes, including the IMF and others such as the Asian Development Bank; and individual state unilateral IEL activities, be they domestic or international in orientation. ***Pre-requisite: INTL 3321***

LAWB 3325: Labor Law and Social Security (3) (Arabic)
The course first part focuses on Saudi labor law: its rules and methods of enforcement; labor contract and its parties' obligations; labor group contract; training contract; holidays sick leaves; labor dispute settlement; terminating labor contract.
Part two focuses on Saudi social security law: rules concerning social security; the sources of funding for social security; the rights of the insured in the cases of temporarily stopping employment, inability to work, retirement, death accidental or natural. ***Pre-requisite: LAWB 2323***

LAWB 3332: Administrative Law (3) (Arabic)
This course defines Administrative Law, its principles, characteristics and its relation with other fields of Law. It introduces students to basic concepts and issues in Administrative Law and examines the functions of public authorities and administrations. It also describes the administrative centralization and decentralization, and the administrative activity in terms of public interest, administrative control and judicial means of administration. This includes the administrative decision, administrative contracts and public funds, as well as the judicial control over administrative actions and its effects, and the rights and disciplines of the government employees. ***Pre-requisite: LAWB 2331***

LAWB 3363: Criminal Procedure Law (3) (Arabic)
The course examines the initiation of criminal proceedings and the trial phase and the guarantees of a fair trial. ***Pre-requisite: LAWB 3342***

LAWB 3315: Law of Zakat and Taxation (3) (Arabic)
7. This course presents students with the concept of taxation, the system of the imposition of the tax, its basic rules and its difference from Zakat. This course provides students with a system of tax in the Kingdom. This course, therefore, allows students to gain insight into the fundamental principles regulating laws of Zakat and Taxation, enabling them to understand the operation systems as well as the application of Zakat and Taxation in the KSA. ***Pre-requisite: LAWB 1311***

LAWB 4365: Internship (3)
The Internship is offered during the summer of the junior year. It allows students to have practical applications of the knowledge, skills, and attributes they have developed during candidature. As a practical course, it establishes a link between the candidate's academic studies and the industry.

Students are required to complete 320 working hours in a legal office or firms over two months, with eight hours of work daily. ***Pre-requisite: End of Junior Year (summer before graduation) and department approval.***

INTL 4331: Energy Law (3) (English)
This course examines the different forms of energy and looks into how resources are managed and organized by states and international organizations. The course will pay specific attention to how energy interacts with climate change the push for sustainability in international law and politics. Furthermore, the course will frame energy law in the context of global trade, competition, waste management and other areas related to national and international dimensions. ***Pre-requisite: Senior Level***

LAWB 4316: Wills and Inheritance (3) (Arabic)

8. This course presents students with the division of estate and inheritance among the beneficiates in reference to Shariah Law. This course also allows students to gain insight into the common inheritance disputes, enabling them to provide accurate defenses and Shariah justifications for such disputes' resolutions. Through this course, students will be able to examine inheritance and wills case, improving their analytical abilities and preparing them for their career as future lawyers. ***Pre-requisite: LAWB 3212***

LAWB 4353: Commercial Papers and Banking (3) (Arabic)

9. The course provides students with the essential knowledge and cognitive ability about the law regulating commercial papers in Saudi. The course examines rules relating to violations and penalties of the commercial papers law. The course also outlines the underlying legal principles, defines the elements of bank accounts and highlights the nature of bank transfer and benefits in reference to Saudi Law. The course introduces rules about the bank operations and provisions of the legitimate and legal methods of dispute resolutions as regulated by the law. It enables students to distinguish between different banking operations in Saudi. ***Pre-requisite: LAWB 3352***

LAWB 4333: Administrative Judiciary (3) (Arabic)
10. The course examines the procedural and substantive requirements to bring an action before the Bureau of Grievances, the principle of legality, the liability arising from administrative contracts, the grounds to challenge an administrative decision. ***Pre-requisite: LAWB 3332***

LAWC 4211: Legal Ethics (2) (English)
This course develops students' decision-making and critical thinking skills in critical areas of legal ethics. It provides students with an understanding of the theories of ethics within the context of the legal profession. It covers the professional codes of conduct that lawyers and legal consultants must abide by ethical rules passed by relevant legal associations. The course focuses on illustrating the basic concepts and principles governing the ethical practice of law for lawyers. It provides students with the tools for identifying and solving ethical issues, so students will be able to formulate reasoned and persuasive arguments, and acquire the knowledge necessary to solve ethical dilemmas. Concepts related to confidentiality, conflict of interest, negligence, dispute resolution, and business ethics will be explored. ***Pre-requisite: Senior Level***

LAWB 4364: Internal Legal Practice (3) (Arabic)
Through this course, the students will understand, examine and categorize different case studies, improving their cognitive abilities in relating and comparing their acquired theory to the practical field. Students will also be able to perform and understand the different legal roles encountered in the legal field, enhancing their skills and capabilities required in practice. This course will allow students to compare the laws and their elements in theory and practice. ***Pre-requisites: LAWB 3362, LAWB 3363***

INTL 4341: Alternative Dispute Settlement (3) (English)
The general objective of the course is to provide the students with knowledge on alternative ways of dispute resolution by introducing existing opportunities for specific types of disputes, but also addressing core aspects of mediation and arbitration. After successfully passing the course, the student is well aware of alternative methods for dispute resolution, able to choose the most suitable one under specific circumstances and possesses the basic skills necessary for participating in such a procedure. The course addresses differences between court procedure and its alternatives and explains when one should prefer one or another way of dispute resolution. The course emphasis is put on the introduction of mediation and arbitration. ***Pre-requisite: Senior Level***

INTL 4351: Intellectual Property Law (3) (English)
This course provides an in-depth overview of the fundamentals of Intellectual Property law. It will cover copyright and related rights, trademarks, geographical indications, industrial design patents, WIPO treaties, unfair competition, protection of new varieties of plants, and the development of the WIPO Development Agenda. The course will also discuss those treaties which Saudi Arabian has signed and it will further discuss Saudi Arabian related Legislation. The course will discuss the fundamental concepts and protections ordinarily provided in comparative jurisdiction for intellectual property rights. It will also cover the principal multinational agreements relating to intellectual property, including the Paris Convention for the Protection of Industrial Property, the Berne Convention for the Protection of Literary and Artistic Property, and the WTO Agreement on Trade-Related Aspects of Intellectual Property (TRIPS). The course will also cover the implementation of these agreements within the domestic law of Saudi Arabia. ***Pre-requisite: Senior Level***

LAWB 4371: Private International Law (3) (Arabic)
11. The course examines the rules of conflict of laws to determine the applicable law to various legal relationships with an international element. It discusses the role of public policy in overriding the foreign applicable law. Also, the course examines the situations where Saudi courts have jurisdiction to hear cases involving international elements, and the legal regime of citizenship in Saudi Arabia. ***Pre-requisite: LAWB 3362***

12.

Law Elective English Courses (Pre-requisite: Senior level)

LAWE 4211: Media Law (2)
The course provides students with an understanding of the various aspects of media law and introduces them to the vital legal, ethical, and policy issues related to media. This will be achieved by allowing them to assess cases as well as analytical articles. The students will examine the broad context as well as existing media laws and policies and will assess ethical issues that are relevant to media conduct. The course will include the historical framework of media law, the main concepts: the right to privacy, hate speech, freedom of speech and the press, parody law, advertisement related rights, copyrights and trademarks, regulation of electronic media, freedom of information and media ownership.

LAWE 4212: Oil and Gas Law (2)
This course will explain to students how various countries regulate their oil and gas industries. The course will introduce the basics of the oil and gas industries and will provide an overview of the contract types prevalent in various jurisdictions. Furthermore, the course will place oil and gas in the international context of law and policy through an examination of the international organizations that shape and influence oil and gas, such as OPEC. In addition, students will learn how international environmental law, maritime law, and energy security law and policies interact with the oil and gas industry.

LAWE 4213: Political System of Islam (2)

This course covers key concepts, principles, and scope of the political systems of Islam. Various topics will include but not limited to the Ummah – the idea of a universal Community; the Shari'ah: the cosmic law of Islam; The Khilafah and Islamic Theory of Government; Shura'; Ijtihad and Ijma in the Early Islamic State; Basis of Political Obligation in Islam; Muhammad's sociological Jurisprudence; the important legal values of equality before law including responsibility and compensatory Justice.

LAWE 4214: Economic System of Islam (2)
The course is an overview of the legal foundation of the Islamic Economic system. It explains the fundamental principles of Islamic finance and their application to Islamic finance transactions. It provides students with an international perspective to reflect on the global nature of the industry and accepted practices. It is designed to emphasize the interrelated dynamics of Islamic law and the Islamic Economy. It covers the fundamental theories of law and economics and compares them with the Islamic System of Economics. Macroeconomics issues such as the total output, interest rates, inflation, and unemployment will be compared to Islamic Economy and with case studies explaining how to tackle these issues and find remedies. The goal is to give students a sufficient understanding of the Islamic System of Economics to counter global economic problems.

LAWE 4215: Environmental Law (2)
The course highlights concepts related to environmentalism, environmental problems, environmental discourse, and the role of law. It also explores environmental law in the legal culture of the United States, Europe, and the Kingdom of Saudi Arabia. The main principles of international environmental law will be discussed concerning charting context-specific and national legal, environmental regulations.

LAWE 4216: Human Rights and Humanitarian Law (2)
The goal of this course is, first, to understand that the evolution of the concept of human rights and its institutionalization was a complex and political process and that what we today understand as human rights is also a political construction. A second goal is to be able to discern different theoretical understandings of human rights and to assess contemporary human rights discourses critically.

LAWE 4217: Cyber Law (2)
This subject introduces students to the fundamental rights and regulations affecting privacy and data protection. The course will examine essential concepts and principles in the area, as well as the emergence and scope of data protection. It identifies and demonstrates how various sources of law are used to deal with cyber issues with particular reference to the Saudi legislative framework. Next, the course will look at a variety of forms of cybercrime as well as the legal mechanism employed and explores the implication, opportunities, and challenges presented by the information age. The course will also review the moral right in the virtual age and international regime in relation to copyrights. Lastly, students will appreciate an understanding of the future prospects and challenges of cyber regulation and enforcement.

LAWE 4218: Maritime and Space Law (2)
Maritime law is a complex mix of general principles of maritime, contracts as well as tort law. The course introduces students to essential concepts and principles relating to the maritime sector relating to ownership and flag of vessels, navigation, collision, towage, salvage, maritime security, the arrest of a vessel as well as maritime security issues including piracy, terrorism, and other maritime threats. Students will learn to recognize and apply sources of laws, legal principles, global and States' practices on outer space exploration, exploitation, and liabilities.

LAWE 4219: Banking and Insurance Law (2)
The course gives an overview of the bank as a monetary agency in domestic transactions. It provides students with an analysis of the banker and customer relationship, explaining the different types of accounts. Students will examine international differences in banking structures and environments such as banking systems in the United States, Western Europe, Transition countries, Latin America, Japan, and the developing nations of Asia. It explores the monetary policy, antitrust policy, and the international investment law policy and provides an overview of the Macroeconomic perspectives in Banking. It also analyses current issues in international investment law.

LAWE 4281: Psychology and Law (2)
This course is an overview of the psychological field. It provides students with an understanding of the interrelatedness and interconnectedness of psychology and law. The course covers topics such as testimony, investigative interviewing, jury decision making, and sentencing as a human process to restorative justice, police prejudice, and offender profiling. It examines the ways of minimizing undesirable influences on judicial decision making and discusses procedures for dealing with witnesses and suspects. It highlights the legal aspects of eyewitness testimony confidentially in psychological practice, psychological evaluation for the courts. The course allows students to identify the commonalities and differences that cut across psychology and law.

LAWE 4282: Sociology and Law (2)
This course introduces the students to the field of socio-legal studies. It explains key concepts, theoretical, and methodological approaches used in sociological work and their interaction with the law. Thus, the course constitutes an interdisciplinary study that places the law in the context of social institutions.

LAWE 4243: International Relations and Law (2)
This course introduces students to the study of international relations (IR), focusing primarily on the international actors and systems at the heart of the discipline. In doing so, it considers several topics of interest. These include the evolution of IR during the 20th century; the impact of key historical events on the development of the discipline, including the Peace of Westphalia, European imperialism, and the First World War; changes to the international system since the end of the Cold War; the history of globalization and its influence on the evolution of the discipline's main theories and concepts; the meaning of anarchy and systems in IR's understanding of the world; some of the similarities and differences between mainstream approaches to IR – particularly Liberalism, Realism, and Marxism; alternative theories of world politics presented by some of IR's newer theoretical schools – particularly Constructivism, post colonialism, and international political economy; the difficulties implicit in defining and limiting war between and within states; the contentious place of peace in international society; the role and responsibilities of the state as one actor among many in the international system; our changing understanding of international power; the impact of globalization and the end of the Cold War on actors' definitions of security; the difficulties of global governance in an anarchic international society; and the likely impact of Asia's (especially China's) rise on the units, processes, and structures of the international system.

LAWE 4244: Transnational Crimes (2)
This course will examine the diverse dimensions of what is called transnational organized crime. The course offers a comprehensive, multidimensional look into the major activities, groups, causes, and policing strategies related to transnational organized crime. In particular, the focus of this course is on the historical and contemporary patterns, modus operandi, capabilities, and vulnerabilities of transnational criminals and organizations. Course content includes an introduction to transnational crime, illegal cross-border trade such as the trafficking in drugs, arms, and humans, weapons sales, human smuggling and trafficking, the convergence of funding sources, and the effects of technology. A review of contemporary approaches to combating transnational crime and area studies covering the United States, Europe, Russia, and the Middle East.

Law Elective Arabic Courses (Pre-requisite: Senior level)

LAWE 4221: International Organizations Law
This course studies the origins of an international organization and the types of these organizations. The course focuses on the Charter of the United Nations. It explains the organs of the United Nations, their competences and the voting system, and the debate concerning possible reforms in the UN system. The course also looks at major regional organizations.

LAWE 4222: Arbitration Law (2)
This course focuses on teaching Saudi arbitration's rules and procedures: their history and importance, arbitration agreement, arbitration procedure, duties of arbitrators and arbitration committee, enforcement of awards. The instructor will use new materials, and cases concerning the enforcement of foreign arbitration awards issued by the Saudi Board of Grievances.

LAWE 4223: Rules of Islamic Jurisprudence (2)
This course explains the discipline of legal maxims of Shariah and distinguishes it from similar Shariah disciplines. The course outlines the principal and secondary sources of legal maxims and the classification of these maxims and their development with time. The course examines whether settled legal maxims can be of themselves a source to work out Shariah rulings. The course studies, in particular, five major legal maxims in Shariah that are accepted by all juristic schools.

LAWE 4224: Political Provisions (2)
This course presents students with several state examples following political systems adhering to Islamic Shariah, through which students will thoroughly acquire knowledge about the Shariah political systems and analytically examine the current political Fiqh.

LAWE 4258: Commercial Contracts (2)
13. The course examines the characteristics of commercial contracts, as opposed to civil contracts, to apply the general principles of commercial law to them. The course covers the formation and consequences of specific contacts: brokerage, distributorship, commercial agency, commercial mortgage, and carriage of goods and passengers by road.

LAWE 4257: E-Commerce (2)
14. The course examines the formation of E-contracts, the definition, and requirements of digital signatures, and the need for harmonization of national laws on E-commerce.

15.