



Sultan Qaboos University

COLLEGE OF ENGINEERING BULLETIN



The Academic Year 2024-2025



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Information in this Bulletin is generally accurate as of Fall 2024. The College reserves the right to change courses, programs, and the academic calendar, or to make other changes deemed necessary or desirable, giving an advance notice of the changes when possible.

College of Engineering Administration

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| Saida Hamed Al Mashaikhi, <i>Student Affairs Specialist, ADUS</i> | 2020 | 24142686 |
| Hanan Abdullah Al Shuaily, <i>Coordinator, ADPGSR</i> | 2020 | 24142686 |
| Abdullah Omar Al-Ojaily, <i>Clerk, ADTCS</i> | 2009 | 24141359 |
| Moadh A. Al-Zadjali, <i>Clerk, ADTCS</i> | 2018 | 24142667 |
| Wafa Hamad Al-Nabhani, <i>Coordination & Follow-Up & Archive Specialist (B), CAE</i> | 2046 | 24141331 |
| Noora Hilal Al Arafati, <i>Coordination and Follow Up Specialist, ECE</i> | 2066 | 24141390 |
| Amina Al Balushi, <i>Coordination & Follow-Up & Archive Specialist (C), ECE</i> | 2066 | 24141330 |
| Khazina Al Kalbani, <i>Coordination & Follow-Up & Archive Specialist (C), MIE</i> | 2056 | 24142549 |
| Thuraya Al Salmi, <i>Coordination & Follow-Up & Archive Specialist (B), PCE</i> | 1002 | 24141354 |
| Abdulhamid Abdullah, <i>TJER Secretary</i> | 2064 | 24141392 |
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| Mohammed Said Al Sabti, <i>Textbook Storekeeper</i> | 0017 | 24142562 |
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| Rahma Salim Al Baloushi, <i>Computer Technician B</i> | 1006 | 24141341 |
| Issa Salem Al-Fori, <i>Clerk, DOA Office</i> | 2016 | 24142584 |
| Ahmed Al Aghbari, <i>Messenger</i> | 2016 | 24142584 |

Last update on Aug 05, 2024

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Academic Calendar 2024 - 2025

| Date | Week | Event |
|-------------|------|---|
| 1-Sep-2024 | 1 | Orientation and FP Testing |
| 8-Sep-2024 | 2 | |
| Fall 2024 | | |
| 15-Sep-2024 | 1 | First week of classes 19-09-2024 Add and Drop period ends End of incomplete grades period (Summer 2024) *15 /9/2024 Prophets Birthday |
| 22-Sep-2024 | 2 | 1st week for withdraw with a grade of (W) |
| 29-Sep-2024 | 3 | 2nd week for withdraw with a grade of (W) |
| 06-Oct-2024 | 4 | 3rd week for withdraw with a grade of (W) |
| 13-Oct-2024 | 5 | 4th week for withdraw with a grade of (W) |
| 20-Oct-2024 | 6 | 5th week for withdraw with a grade of (W) |
| 27-Oct-2024 | 7 | 6th week for withdraw with a grade of (W) |
| 03-Nov-2024 | 8 | 7th week for withdraw with a grade of (W) |
| 10-Nov-2024 | 9 | 8th week for withdraw with a grade of (W) Start of Academic Advising for Probation Students |
| 17-Nov-2024 | 10 | 21-11-2024 Last day for withdraw with a grade of (W) *18-11-2024 National Day |
| 24-Nov-2024 | 11 | 28/11/2024 End postpone semester |
| 01-Dec-2024 | 12 | |
| 08-Dec-2024 | 13 | • Publish Spring master timetable (2025 Spring) |
| 15-Dec-2024 | 14 | Online registration for (2025 Spring) starts Final exams for electives courses |
| 22-Dec-2024 | 15 | 26/12/2024 Last day of classes |
| 29-Dec-2024 | 16 | First week of final examination |
| 05-Jan-2025 | 17 | Second week of final examination |
| 12-Jan-2025 | 18 | Start of accepting SQU internal transfer Transfer to SQU period starts End of Fall – Break 1 |
| 19-Jan-2025 | 19 | End of Fall - Break 2 |
| 26-Jan-2025 | 20 | End of Fall - Break 3 •08/02/2024 Prophet Ascension (Memory of Isra & Mi'raj)* |

Spring 2025

| | | |
|-------------|---|---|
| 02-Feb-2025 | 1 | First week of classes 06/02/2025 add/drop period ends End of incomplete grades period (Fall 2024) |
| 09-Feb-2025 | 2 | 1st week for withdraw with a grade of (W) |
| 16-Feb-2025 | 3 | 2nd week for withdraw with a grade of (W) |

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| | | |
|--------------------|----|---|
| 23-Feb-2025 | 4 | 3rd week for withdraw with a grade of (W) |
| 02-Mar-2025 | 5 | 4th week for withdraw with a grade of (W) *10/03/2025 Ramadhan* |
| 09-Mar-2025 | 6 | 5th week for withdraw with a grade of (W) |
| 16-Mar-2025 | 7 | 6th week for withdraw with a grade of (W) |
| 23-Mar-2025 | 8 | 7th week for withdraw with a grade of (W) Publish Summer master timetable (2025) |
| 30-Mar-2025 | 9 | 8th week for withdraw with a grade of (W) Start of academic advising for probation students *31/03/2025 Eid Al-Fitr |
| 06-Apr-2025 | 10 | 10/04/2025 Last day for withdraw with a grade of (W) End transfer to university (SQU) period |
| 13-Apr-2025 | 11 | 17/04/2025 End postpone semester |
| 20-Apr-2025 | 12 | |
| 27-Apr-2025 | 13 | |
| 04-May-2025 | 14 | Final exams for elective courses |
| 11-May-2025 | 15 | 15/05/2025 Last day of classes |
| 18-May-2025 | 16 | First week of final examinations |
| 25-May-2025 | 17 | Second week of final examinations |
| 01-Jun-2025 | 18 | End of Spring - Break 1 |
| 08-Jun-2025 | 19 | End of Spring - Break 2 *07/06/2025 Eid Adha |
| 15-Jun-2025 | 20 | End of Spring - Break 3 |
| Summer 2025 | | |
| 22-Jun-2025 | 1 | First week of classes 24\06\2025 Add/Drop period ends End of incomplete grades period (Spring 2025) |
| 29-Jun-2025 | 2 | 2nd week for withdraw with a grade of (W) |
| 06-Jul-2025 | 3 | 3rd week for withdraw with a grade of (W) |
| 13-Jul-2025 | 4 | 17/07/2024 Last day for withdraw with a grade of (W) Publish master timetable (Fall2025) |
| 20-Jul-2025 | 5 | Online registration for Fall semester (Fall2025) starts 23/07/2025 Renaissance Day |
| 27-Jul-2024 | 6 | |
| 03-Aug-2024 | 7 | |
| 10-Aug-2024 | 8 | 15/08/2025 Last day of classes |
| 17-Aug-2024 | 9 | Final examination week |
| 24-Aug-2024 | 10 | Start of accepting SQU internal transfer End Summer – Break1 |
| 31-Aug-2024 | 11 | Start receiving new undergraduate batch admitted to SQU End of Summer – Break 2 |
| 07-Sep-2024 | 12 | End of Summer – Break 3 |
| 14-Sep-2024 | 13 | *14/09/2025 Fall Semester starts |

***Approximate Dates**

Last update on Aug 05, 2024

1. GENERAL INFORMATION**1.1 HISTORY**

The College of Engineering started its academic programs in 1986 when Sultan Qaboos University accepted its first batch of students. It serves to provide an engineering education to the Omani youth that will enable them to participate in the development of Oman. In 1991, its first batch of sixty engineers graduated. By the end of 2024, more than 7909 young Omani engineers have graduated from its halls.

The College of Engineering offers programs which lead to the Bachelor of Engineering degree in: Civil Engineering, Architectural Engineering, Mechanical Engineering, Industrial Engineering, Petroleum & Natural Gas Engineering, Chemical & Process Engineering, Electrical & Computer Engineering (Communications & Signal Processing), Electrical & Computer Engineering (Power & Systems Energy), Electrical & Computer Engineering (Computer Systems & Networks), Electrical & Computer Engineering (Electronic Instrumentation and Control) and Mechatronics Engineering. The College offers also Master's Degree Programs in Civil Engineering (Water Resources), Civil Engineering, Mechanical Engineering, Industrial Engineering, Electrical and Computer Engineering and Petroleum and Natural Gas Engineering. The college also offers Agriculture Engineering as a joint program with College of Agriculture and Marine Science.

The College has steadily increased its new student admission. The number of students admitted in the first batch in 1986 was 86 students, while about 460 students were admitted in 2023 with 20% females. The student population in the College is now near 2397 students in undergraduate programs and around 247 in Postgraduate programs.

1.2 VISION AND MISSION**VISION**

To continue its leading role in engineering education, innovative research and community service in the region and beyond.

MISSION

To excel in engineering education, research and innovation, and community service by promoting the principles of engineering analysis, design and creative thinking, and participating in the exchange of knowledge with national and international communities.

Objectives:

- To prepare highly qualified engineers who are capable of assuming professional careers and pursuing graduate studies.
- To conduct scientific research to expand knowledge in the scientific and engineering fields, and to find engineering solutions to problems faced by society.
- To provide continuing education and to disseminate engineering knowledge through conferences, short courses, workshops, consultation and seminars.
- To promote regional and international cooperation with reputable universities throughout the world.

2. STRUCTURE

2.1 DEANSHIP

The College operates within the Charter of the University. At present, the College structure comprises of the Office of the Dean, the College Board and four Departments.

The *Dean* heads the College and is responsible for managing the Academic, Administrative and Financial Affairs of the College. He is assisted by three Assistant Deans, a Director of Administration and coordinators.

The *Assistant Dean for Undergraduate Studies (ADUS)* provides information regarding academic regulations and curricula. He coordinates and follows up the academic affairs of students, such as preparation of degree programs, timetabling, advising and registration. This is done in coordination with the Deanship of Admissions and Registration, other Colleges, the Centre of Preparatory Studies, Deanship of Students Affairs and among the College Departments. The ADUS office prepares and maintains student records, prepares lists of student examination results for each semester for the College Board.

The *Assistant Dean for Postgraduate Studies and Research (ADPGSR)* manages the research activities of the College by coordinating with the Office of Post-Graduate Studies and Research, other Colleges, Centres and non-University organizations. The Office allocates College research funds to research projects and prepares the annual research report. The Office supervises and coordinates the administration of graduate programs in the College. The Assistant Dean for Postgraduate Studies and Research also liaises with the University administration on the organization of conferences, seminars, workshops and exhibitions. In addition, the office also follows up the progress of Demonstrators and Assistant Lecturers on scholarships and study leave.

The *Assistant Dean for Training and Community Service (ADTCS)* exposes the students to the actual engineering practice via industrial training where this training is compulsory for every student graduating from the College. Through industrial training students are able to correlate what they have learnt at the University with what is being practiced in industry. The trainees are usually involved in a range of activities during training. These activities include design, analysis, manufacturing, testing, regulatory affairs, etc.

ADTCS keeps its Alumni records to continuously cooperate with them and keep them aware of the educational, research and social activities within the College. Moreover, the ADTCS office keeps a close tie and continuous interaction with the Industry.

The *Director of Administration (DoA)* liaises with the University Administration on administrative, personnel and financial affairs related to the College. The director is responsible for recruitment, public relation, transportation, and maintenance of the College facilities. The director is responsible for the College staff records and files.

PRE-SPECIALIZATION ACADEMIC ADVISING UNIT (PAAU) -**Location of PAAU (وحدة الإرشاد الأكاديمي قبل التخصص)**

"Pre-specialization Academic Advising Unit " [PAAU] at the College of Engineering is the first unit of its kind at SQU. PAAU was established in Fall 2014. The rationale behind the creation or the main purpose of establishing the unit is to address the need of proper on-time advice to those students whose major is not specified or allocated yet. This transition period for students might take 1-2 years after admission at SQU. Also, its task is to coordinate with the Foundation Program office and Admission and Registration office of SQU for smooth registration of those students. The College of Engineering has developed its functions and allocated a temporary place at the college till the new building is constructed. It has been operational since Fall-2014 for all the students who have not specialized yet. Two faculty members from each department, with experience in curriculum and advisement, are assigned to the unit.

Four members (one from each department) will be available to give advice for three weeks including the period of add and drop in each semester. After this period advisor can be contacted in their office during office hours.

Current members:

| <i>Seq</i> | <i>Staff Name</i> | <i>Department</i> |
|------------|---------------------------------|-------------------|
| 1 | <i>Dr. Hamoud Al Hadrami</i> | <i>PCE</i> |
| 2 | <i>Dr. Belal Tarboush</i> | <i>PCE</i> |
| 3 | <i>Prof. Alaa Al Muhtaseb</i> | <i>PCE</i> |
| 4 | <i>Dr. Suleiman Al Obaidani</i> | <i>MIE</i> |
| 5 | <i>Dr. Khurshid Alam</i> | <i>MIE</i> |
| 6 | <i>Dr. Mohammed Othman</i> | <i>MIE</i> |
| 7 | <i>Dr. Mohammed El-Diasty</i> | <i>CAE</i> |
| 8 | <i>Dr. Mohammad Reza</i> | <i>CAE</i> |
| 9 | <i>Dr. Naima Benkari</i> | <i>CAE</i> |
| 10 | <i>Dr. Ahmed Chiheb Ammari</i> | <i>ECE</i> |
| 11 | <i>Dr. Rami Al Hmouz</i> | <i>ECE</i> |
| 12 | <i>Dr. Lazhar Khriji</i> | <i>ECE</i> |

2.2 DEPARTMENTS

At present, the College has four departments:

1. Department of Civil and Architectural Engineering.
2. Department of Electrical and Computer Engineering.
3. Department of Mechanical and Industrial Engineering.
4. Department of Petroleum and Chemical Engineering.

Each department has a Head of Department (HoD) who is also part of the academic staff. Other staff members include a secretary and academic and technical staff. Each department has a board that consists of HoD as a chair, all members of the academic staff and a senior member of the technical staff. The Departmental Board normally meets once a month.

2.3 COMMITTEES

Students are represented in the following two committees:

1. Departmental Staff/Student Liaison Committee:

Composition: Head of Department (Chair), two major students, preferably one senior male and one senior female where applicable per cohort, selected by the students. Those students should be in a good standing and not under any current disciplinary action. At least one faculty member selected by the Department Board should be a member of the Committee.

- Functions :
- i. The main purpose of the committee is to provide a forum for students to express their views on academic issues in their department, related to their programs and courses, and the teaching and learning environment.
 - ii. Issues are addressed through discussion, and where appropriate follow-up with the appropriate individuals and departments.
 - iii. Issues of an individual student nature or a specific student grade are not addressed in this committee.
 - iv. The committee meets at least once per semester. Meetings are minuted.

2. College Staff/Student Liaison Committee:

Composition: Dean (Chair), Assistant Dean for Undergraduate Studies, two students preferably one male and one female per cohort, selected from members of the Department Committees, two students, one male and one female, selected from students not yet assigned to a major (pre-major). Two faculty members selected by the College Board.

- Functions : i. The main purpose of the committee is to provide a forum for students to express their views on matters affecting their learning experience. These may be related to their department, other departments or colleges. Typically, these would include items or issues referred by the department committees.

- ii. Depending on the nature of the issues under discussion, the committee may invite staff from the college or other units of the University to hear their views.
- iii. The committee may refer items to the College Board for discussion and/or action.
- v. Issues of an individual student nature or a specific student grade fall outside this committee's remit.
- vi. The committee meets at least once a semester. Meetings are minuted and the minutes are submitted to the College Board.

The College of Engineering also has 18 other major committees which meet at least twice per semester. Chairs report on the activities of their committees to the College Board. Other standing or Adhoc Committees may be formed by the Dean or the College Board. The list of these committees is as follows:

- College Executive Committee
- College Space Allocation Committee
- College Postgraduate Studies & Research Committee
- College Information & Communication Technology Committee
- College Quality Assurance & Academic Accreditation Committee
- College Industrial Training & Community Service Committee
- College Risk Management Committee
- College Publication & Web Committee
- College Probation Advisory Committee
- College of Engineering Society Advisors Committee
- College Social Activity Committee
- College Student-Staff Liaison Committee
- College Strategic Planning & Development Committee
- College Academic Promotions Committee
- College Steering Committee for Mechatronics Engineering Program
- College Agriculture-Engineering Program Committee
- College Pre-Specialization Academic Advising Unit (PAAU)
- College Technical Staff Training Committee
- College Advising Committee
- College Media Committee
- College Renewable & Sustainable Energy Committee
- College IR4 Committee
- College Industrial Advisory Board

3. UNDERGRADUATE PROGRAMS**3.1 ADMISSION**

Admission to the College of Engineering is conducted through the Deanship of Admissions and Registration. The College places particular emphasis on quality education and admission criteria ensures the selection of the best students. Students must have passed the General High School Examination (Science Section) with a minimum grade of B in Mathematics and Physics and a minimum grade of C in Chemistry.

3.1.1 University Entrance

One week before classes start in September, new students go through an orientation program that is organized by the Deanship of Students Affairs in coordination with all the Colleges, Centres and Deanship of Admissions and Registration. Students are welcome to the University and its campus to make their change to the new University environment more comfortable. Identification Cards are issued to them. Students get to know their accommodation and important University facilities such as cafeteria, clinic, library, computer center and recreational facilities. Students are also introduced to the different University Rules and Academic Advising, such as course registration procedures and academic rules. Students visit their Colleges and meet their academic advisors during the orientation week. They also take Placement Tests to determine their aptitude in the English Language, Mathematics and Computing skills (See section on GFP)

3.1.2 Centre for Preparatory Studies Foundation Program (CPSFP)- English

The Center for Preparatory Studies (CPS) at Sultan Qaboos University (SQU) offers Foundation Program (FP) courses, a pre-requisite qualification for entrance to the degree programs in the university, in conformity with the requirements of Oman Academic Standards. The program was introduced at SQU in the 2010/2011 academic year. The FP has been designed to help adequately prepare admitted students undertake university level education by helping them achieve the prescribed learning outcomes in the four areas: English language, Mathematics, Information Technology and General Study Skills. The Center for Preparatory Studies at SQU consists of course work in three areas: English language, Mathematics and IT. All students should satisfy the FP requirements by either showing accepted alternative qualifications in these areas or achieving exit test standards. The exit test standards in these courses are measured in terms of prescribed student learning outcomes. Students can achieve the exit standards by passing the tests at the beginning of the program or taking the courses and passing them. The relevant learning outcome standards in General Study Skills will be integrated into the other three areas.

Website Information

website: <https://www.squ.edu.om/cps>

3.1.3 Centre for Preparatory Studies Foundation Program (CPSFP) - Arabic**البرنامج التأسيسي**

أصبح البرنامج التأسيسي بجامعة السلطان قابوس مدخلاً إلزامياً للدراسة بجميع كليات الجامعة ابتداء من العام الدراسي ٢٠١٠/٢٠١١. ولقد صمم البرنامج لإعداد الطلاب المقبولين بالجامعة للدراسة الجامعية من خلال تحقيق مخرجات التعلم المطلوبة وفقاً للمعايير الأكاديمية العمانية، حيث يؤهل البرنامج الطالب في أربعة جوانب وهي اللغة الإنجليزية والرياضيات وتقنية المعلومات ومهارات التعلم. وسوف لن يسمح للطالب بدء الدراسة الجامعية قبل التسجيل في البرنامج التأسيسي.

3.1.4 Admission into Major

Students select their major normally before their third semester of credit courses. Deadlines for submitting applications are announced by the Office of the Assistant Dean for Students Academic Affairs. The minimum requirements to specialization are:

- Student must complete at least 25 credit hours before specialization.
- The student should complete the following four courses:
 - o MATH2107 Calculus I (4 credits)
 - o PHYS2107 Physics for Engineering I (4 credits)
 - o CHEM1071 General Chemistry for Engineering (3 credits)
 - o ENGR1501 Introduction to Engineering (1 credit)
- A student under probation cannot apply for specialization unless he/she has finished 40 credits hours.

Generally, admission into a major is based on the student's preference. However, when there are more applications to a major than available spaces, selection is based on the best grades. Subject to space availability, a student can apply to change from an engineering major to another engineering major if the change will not cause much delay in his/her graduation and if his cumulative GPA allows him for this transfer.

Students wishing to change to another College need to contact the Admissions & Registration for details and Application Forms.

3.2 ACADEMIC RULES AND REGULATIONS

The Deanship of Admissions & Registration issues a booklet on Academic Regulations which contains all procedures, rules and regulations related to academic matters. For additional information, please refer to this booklet, or visit the *website at*:

<https://www.squ.edu.om/Portals/26/PDF%20files/Admission%20files/undergraduate%20academic%20R%2028-10-2018.pdf?ver=2020-06-23-100143-790>

3.2.1 Academic Advising & Registration

3.2.1.1 Academic Advising

Following admission to the University, each student is assigned an academic advisor whose role is to:

- a) help the student discover his/her potential and capabilities.
- b) approve the student's choice of courses each semester in accordance with the Degree Program and Academic Regulations.
- c) assist the student in exploring alternative paths to the degree if for any reason the normal pace of the degree is disrupted.
- d) advise the student on other matters affecting his/her studies.

The advisor must approve a student's proposed registration each semester and help develop a recovery plan for students on academic probation in consultation with the academic Assistant Dean. A student may be re-assigned to a new advisor upon selection/change of major.

Advising Remarks

Issues that an academic advisor should make sure that his/her advisees are aware of:

- Students should make sure that they have a copy of their degree plans and familiarize themselves with its details.
- Advisor's approval is required in most forms (i.e. Registration, Add & Drop, Postponement, etc.)
- Students should arrange to go and see their advisors whenever necessary and not only during registration.
- Attendance is mandatory, student should be familiar with the attendance policy of the University.
- A delay in taking pre-requisite courses will delay progress. Student should avoid dropping a pre-requisite course as much as possible.

- When the GPA is poor, it should be discussed with the advisor on reducing the course load as a high load will be a heavy burden and might lower the student's GPA even further.
- Students should watch deadlines and notices on the boards.
- Advisors expect students to do their best.
- Students are responsible for knowing the academic regulations and their degree plan and all its requirements.

Registration

Registration is the process by which a student selects courses according to the guidance of his/her advisor and formally enrolls in those courses.

Information regarding the schedule, location and deadlines of the registration period and timetables are given to students and advisors in advance of the scheduled registration period. Online registration is available at the Deanship of Admissions and Registration web or SIS web page (look for A&R announcement).

3.2.2 Degree Plans

Requirements for completing a degree shall be stated for each year of entry (cohort) as the total number of credits needed with specific instructions regarding University, College, major and minor, program credits, electives and other specific requirements. The total number of credits required for a Bachelor of Engineering is 136 credits (only the Architectural Engineering program requires 156 credits). Given normal scheduling patterns, the program can be completed within 13 semesters excluding the GFP. A time limit of four additional semesters may be allowed. The Degree plan and the changes made to it is binding on students in terms of graduation requirements.

Degree plans of all engineering programs can be downloaded from the College website through departments/programs.

Degree requirements are classified into three groups:

a) University Requirements and University Electives

All degree plans include 6 credit hours of the following University Requirements and 6 credit hours of University Electives:

- 2 credits in Arabic Language (ARAB1060)
- 2 credits in Oman and Islamic Civilization (HIST1010) or Islamic Culture (ISLM1010)
- 2 credit in Omani: State & People (SOCY1005)
- A minimum of 6 credits in General University Elective courses.

General Electives are standard regular courses offered by any College in the University which the student may freely choose to take (subject to fulfilling pre-requisite requirements), but which do not form part of his or her College or Specialization requirements and electives. They may not be restricted to a subset

of courses at the College level. The courses chosen must not duplicate others already taken. It is recommended to select humanity courses as university electives. The student can select University Electives from the following list:

b) **College Requirements and Electives**

A total of 32 credit hours are required for all students in the College and 3 credits hours as a College programming language Elective (ENGR2217 or COMP2002).

c) **Departmental and Major Requirements & Electives**

A total of 89 credit hours are required for the Departmental and Major requirements and electives for all programs except for Architectural Engineering (AREN):

- Departmental Requirements:
All students in the same department must take these requirements.
- Major Requirements:
All students in the same major must take these requirements.

(See section on Department/Major for the list of these courses.)

- Major Requirements:
- Only credits earned in courses which fall within the degree plan for the major shall be counted towards the total required for a degree.
- The degree requirements specified when a student is admitted to his/her degree program shall remain in effect until the degree is completed.
- Degree plan description for each department can be found in the section on departments in this document.

First Two Semesters Degree Plan (Pre-Specialization Plan)

Every student should follow the following degree plan in the first two semesters after finishing the Foundation Program.

This two semester degree plan is common in all departments so regardless of which department the student will select and join, he/she can follow this degree plan

| Degree and Study Plan: 2024 Cohort | | | | | |
|------------------------------------|----------------------|--|-----------|---|------|
| Sem-1 Fall 2024 | Course Code | Course Title | Cr. | Pre-Requisites | Cat. |
| | - | General Foundation Program | - | - | UR |
| | Total Credits | | - | | |
| Semester-2 Spring 2025 | HIST1010 or ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2 | | UR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total Credits | | 14 | | |
| Semester-3 Fall 2025 | ARAB1060** | Arabic | 2 | | UR |
| | | University Elective | 2 | | UE |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 OR LANC2162 OR LANC2035 OR LANC2140 OR LANC2058 OR LANC2033) | CR |
| | MATH2109 | Calculus II for science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107(co-requisite) | CR |
| | Total Credits | | 16 | | |

3.2.3 Industrial Training Program

All engineering students are required to take an Industrial Training Program (ENGR4007). ENGR4007 is planned in the Summer after the students complete their fourth year. For a period of 6-8 weeks the students receive training from a private company or government ministries related to their specialization. The student, supervised by the training organization, has to submit at the end of the training period a report to his/her department. At present, it is a non-credit course and is graded "PASS" or "NOT PASS." The industrial training program is coordinated by the Assistant Dean for Industrial Training and Alumni.

3.3 STUDENT INFORMATION SYSTEM

3.3.1 College of Engineering Website

The College of Engineering has a website that can be accessed through Intranet and Internet. Each department of the College of Engineering is contributing in developing and maintaining the website. Important information about each department such as degree plans, faculty, and facilities can be obtained by browsing the web site. Members of the College Web Committee are responsible for maintaining and updating the website. The College website can be accessed through the University Home Page www.squ.edu.om or directly on www.squ.edu.om/engineering.

All recent degree plans are available within each department web page. Follow the instructions shown at the end of this document to access the Degree Plans.

3.3.2 Admissions and Registration Website

The Admission and Registration website provides information on matters related to the admissions and registration for the students and members of the staff. Information on Admissions, Academic Regulations, University degree plans, Timetables, Section Counts, Statistics, student status, and related matters are presented on the web site. The Admissions and Registration web site can be accessed through the link on the University Home Page or through the address <https://www.squ.edu.om/admissions>

Students are encouraged to browse these websites on a regular basis in order to update themselves with the academic regulations and matters concerning their academic affairs.

3.4 DEPARTMENTS/PROGRAMS

3.4.1 Department of Civil and Architectural Engineering

Introduction

The Department of Civil and Architectural Engineering is one of four departments in the College of Engineering at Sultan Qaboos University. The Department currently has 31 highly qualified academic staff and 12 technical and administrative staff. The specialization and expertise of the academic staff span two major specializations: Civil Engineering and Architectural Engineering. Civil Engineering includes Structural Engineering, Materials, Construction Management, Transportation Engineering, Environmental Engineering, Coastal Engineering, Geotechnical Engineering, Water Resources and Geomatics Engineering. Architectural engineers are required to study a wide range of science, technical, artistic and humanities subjects to understand the socio-economic, cultural, aesthetic and technical aspects of a building.

Civil Engineering Academic Staff

| Name/Position/ Email | Ext. | Academic Qualification | Specialization |
|--|------|---------------------------|-------------------------------|
| Dr. Khalid Al-Shamsi Associate Professor and HoD alshamsi@squ.edu.om | 1332 | PhD (USA) 06 | Transportation Engineering |
| Prof. Ali Al-Nuaimi Professor alnuaimi@squ.edu.om | 1337 | PhD (UK) 00 | Structural Engineering |
| Prof. Ali Salim Al-Harthy Professor alharthy@squ.edu.om | 1365 | PhD (USA) 92 | Structural Engineering |
| Prof. Khalifa Al-Jabri Professor aljabri@squ.edu.om | 1335 | PhD (USA) 00 | Structural Engineering |
| Dr. Abdul Wahid Hago Associate Professor ahago@squ.edu.om | 1338 | PhD (UK) 82 | Structural Engineering |

Last update on Aug 05, 2024

| Name/Position/ Email | Ext. | Academic Qualification | Specialization |
|--|------|---------------------------|--|
| Dr. Abdullah Al-Saidy Associate Professor alsaidy@squ.edu.om | 1340 | PhD (UK) 01 | Structural Engineering |
| Dr. Ashraf Elazouni Associate Professor elazouni@squ.edu.om | 2505 | PhD (USA) 93 | Construction Management |
| Dr. Ghazi Al-Rawas Associate Professor & Dean of Research ghazi@squ.edu.om | 2522 | PhD (Canada) 10 | Remote Sensing and Water Resources Engineer |
| Dr. Hossam Hassan Associate Professor hossam@squ.edu.om | 1336 | PhD (USA) 96 | Transportation Engineering |
| Dr. Mohammed Al-Aghbari Associate Professor aghbari1@squ.edu.om | 1334 | PhD (UK) 99 | Geotechnical Engineering |
| Dr. Sherif E. El-Gamal Associate Professor sherif@squ.edu.om | 1345 | PhD (Canada) 05 | Structural Engineering |
| Dr. Yahia Mohamedzein Associate Professor yahiaz@squ.edu.om | 2577 | PhD (USA) 89 | Geotechnical Engineering |
| Dr. Issa Al-Harthy Assistant Professor aissa@squ.edu.om | 1339 | PhD (Japan) 00 | Environmental Engineering (Acoustics) |
| Dr. Mohamed Al-Mamun Associate Professor aalmamun@squ.edu.om | 2598 | PhD (Singapore) 10 | Environmental Engineering |
| Dr. Mohammed Seddik Meddah Associate Professor seddikm@squ.edu.om | 2672 | PhD (Canada) 07 | Civil Engineering, Materials |
| Dr. Syed Muhammad Bilal Waris Ali Assistant Professor waris@squ.edu.om | 2589 | PhD (Japan) 10 | Structural Engineering |
| Dr. Mubarak Al-Alawi Assistant Professor and Assistant Dean alawim@squ.edu.om | 2531 | PhD (Canada) 17 | Construction Engineering |

| Name/Position/ Email | Ext. | Academic Qualification | Specialization |
|---|------|---------------------------|---|
| Dr. Kazi Abu Sohel Associate Professor kmasohel@squ.edu.om | 3752 | PhD (Singapore) 09 | Structural Engineering |
| Dr. Talal Etri Assistant Professor t.etri1@squ.edu.om | 2543 | PhD (Germany) 07 | Hydraulic and Coastal Engineering |
| Dr. Zeinab Yavari Assistant Professor z.yavari@squ.edu.om | 3752 | PhD (Iran) 16 | Environmental Engineering |
| Dr. Mohammed Kandil El-Diasty Associate Professor m.eldiasty@squ.edu.om | 3759 | PhD (Canada) 00 | Geomatics Engineering |
| Dr. Mohammad Reza Mahmoud Associate Professor m.reza@squ.edu.om | 2543 | PhD (Iran) 12 | Water Resources and Environmental Systems Analysis and Planning |
| Dr. Ronald Ekyalimpa Assistant Professor r.ekyalimpa@squ.edu.om | 2678 | PhD (Canada) 15 | Construction Management |

Architectural Engineering Academic Staff

| Name/Position/Email | Ext. | Academic Qualification | Specialization |
|--|------|---------------------------|--------------------------------------|
| Dr. Saleh Al Saadi Associate Professor and Coordinator AE Program salsaadi@squ.edu.om | 2697 | PhD (USA) 14 | Architectural Engineering |
| Dr. Naima Benkari Assistant Professor nbenkari@squ.edu.om | 2671 | PhD (France) 04 | Architecture and Urbanism |
| Dr. Chaham Alalouch Associate Professor c.alalouch@squ.edu.om | 2656 | PhD (UK) 09 | Architectural Engineering and Design |
| Dr. Mohamed Salah Eldin Assistant Professor msaleh@squ.edu.om | 2674 | PhD (Egypt) 11 | Building Construction |
| Dr. Hayder Khan Assistant Professor khan@squ.edu.om | 1342 | PhD (UK) 15 | Mechanical Engineering |

| Name/Position/Email | Ext. | Academic Qualification | Specialization |
|--|------|------------------------|---------------------------|
| Dr. Hanan Al-Khatri Assistant Professor khatri@squ.edu.om | 3752 | PhD (UK) 19 | Architecture (Science) |
| Dr. Aliya Al-Hashim Assistant Professor aliya@squ.edu.om | 3752 | PhD (USA) 20 | Architectural Engineering |

Laboratory Facilities

1. Architectural Printing Laboratory
2. Building Construction Model-Making Laboratory
3. Construction Materials and Structures Laboratory
4. Geomatics Engineering Laboratory
5. Geotechnical Engineering Laboratory
6. Highway Materials Laboratory
7. Hydraulics and Hydrology Laboratory
8. Environmental Engineering Laboratory
9. Model Workshop
10. Building Energy Laboratory

The Department of Civil and Architectural Engineering offers Bachelor of Engineering in Civil Engineering and Bachelor of Engineering in Architectural Engineering. The student may select the degree in Civil Engineering or Architectural Engineering upon fulfilling the University and College requirements.

The Bachelor of Engineering in Civil Engineering is awarded upon fulfillment of not less than 136 credit hours of coursework.

The Bachelor of Engineering in Architectural Engineering is awarded upon fulfillment of not less than 156 credit hours of coursework.

3.4.2 Department of Electrical and Computer Engineering

Introduction

The Department of Electrical and Computer Engineering aims to provide a comprehensive education to equip students for subsequent challenging and highly competitive positions in the Electrical and Computer Engineering related sectors. This is achieved through a well-tailored and progressive sequence of topics in which emphasis is placed on a sound understanding of basic principles, reasoning, and the application of problem-solving skills. Students should, therefore, have proven aptitude for applied science and engineering.

Electrical and Computer Engineering is taught principally in the three final years of the five-year program, following essential courses in the physical sciences (mathematics, physics, etc.) and engineering. The program has a degree plan covering a wide range of topics.

Academic Staff

Most of the academic staff in the Department of Electrical and Computer Engineering hold PhD degrees covering a broad range of specializations and industrial experience. Equally, technical staff members are also highly qualified with many years of experience.

| Name/Position/Email | Ext. | Academic Qualification | Specialization |
|---|---------------|---|---|
| Dr. Ahmed Al Maashri HoD amaashari@squ.edu.om | 1363/ 1330 | PhD (Pennsylvania State University), 2012 | Computer Engineering |
| Prof. Abdullah Al Badi Professor albadi@squ.edu.om | 1324 | PhD (UMIST, UK), 1998 | Distributed generation, Power quality, Power system analysis, Power electronics and drives, and Renewable Energy. |
| Prof. Abdulnasir Y. Hossen Professor abhossen@squ.edu.om | 1303 | PhD (Ruhr-University, Germany), 1994 | Digital Signal Processing |
| Prof. Hadj Bourdoucen Professor hadj@squ.edu.om | 1325 | PhD (Ecole Centrale de Lyon, France), 1987 | Electronic & Optical Communication |
| Dr. Amer Al Hinai Professor, DVC-PSR hinai@squ.edu.om | 1356 | PhD (West Virginia University), 2005 | Power System Operation & Control, Renewable Energy Integration, Distributed Generation & Microgrid |
| Name/Position/Email | Ext. | Academic Qualification | Specialization |

| Dr. Joseph Jervase Associate Professor jervase@squ.edu.om | 1323 | PhD (University of Khartoum), 1985 | Microwave Antennas & Propagation |
|---|------|--|---|
| Dr. Arif Saeed Malik Associate Professor. asmalik@squ.edu.om | 2566 | PhD (Imperial College London), 1991 | Power System Economics, Reliability & Planning |
| Dr. Tariq Jamil Associate Professor tjamil@squ.edu.om | 2515 | PhD (Florida Institute of Technology, USA), 1996 | Computer Architecture, Parallel Processing, Computer Arithmetic, Data Encryption, Digital Systems |
| Dr. Zia Nadir Associate Professor & Asst. HoD nadir@squ.edu.om | 2536 | PhD (University of Science & Technology Lille1 France), 1999 | Electronics-RF Communications- Computational Electromagnetics |
| Dr. Lazhar Khriji Associate Professor lazhar@squ.edu.om | 1329 | PhD (Tampere University of Technology, Finland), 1999 | Digital Signal and Image Processing, Machine Learning |
| Dr. Faical Mnif Associate Professor mnif@squ.edu.om | 2534 | PhD Polytechnic Institute of Montreal, Canada, 1996 | Control Systems & Robotics, & Industrial Electronics |
| Dr. Hasan Yousef Associate professor hyousef@squ.edu.om | 2554 | PhD (University of Pittsburgh, USA), 1989 | Control Systems applications |
| Dr. Muhammad Shafiq Associate professor mshafiq@squ.edu.om | 2662 | PhD (Chiba University, Japan), 1997 | Control Systems Engineering |

| | | | |
|---|------|---|---------------------------------------|
| Dr. Mostefa Mesbah Associate Professor m.mesbah@squ.edu.om | 2542 | Ph. D. (University of Colorado at Boulder, USA), 1993 | Control Systems and Signal Processing |
|---|------|---|---------------------------------------|

| Name/Position/Email | Ext. | Academic Qualification | Specialization |
|---|------|---|---|
| Dr. Mohamed Bait-Suweilam Associate Professor msuwailem@squ.edu.om | 2571 | PhD (University of Waterloo, Canada) 2011 | Electromagnetics, Antennas, RF Microwave Engineering |
| Dr. Ahmed Chiheb Ammari Associate Professor chiheb@squ.edu.om | 2661 | PhD (National Polytechnic Institute, Grenoble, France), 1996 | Embedded Real Time Systems, Computational Intelligence, Systems Optimizations |
| Dr. Jawher Ghommam Associate Professor jawher@squ.edu.om | 3765 | PhD (University of Orleans, France), 2008 | Guidance, Navigation and Cooperative Control of Multi-Autonomous Vehicle |
| Dr. Dawood Al-Abri Associate Professor alabrid@squ.edu.om | 2538 | PhD (University of Florida, USA), 2008 | Computer Networking, Social Networks, Network Security |
| Dr. Nasser Tarhuni Associate Professor tarhuni@squ.edu.om | 2537 | PhD (University of Technology, Finland), 2007 | Wireless Radio Resource Management, Optical CDMA, DSP Applications to Power System |
| Dr. Rami Al-Hmouz Associate Professor r.alhmouz@squ.edu.om | 2590 | PhD (University of Technology, Sydney, Australia), 2008 | Computer Engineering/Computational Intelligence |
| Dr. Razzaqul Ahshan Associate Professor razzaqul@squ.edu.om | 1314 | PhD (Memorial University of Newfoundland, St. John's, Canada), 2013 | Renewable Energy Systems and their Integration, Microgrids, Modelling and Control of Renewable Energy Systems, Wind Energy, Bio-energy, Electrical Drives, Application of Signal Processing Techniques to Power Systems |

| Name/Position/Email | Ext. | Academic Qualification | Specialization |
|--|------|--|---|
| Dr. Muhammed Rizwan Associate Professor <i>m.mughal1@squ.edu.om</i> | 1373 | PhD (Politecnico di Torino) 2014 | Electronics and Communication Engineering |
| Dr. Hafiz Muhammad Asif Associate Professor <i>h.asif@squ.edu.om</i> | 2664 | PhD (Lancaster University, UK), 2012 | Communication Systems |
| Dr. Mohamed Eladawy Associate Professor <i>m.eladawy@squ.edu.om</i> | 3771 | PhD (University of Poitiers, France) 2011 | High Voltage Engineering |
| Dr. Samir Al Busaidi Assistant Professor <i>albusaid@squ.edu.om</i> | 2572 | PhD (Curtin University, WA, Australia) | Telecommunication |
| Dr. Hassan Al Lawati Assistant Professor and ADUS <i>hlawati@squ.edu.om</i> | 2518 | PhD (UK), 2014 | CP Antennas, Applied Electromagnetism and AMC surfaces |
| Dr. Abdelsalam Elhaffar Assistant Professor <i>a.elhaffar@squ.edu.om</i> | 2533 | PhD (Helsinki University of Technology, Finland), 2008 | Power system protection, Distributed generation, smart grids, and fault location in power systems |
| Dr. Ibrahim Al Naimi Assistant Professor <i>i.alnaimi@squ.edu.om</i> | 3767 | PhD (De Montfort University, Leicester, UK), 2011 | Mechatronics Engineering |
| Dr. Gulam Khan Assistant Professor <i>G.khan@squ.edu.om</i> | 1328 | PhD (University of Newcastle, Australia), 2019 | Automation and control of nonlinear Systems |

| | | | |
|---|----------|---|---|
| Dr. Said Al-Abri Assistant Professor ssabry@squ.edu.om | 2532 | PhD (Georgia Institute of Technology, USA), 2019) MSc (University of Central Florida, USA), 2013 | Control Engineering |
| Dr. Ahmed Awad Assistant Professor a.awad1@squ.edu.om | 1328 | PhD University of Waterloo, ON, Canada, September 2014 | Power and Energy Systems (Electrical & Computer Engineering Dept.), |
| Engr. Taha Mubarak Al-Saadi Lecturer taha@squ.edu.om | On leave | MSc (University of Sheffield, UK), 2016 | Advanced Control and Automation |
| Engr. Salem Al-Hinai Demonstrator salems@squ.edu.om | 2578 | B. Eng, SQU, 2001 | Power Systems |

Technical Staff

| Name/Position/Email | Ext. | Academic Qualification | Specialization |
|--|------|--|---|
| Sulaiman Al Sinani Chief Engr.(superintendent) ssinani@squ.edu.om | 1306 | BEng. (SQU, Oman), 2002 | Electrical & Electronics Engineering |
| Jaber Al-Bulushi Senior Engineer jabir@squ.edu.om | 2548 | MSc (Computer Engineering SQU, Oman), 2003 | Electronics & Communication Engineering |
| Yousef Al Shuaili Senior Engineer shaili@squ.edu.om | 2516 | BEng. (SQU, Oman). 2001 | Electrical & Electronics Engineering |

| | | | |
|---|------|---|---|
| Abbas Abdelrahman Teirab Engineer abbas@squ.edu.om | 2563 | BEng. (SQU, Oman) | Electronics & Communication Engineering |
| Naeema Al Gaithi Engineer gaithi@squ.edu.om | 2565 | BSc (Higher College of Technology, Oman), 2008 | Telecommunications |
| Rona George Allwyn Engineer rona@squ.edu.om | 2565 | BTech (Kerala University, India), 2002 | Electrical and Electronics Engineering |
| Nabil Hamza Lab Supervisor nabilh@squ.edu.om | 2551 | MSc (National Engineering School of Sfax, ENIS, Tunisia), 2003 | Electronics and Telecommunications |
| Salwa Al Bahri Technician salwa2@squ.edu.om | 2565 | Diploma in Telecommunications, (Higher College of Technology, Oman), 2006 | Telecommunications |
| Saud Badar Al Salmi Engineer s.alsalmi@squ.edu.om | 2563 | BEng (UTAS-Muscat) 2022) | Computer Engineering |
| Abdulsallam Muslem Aloraimi Engineer a.aloraimi@squ.edu.om | 2564 | BEng (LIT) 2018) | Electrical Power System |
| Wisal Juma Said Al-Dohani Engineer w.aldohani@squ.edu.om | 2565 | BEng, (UTAS-Muscat) 2021 | Electrical Power Engineering |
| Mr. Sami Al Jaafari Technician samij@squ.edu.om | 2564 | Diploma in Electrical Power Engineering, (Ibra College of Technology), 2010 | Power Engineering |

| | | | |
|---|------|---|-------------------------|
| Mr. Said Al Hajri Technician <i>alhajri_s@squ.edu.om</i> | 2578 | <i>BSc (Sultan Qaboos University, Oman), 2013</i> | <i>Computer Science</i> |
|---|------|---|-------------------------|

The Bachelor of Engineering in Electrical and Computer Engineering program covers broad education in basic sciences, mathematics, and courses in specialized areas of Electrical & Computer Engineering. The program includes four specializations; namely, Electronic Instrumentation and Control (EIC), Power Systems and Energy (PSE), Embedded Computing and Networks (ECN), and Telecommunications & Wireless Systems (TWS). Also, the department offers a program in Mechatronics jointly with the Department of Mechanical and Industrial Engineering.

Specialization coordinators:

| | |
|-----------------------|--|
| Dr. Dawood Al Abri | : Embedded Computing and Networks |
| Prof. Abdulla Al Badi | : Power Systems and Energy |
| Prof. Hadj Bourdouden | : Telecommunications & Wireless Systems |
| Dr. Hassan Yousef | : Electronic Instrumentation and Control |
| Dr. Riadh Zaier | : Mechatronics Program |

The ECE Department is equipped with highly sophisticated laboratories to train students in drones and machine vision, electrical and electronics circuits, electrical drives and machines, digital design, embedded systems, communications, computer networking, power systems, high voltage, and control systems.

See degree/study plans for full details of courses in the department.

3.4.3 Mechatronics Engineering Program

Presentation

Mechatronics Engineering (MCE) is a focus area in engineering that promises to become more important in the future. It is a synergistic integration of Mechanical Engineering Systems, Control Systems, and Computers. Typical mechatronics systems include sensors (e.g. position sensors, speed sensors, temperature sensors, etc.), mechanical and electrical actuators (e.g. electrical motors, hydraulic cylinders, and flow control valves), and computer controllers (e.g. custom-built computers, personal computers, and PLC's) into products and system useful to man and society. To combine all these elements optimally, engineers must have insight into each of these disciplines. In the future, Mechatronics Engineers will play a key role in the design, development, manufacture, and operation of a wide variety of products: from video players and automatic cameras to smart wells and intelligent systems, from automated well rigs to smart structures, etc.

The Mechatronics Engineering program is a five (5) year Bachelor's Degree program, oriented toward future trends in industrial development within the Sultanate of Oman and the Gulf.

Academic staff

The Mechatronic Engineering Program is a joint program managed by two departments; namely, Electrical & Computer Engineering (ECE) and Mechanical & Industrial Engineering (MIE). The program includes basic courses from both ECE and MIE programs and major courses. Major courses include but are not limited to: Robotics, Mechatronics System Design, Control Systems Engineering, Real-time control and interfacing, Modeling and Simulation, Power Electronics and Drives, Electromechanical Systems and Actuators, etc. The MCE curriculum is crowned, typically within the last year, with a capstone design experience, where students need to undergo a Final year Project spanned over two semesters. These courses are offered complementarily by academic staff from both ECE and MIE departments. Consult degree/study plans for full details of courses in this program.

Program Management

The management of the program is assured by both ECE and MIE departments. The two departments take turns in managing the program, where each management cycle is 3 years in duration.

Laboratories

In addition to the different lab units from both ECE and MIE departments used in almost every course of the program, the College of Engineering has granted the program a specific lab used namely for program courses. The MCE lab is equipped with the last up-to-date equipment such as robots, drones, etc.

See degree/study plans for full details of courses in this program.

3.4.4 Department of Mechanical and Industrial Engineering

Introduction

The Department of Mechanical and Industrial Engineering at Sultan Qaboos University (SQU) provides a high-quality professional education to equip students for future challenging and highly competitive positions in public service and industry. This is achieved through a carefully planned set of courses in which emphasis is placed on developing a sound understanding of basic principles, skills in the analysis of real-life problems and problem-solving techniques. Students should have a definite interest in learning how to apply sciences and mathematics to solve technical problems in engineering.

Mechanical and Industrial Engineering is taught in years 3 – 5 of the B.Eng. Degree Plan after foundation English, Mathematics, and Sciences courses. The Department offers a Bachelor of

Engineering, M.Sc., and Ph.D. in Mechanical and Industrial Engineering. It also offers B.Eng. in Mechatronics Engineering in collaboration with the Electrical and Computer Engineering Department. The undergraduate programs are ABET accredited.

Academic Staff

Mechanical and Industrial Engineering Academic Staff have qualifications and experience covering a wide range of engineering specializations as shown below. Demonstrators and Lecturers pursue M.Sc. and Ph.D. degrees in universities abroad. Technical staffs are well qualified with a wide range of experience.

| Name/Position/E-Mail | Ext. | Academic Qualification | Specialization |
|--|-------------|-------------------------------|---|
| Dr. Nasr Al-Hinai <i>Associate Professor, HoD</i> nhinai@squ.edu.om | 1352 | PhD (Canada) 2011 | Production Planning, Scheduling and Control. Systems Modeling and Simulation, Metaheuristics in Operations Research |
| Dr. Majid H. Al-Maharbi <i>Associate Professor, (Asst HoD)</i> majidm@squ.edu.om | 2541 | PhD (USA) 2009 | Materials Science and Engineering, Metallurgy |
| Prof. Tasneem Pervez <i>Professor</i> tasneem@squ.edu.om | 1315 | PhD (USA) 1991 | Engineering Design & Analysis, Composite Materials, FEM, Solid Expandable Tubular and Swellable Elastomers |
| Prof. Sayyad Zahid Qamar <i>Professor</i> sayyad@squ.edu.om | 1349 | PhD (KSA) 2004 | Applied Materials and Manufacturing, Applied Mechanics and Design, Engineering Reliability, Engineering Education |
| Prof. Khalid Alzebdeh <i>Professor</i> alzebdeh@squ.edu.om | 2556 | PhD (USA) 1994 | Project Management and Economics, Bio-composites, Nano-composites, Engineering Mechanics. |
| Dr. Nabeel Z Al-Rawahi <i>Associate Professor, Dean</i> alrawahi@squ.edu.om | 2569 | PhD (USA) 2002 | Multiphase Flow, Computational Fluid Mechanics, Renewable energy |
| Dr. Amur Al-Yahmadi <i>Associate Professor,</i> amery@squ.edu.om | 1358 | PhD (USA) 2001 | Dynamics and Control of Mechanical Systems, Legged Locomotion, Navigation of Mobile Robots |

| Name/Position/E-Mail | Ext. | Academic Qualification | Specialization |
|--|---------------|------------------------|--|
| Dr. Abdullah Al-Shabibi Associate Professor ashabibi@squ.edu.om | 2567 | PhD (USA) 2001 | Applied Mechanics |
| Dr. Nasser A. Al-Azri Associate Professor, ADPGSR nalazri@squ.edu.om | 1355/ 1333 | PhD (USA) 2008 | Engineering mathematics and optimization, process optimization and thermodynamics |
| Dr. Riadh Zaier Associate Professor zaier@squ.edu.om | 2547 | PhD (Japan) 1999 | Discrete-Time Tracking Control Systems, Robotics, Mechatronics Systems design |
| Dr. Mahmood A. Al-Kindi Associate Professor kindim@squ.edu.om | 1312 | PhD (USA) 2010 | Industrial Engineering, Risk Analysis , Lean Six Sigma, Inventory Control |
| Dr. Farooq Al-Jahwari Assistant Professor, farooq@squ.edu.om | 1350/ 2455 | PhD (Canada) 2016 | Finite Element Analysis and Design, Processing, Analysis and Characterization of Polymers and Composites, Molecular Dynamics, Impact Mechanics, Smart Materials, Cellular Structures, Design and Fabrication of High Damping Materials for Impact Attenuation. |
| Dr. Hakan Gultekin Associate Professor hgultekin@squ.edu.om | 3757 | PhD (Turkey) 2007 | Operation research, Production Planning, Scheduling, Optimization Algorithms |
| Dr. Afzal Husain Associate Professor afzal19@squ.edu.om | 1322 | PhD (South Korea) 2010 | Thermodynamics and Fluid Mechanics, CFD |
| Dr. Khurshid Alam Associate Professor kalam@squ.edu.om | 3753 | PhD (UK) 2009 | Bio-Mechanics, Design |
| Dr. Niyazi Bakir Associate Professor n.bakir@squ.edu.om | 2502 | PhD (USA) 2004 | Reliability Engineering, Decision and Risk Analysis, Homeland Security |
| Dr. Abdullah Al Janabi Associate Professor ab.aljanabi@squ.edu.om | 3761 | PhD (Germany) 2011 | Renewable Energy Technologies, Thermal Sciences, Heat Exchangers |

| Name/Position/E-Mail | Ext. | Academic Qualification | Specialization |
|--|------|---|--|
| | | | Fouling Mitigation Techniques. Automobile Technology. |
| Dr. Kassim Al-Rubaie Associate Professor k.alrubaie@squ.edu.om | 1313 | PhD (Germany - Ruhr University Bochum) 1995 | Additive Manufacturing, Materials and Manufacturing Processes, Corrosion, Tribology, Fatigue and Fracture Mechanics, Mechanical Behaviour of Materials, Physical Metallurgy, Phase Transformations in Materials, and Advanced Metallic Materials for aerospace, Automotive, and Biomedical Applications. |
| Dr. Khaled Goher Associate Professor k.goher@squ.edu.om | 2655 | PhD (UK) 2010 | Dynamic, Modelling and Control of Robots and Mechanisms. Soft Robotics for Healthcare, Medical Technologies and Food Manufacturing. Additive Manufacturing Innovations in Healthcare and Food Industry. |
| Dr. Ahmed Elwardani Associate Professor a.elwardani@squ.edu.om | 1392 | PhD (UK) 2012 | Fuels, Combustion, Engines, Spray, Biomass valorization |
| Dr. Ahmed Shaban Khalifa Associate Professor a.khalifa@squ.edu.om | 1310 | PhD (Italy) 2014 | Industrial Engineering, Operations Research, Quality Control, Supply Chains, Energy Systems, Simulation, Modeling and Optimization |
| Dr. Sulaiman Al-Obaidani Assistant Professor sobeidani@squ.edu.om | 1311 | PhD (Italy) 2009 | Membrane Technology, Desalination, Membrane Distillation, Water treatment, Heat Transfer |
| Dr. Musaab Hassan Zarog Assistant Professor musaabh@squ.edu.om | 2489 | PhD (UK) 2006 | Mechatronics Engineering, MEMS, Control System |

| Name/Position/E-Mail | Ext. | Academic Qualification | Specialization |
|--|------|--|---|
| Dr. Moosa Al-Kharusi Assistant Professor m.alkharusi1@squ.edu.om | 2845 | PhD (SQU) 2017 | Applied Mechanics |
| Dr. Emad Summad Assistant Professor esummad@squ.edu.om | 3751 | PhD (UK) 2001 | Innovation and Entrepreneurship |
| Dr. Nasra Al-Maskari Assistant Professor maskaria@squ.edu.om | 2500 | PhD (USA) 2016 | Mechanical Engineering Design, Product Design, Bioinspired Design, Biomimetic, Bioinspired Material Design, Bioinspired Design Optimization, Design of Turbodrill for Oil and Gas Industry. |
| Dr. Omar Al Abri Assistant Professor o.alabri@squ.edu.om omar.alabri@squ.edu.om | 1064 | PhD (Sultan Qaboos University, Oman) 2016 | Applied Mechanics, Mechanics of Materials, Finite Element Analysis, Crystals Plasticity, CPFEM |
| Dr. Mohammed Othman Assistant Professor, m.othman@squ.edu.om | 2675 | PhD (Canada-Concordia University) 2012 | Human Factors, Operations Management, Workforce Planning, and Product Development |
| Dr. Mehmet Dorduncu Assistant Professor, me.dorduncu@squ.edu.om | 1316 | PhD (USA - The University of Arizona) 2018 | Solid Mechanics, Fracture Mechanics, Peridynamics, Finite Element Analysis, and Composite Materials |
| Dr. Hussein Obeid Assistant Professor h.obeid@squ.edu.om | 3753 | PhD (France) 2018 | Control and Observation, Energy Management, Electric Vehicles, Microgrid, Renewable Energies |
| Mohammed Al-Lawati Lecturer mlawati@squ.edu.om | - | MSc. (University of Waterloo) 2014 | Mechatronics Engineering, Control systems and robotics. |

Laboratory Facilities

11. Properties of Materials Laboratory
12. Steam and Heat Engines Laboratory
13. Refrigeration and Air-Conditioning Laboratory

Last update on Aug 05, 2024

14. Solid Mechanics Laboratory
15. Fluid Mechanics Laboratory
16. Systems Dynamics and Control Laboratory
17. Mechanics of Machines Laboratory
18. Computer Integrated Manufacturing (CIM) Laboratory
19. Central Workshop
20. Training Workshop
21. Carpentry Workshop
22. Ergonomics Laboratory
23. Industrial Systems Laboratory
24. Computer Laboratories
25. Metrology Laboratory
26. Mechatronics Laboratory
27. MIE Research Laboratory
28. Engineering Research (ENGR) Laboratory

The Mechanical and Industrial Department offers two undergraduate programs as follows:

- Bachelor of Engineering in Mechanical Engineering
- Bachelor of Engineering in Industrial Engineering

The Department Requirements (DR, 11 Cr) Are:

Probability and Statistics for Engineers, Engineering Economics, Engineering Tools and Graphics, Innovation and Entrepreneurship.

1) Mechanical Engineering Major Requirements (AR, 63 Cr) Are:

Engineering Mechanics, Solid Mechanics, Product Design, Machine Dynamics, Thermodynamics I, Thermodynamics II, Materials Science and Engineering, Electromechanical Systems, Design of Machine Elements, Engineering Systems and Control, Control Systems Design, Instrumentation and Measurements, Fluid Mechanics Heat Transfer, Manufacturing Processes, Modern Materials and Manufacturing, Numerical Methods for Engineers, Data Analytics in Engineering, Design of Thermal Systems, Capstone Design, Project I, Project II

2) Industrial Engineering Major Requirements (AR, 60 Cr) Are:

Introductory Applied Mechanics, Mechatronics Systems, Theory of Modeling and Optimization, Industrial Information System, Work System Analysis and Design, Ergonomics and Safety, Optimal Experimental Design, Integer and Stochastic Optimization in Practice, Production Planning and Inventory Management, Quality Engineering and Management, Data Science and Engineering Analytics, Facilities Design and Planning, Materials and Manufacturing Technology, Simulation Models, Engineering

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See degree/study plans for full details of the list of courses for both programs offered in the department.

3.4.5 Department of Petroleum and Chemical Engineering

Introduction

The undergraduate programs in the Petroleum & Chemical Engineering Department (PCED) in the College of Engineering at Sultan Qaboos University are carefully designed to meet the needs of the Sultanate of Oman in the growing fields of oil and gas industry as well as the chemical and process industries. The department's vision is to be considered among the top departments in the region that produces graduates receiving worldwide recognition and is able to attract top-notch faculty. As such, the Department aims at providing a comprehensive state-of-the-art education for its students and thus equipping them with the needed skills for the competitive job market. This is achieved through a progressive sequence of subjects well-tailored to build a deep and sound understanding of the basic principles of engineering, emphasizing reasoning and engineering application in problem solving. The department offers two different Bachelor of Engineering Degrees (BEng) in Petroleum & Natural Gas Engineering (PNGE) and Chemical & Process Engineering (CHPE). Both PNGE and CHPE programs are accredited by the Accreditation Board of Engineering and Technology (ABET) which is an internationally recognized accreditation body. The Bachelor programs are solidly constructed, with an excellent technology based, to provide sound and internationally acclaimed undergraduate engineering education. They are designed in such a way to allow broad perspective, engendering social, cultural, ethical components, all combined to produce the engineers, who are expected to serve as a leading role model in the community.

Postgraduate programs at the Masters level (MSc) and PhD level are also offered in PNGE and CHPE. These degrees prepare students to pursue careers in petroleum, chemical and process engineering in a variety of related fields.

Academic Staff

All academic staff hold doctoral (PhD) degrees covering a broad range of specializations. Likewise, the technical support staff are highly qualified with many years of experience.

| Name/Position/Email | Ext. | Academic Qualification | Specialization |
|--|------|------------------------|--|
| Dr. Rashid Al-Hajri Associate Professor, HoD rashid@squ.edu.om | 1318 | PhD (UK), 2010 | Hydrogen production, CO ₂ capture and utilization, NG treatment, Catalytic reaction engineering, Chemical/Thermal enhanced oil recovery |
| Prof. Rashid Al-Maamari Professor rsh@squ.edu.om | 1361 | PhD (USA), 2000 | Enhanced oil recovery, Treatment and utilization of oilfield produced water |
| Prof. Farouk S. Mjalli Professor farouqsm@squ.edu.om | 2558 | PhD (UK), 2003 | Green Engineering |
| Prof. Gholamreza Vakili-Nejad Professor vakili@squ.edu.om | 2587 | PhD (Iran), 1999 | Thermodynamics and Thermophysical Properties of Fluids |
| Prof. Alaa Al-Muhtaseb Professor muhtaseb@squ.edu.om | 1321 | PhD (UK), 2004 | Biofuels, Bioenergy, Sustainable energy, Biomass Utilisation, Catalysis, Wastewater Treatment |
| Dr. Hamoud Al-Hadrami Associate Professor hadrami@squ.edu.om | 2527 | PhD (USA), 2000 | Drilling Engineering, Wellbore stability, Formation damage, Geological modelling |
| Dr. Jamil Naser Associate Professor naserj@squ.edu.om | 1347 | PhD (US), 1998 | CO ₂ Capture, Environmentally friendly solvents, Solar desalination |
| Dr. Khashayar Nasrifar Associate Professor Nasrifar@squ.edu.om | 2560 | PhD (Iran), 2001 | Fluid Phase Equilibria and Gas Hydrate Engineering |
| Dr. Ashish M Gujarathi Associate Professor ashishg@squ.edu.om | 1320 | PhD (India), 2010 | Process modelling and Optimisation, Artificial intelligence, Machine learning |
| Dr. Ghulam Murshid Associate Professor murshid@squ.edu.om | 2546 | PhD (Malaysia), 2012 | Synthesis of Green Solvents for CO ₂ capture and Utilization. |

| | | | |
|--|------|----------------------|---|
| Dr. Mohammed Al-Abri Associate Professor alabri@squ.edu.om | 1364 | PhD (UK), 2007 | Desalination, Water Treatment, Membrane Technology, Nanotechnology Applications in Water Treatment and Renewable Energy |
| Dr. Tarek Ganat Associate Professor | 1319 | PhD (Malaysia), 2016 | Petroleum Engineering, Enhanced oil recovery, |

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| | | | |
|--|-------|-------------------------|--|
| t.ganat@squ.edu.om | | | Treatment of oilfield produced water, Production engineering (design and optimization), Reservoir engineering studies, Formation damage, and Nanotechnology. |
| Dr. Emre Artun Associate Professor e.artun@squ.edu.om | 15011 | PhD (USA), 2008 | Petroleum and Natural Gas Engineering. Reservoir Management, data analytics, machine learning |
| Dr. Belal Abu Tarboush Associate Professor belal@squ.edu.om | 1317 | PhD (Canada), 2014 | Material synthesis and applications and Membrane separation. |
| Dr. Muhammad Abdul Qyyum Assistant Professor m.qyyum@squ.edu.om | 2517 | PhD (South Korea), 2020 | Process Design, Simulation, and Analysis (i.e., TEA, LCA); Green Hydrogen Economy, Decarbonization; LNG value chain; Integrated Energy Systems |
| Dr. Alireza Hasan Kazemi Assistant Professor a.kazemi@squ.edu.om | 2560 | PhD (UK), 2012 | Petroleum Engineering, Reservoir modelling and Simulation, Numerical modelling |
| Dr. Emre Artun Associate Professor e.artun@squ.edu.om | 1357 | PhD (USA), 2008 | Petroleum Engineering, Reservoir modelling and Simulation, Numerical modelling |

To obtain a Bachelor Degree in Petroleum and Natural Gas Engineering or Chemical and Process Engineering at the Department of Petroleum and Chemical Engineering, a student must successfully complete 136 credit hours that include university requirements, university electives, college requirements, college electives, major requirements, department requirements and major electives.

The Department requirements and major requirements needed for the fulfillment of the PNGE and CHPE programs are listed below:

▪ **LIST OF DEPARTMENT REQUIRED COURSES:**

Engineering Thermodynamics, Fluid Flow, Numerical Methods, Professional Practice, Statistics for Engineers, Engineering Economy and Management for PCE.

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▪ **LIST OF PETROLEUM & NATURAL GAS ENGINEERING REQUIRED COURSES**

Introduction to Geology I, Introductory Applied Mechanics, Chemistry for Petroleum Engineering, Introduction to Petroleum and Natural Gas Engineering, Rock and Fluid Properties, Heat and Mass Transfer, Petroleum Geology for Engineers, Drilling Technology, Drilling Technology Lab, Reservoir Engineering, General Geophysics, Formation Evaluation, Well Testing, Reservoir Simulation, Production Engineering, Project I, Secondary and Enhanced Oil Recovery, Health, Safety and Environment (HSE), Field Processing of Natural Gas and Project II. In addition, students need to select 4 courses from the list of major electives provided in the degree plan.

▪ **LIST OF CHEMICAL & PROCESS ENGINEERING REQUIRED COURSES**

General Chemistry II, Principles of Chemical Processes, Organic Chemistry, Materials Engineering, Heat Transfer, Industrial Electrochemistry, Chemical Engineering Thermodynamics, Unit Operations I, Unit Operations II, Chemical Engineering Lab I, Chemical Engineering Lab II Chemical Engineering Lab III, Computer Aided Design, Chemical Reaction Engineering, Plant and Process Design, Chemical Process Control, Chemical Process Safety, Project I, Project II. In addition, students need to select 5 courses from the list of major electives provided in the degree plan.

The Petroleum and Natural Gas engineering graduates are qualified to serve in the petroleum engineering facets of drilling, well logging, reservoir, production and gas processing. The Chemical and Process engineer graduates on the other hand can serve in a diverse range of chemical and petrochemical industries.

The job market for an SQU Petroleum and Natural Gas Engineering, and Chemical and Process Engineering graduate is vast. A graduate can work in the public or private sector. Prospective employers in Oman include: Ministries, Municipalities, PDO, Oman LNG, Petroleum Refineries, Oil companies (Schlumberger, Halliburton, British Petroleum, Shell, etc...), Chemical, Petrochemical, Food Companies, Desalination Plants, Power Generation Plants, and many Consulting companies. Several students each year also pursue graduate degrees from reputed universities across the globe.

For full details of courses offered in the department, see the enclosed degree plans in the Appendix.

For information about the department, faculty members and course descriptions visit the department website at: <https://www.squ.edu.om/engineering/About/Departments/Petroleum-and-Chemical-Engineering>

3.5 APPLICATION FORMS FOR:

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3.5.1 SPECIALIZATION OR ADMISSION TO ENGINEERING PROGRAMS AND CHANGE OF PROGRAM

The selection for specialization will be based on the cumulative GPA after every semester.

ADUS normally calls for specialization application every end of the semester. An electronic form (a unique hyperlink) will be sent to the students to register online. This form can be used to apply for NEW or CHANGE of specialization

More details about the specialization requirements and guidelines can be found in the following link: <https://www.squ.edu.om/engineering/Students/Specialization-Requirements>.

3.5.2 GRADE APPEAL

Procedures:

- 1- Please contact course instructor to discuss your grade before applying grade appeal.
- 2- Grade appeal is only accepted via Assistant Dean's Office Email: adus.engr@squ.edu.om.
- 3- Carefully read the instructions at the top of the first page of the attached appeal form.
- 4- If you decided to apply, then fill out the sections in the first page of the appeal form.
- 5- You need to pay a fee of (5 OMR) via bank transfer to SQU Bank account number (0304008086870018) in Bank Muscat.
- 6- Send the appeal form and a copy of Bank transfer receipt to the email mentioned above.
- 7- The Assistant Dean office will send the application to the concerned Head of Department.
- 8- The Head of Department will form a departmental committee to study the application and provide suggestions.

Once the committee suggestion is approved, the Assistant Dean Office will inform the student with the final decision via email.

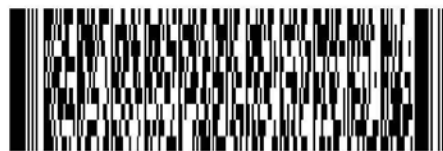
For more information:

The Office of Assistant Dean for Undergraduate Studies

Phone number: 24142686/24145292



**Sultan Qaboos University
College of Engineering
Grade Appeal Form**



A. Grade Appeal Information and Procedure:

General Information of SQU Academic Regulations for Grade Appeal:

- 1- Students have the right to appeal against course grade within *30 days* from the official announcement of the results.
- 2- Student shall discuss his/her grade *first* with the Instructor concerned. If the Instructor rejects to review the grade, the student shall have the right to appeal using this form, following the procedure shown below.
- 3- Students should understand that the appealed grade might change to a lower or a higher grade or remain unchanged.

Grade Appeal Procedure:

- 1- Student to fill out Sections **B**, **C**, and **D** of this form. Please print out both pages and sign the form.
- 2- Student to submit the signed form to the Assistant Dean for Undergraduate Studies (ADUS), Room # 2020.
- 3- ADUS shall forward the appeal form to the concerned Head of Department (HoD).
- 4- The Head of the Department shall form an Ad-hoc Committee to consider the appeal.
- 5- The Instructor of the course shall be one of the members of the committee.
- 6- The Instructor shall make the relevant material available to the Ad-hoc committee.
- 7- The committee shall report its recommendations to the Head of the Department in writing using this form.
- 8- Based on the report of the Ad-hoc committee, the Head of the Department shall make a decision on the appeal.
- 9- The decision of the Head of the Department shall be forwarded to the Dean through ADUS for approval.
- 10- Head of the Department shall inform the student about the final decision of the appeal.
- 11- Student can appeal to the Vice Chancellor (VC) against the College's decision.

B. Student Information: *(student to fill)*

Student Name:

ID/Cohort:

Cumulative GPA:

Semester GPA:

Load Status:

C. Course Information: *(student to fill)*

Semester/year:

Course Title:

Course Code:

Section:

Marks before Final Exam:

Current Grade Letter:

Instructor:

D. Reasons for Appeal: *(student to fill) (please attach supporting letter or documents if needed)*

Student Signature: _____

Date: _____

For ADUS Office use only: *(Student Receipt of Grade Appeal Request)*

Student Name:

ID:

Course Code:

Section:

Semester:

Date Received:

STAMP

E. Ad-Hoc Committee Members: *(formed by HoD)*

| S | Names: | Signature: <i>(for the given decision)</i> |
|----|--------|--|
| 1. | | |
| 2. | | |
| 3. | | |

F. Committee Decision: *(Ad-Hoc Committee to fill)*

G. Student Final Grade After Committee Decision: *(HoD to fill)*

The final appealed grade is: Lower ☐ Raised ☐ Unchanged ☐

The FINAL grade letter is: _____

HoD Signature: _____ Date: _____

H. Dean's Approval *(Dean to fill)*

The FINAL grade is: Approved ☐ Denied ☐

Comments:

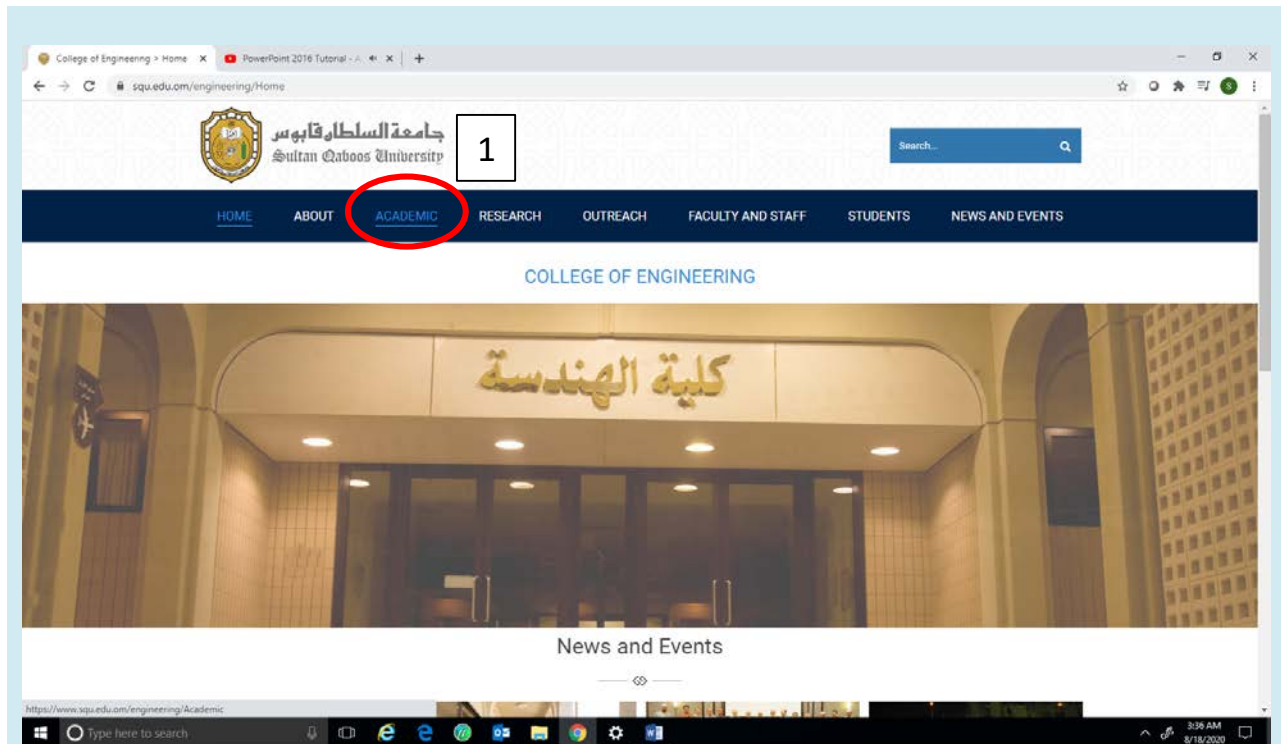
College Stamp

Dean Signature: _____ Date: _____

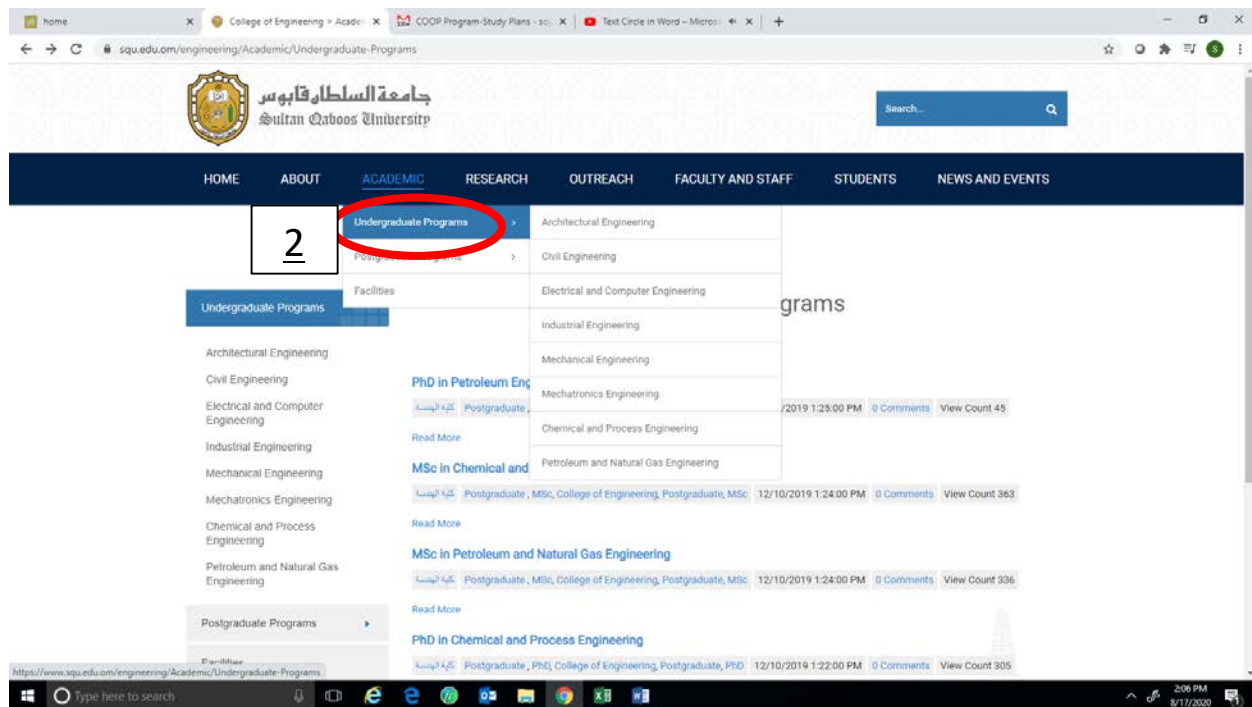


3.6 APPENDIX**DEGREE AND STUDY PLANS**

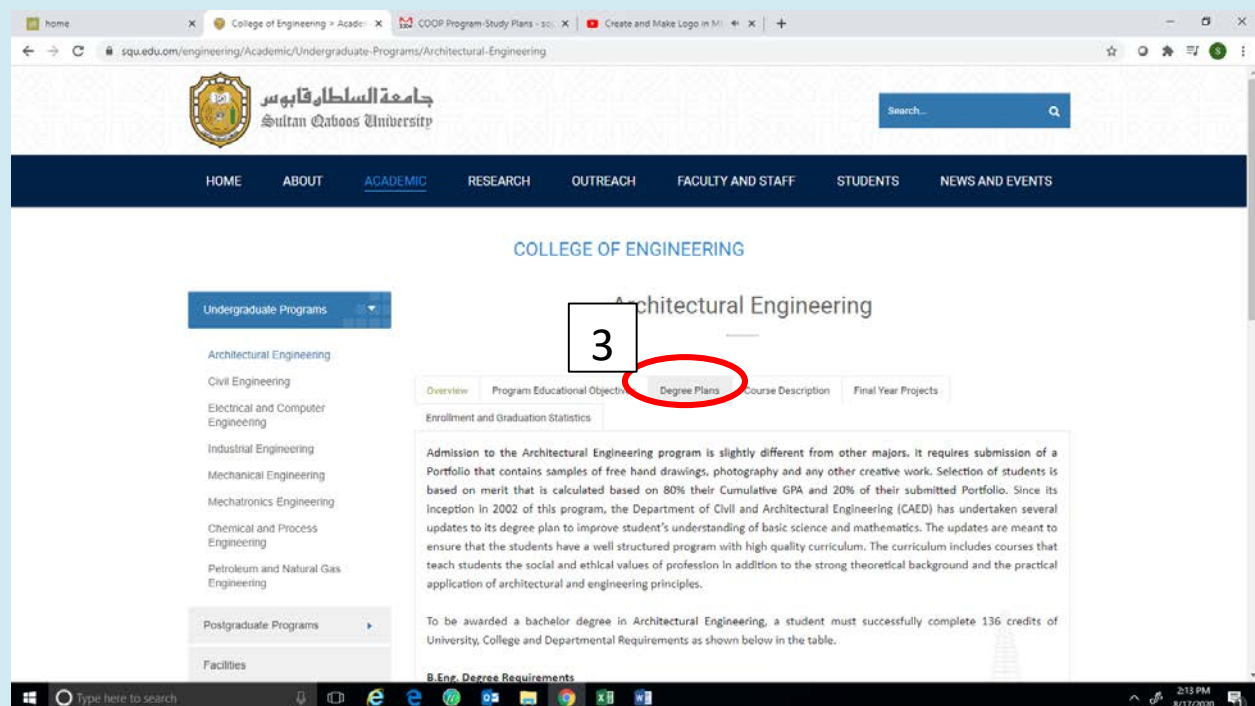
To access the Degree plan, please follow the steps:



1. Open College of Engineering Webpage: www.squ.edu.om/engineering. Then click on ACADEMIC



2. Choose UNDERGRADUATE. Choose your program



Last update on Aug 05, 2024

3 Choose DEGREE PLAN

The screenshot shows a web browser window with the URL squ.edu.om/engineering/Academic/Undergraduate-Programs/Architectural-Engineering. The page is titled "COLLEGE OF ENGINEERING" and "Architectural Engineering". On the left, there is a sidebar with a list of undergraduate programs: Architectural Engineering, Civil Engineering, Electrical and Computer Engineering, Industrial Engineering, Mechanical Engineering, Mechatronics Engineering, Chemical and Process Engineering, and Petroleum and Natural Gas Engineering. The "Architectural Engineering" program is selected. The main content area has tabs for "Overview", "Program Educational Objectives", "Degree Plans", "Course Description", and "Final Year Projects". The "Degree Plans" tab is active. Below the tabs, there is a section titled "Enrollment and Graduation Statistics" with a paragraph stating: "In order to graduate, a student is required to complete a total of 136 credit hours resulting in the award of a Bachelor Degree in Architecture Engineering (AE). The credit hours are allocated to University, College and Department requirements." Below this, there is a list of degree plans with the text: "The AE undergraduate Degree plans can be downloaded by clicking on the following links." The list includes links for the 2019, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, and 2008 degree plans, each with an update date. The "2019 Degree Plan" link is circled in red, and a box with the number 4 is placed next to it. The Windows taskbar at the bottom shows the date as 8/17/2020 and the time as 3:05 PM.

4. Choose the preferred YEAR of Degree Plan

*or email us at adus.engr@squ.edu.om to provide you with the degree plans.



College : **ENGINEERING**
 Department : **CIVIL AND ARCHITECTURAL ENGINEERING**
 Cohorts : **2024**
 Degree : **B. ENG.**
 Major Specialization : **ARCHITECTURAL ENGINEERING**



| Summary of Credits: | | |
|--|-----|------------|
| University Requirements (UR) | | 6 |
| General Foundation Program | NC* | |
| Arabic | 2 | |
| Contemporary Omani State and People | 2 | |
| Oman & Islamic Civilization or Islamic Culture | 2 | |
| University Electives (UE) | | 6 |
| See List A | | |
| College Requirements (CR) | | 32 |
| See list B | | |
| College Electives (CE) | | 3 |
| See list C | | |
| Departmental Requirements (DR) | | 41 |
| See list D | | |
| Departmental Electives (DE) | | 0 |
| See list E | | |
| Major Requirements (AR) | | 62 |
| See list F | | |
| Major Electives (AE) | | 6 |
| See list G | | |
| Minor Requirements (IR) | | 0 |
| See list H | | |
| Minor Electives (IE) | | 0 |
| See list I | | |
| Specialization Requirements (SR) | | 0 |
| See list J | | |
| Specialization Electives (SE) | | 0 |
| See list K | | |
| TOTAL | | 156 |

* Not Credited

For reference contact: HoD
 HoD
 Dean's Office
 Admission and Registration



Digitally signed by Khalid Al-Shamsi
 DN: cn=Khalid Al-Shamsi, o=Sultan
 Qaboos University, ou=Department of
 Civil & Architectural Engineering,
 email=khalidshamsi@sq.edu.om, c=OM
 Date: 2024.06.02 16:47:56 +04'00'

Ext. 1332
 Date: **06/02/2024**
 Date: **02/06/2024**
 Date:

Last update on: **19/05/2024**

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort (Scheme I)

| Scheme I FP1 (Fall 2024) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--------------------------------|--------------|----------------------------|----------|-------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total | | 0 | | |

| Scheme I Semester 1 (Spring 2025) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---|----------------------|--|-----------|-------------------|------|
| | HIST1010 ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2 | | UR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | CHEM1071 | General Chemistry for Engineers | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total | | 14 | | |

| Scheme I Semester 2 (Fall 2025) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------------------------------|-----------------------|---|-----------|-------------------|------|
| | ARAB1060 ⁺ | Arabic | 2 | | UR |
| | | University Elective I | 2 | | UE |
| | SOCY1005 ⁺ | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II For Science and Engineering | 3 | MATH 2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | Total | | 16 | | |

| Scheme I Semester 3 (Spring 2026) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---|--------------|----------------------------------|-----------|-----------------------------|------|
| | | University Elective II | 2 | | UE |
| | | College Elective | 3 | | CE |
| | CIVL4006 | Prob. & Statistics for Engineers | 3 | MATH 2107 | DR |
| | PHYS2108 | Physics For Engineering II | 4 | PHYS2107 or PHYS2101 | CR |
| | CIVL3011 | Statics | 3 | PHYS2107 or PHYS2101 | DR |
| | Total | | 15 | | |

⁺For non-Omani and non-Arabic speaking students, refer to Appendix A.

| Scheme I Semester 4 (Fall 2026) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------------------------------|--------------|---|-----------|----------------------|------|
| | MATH3171 | Linear Algebra & Multi. Var. Calculus for Engineers | 3 | MATH2108 or MATH2109 | CR |
| | AREN2312 | Architectural Drawing | 2 | | AR |
| | CIVL3056 | Surveying | 3 | MATH2107 | DR |
| | CIVL3086 | Mechanics of Materials | 3 | CIVL3011 | DR |
| | CIVL3096 | Construction Materials | 3 | CHEM1071, CIVL3011 | DR |
| | AREN3211 | Architectural Design Theory | 2 | | AR |
| | Total | | 16 | | |

| Scheme I Semester 5 (Spring 2027) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---|--------------|----------------------------------|-----------|--------------------|------|
| | CIVL4046 | Fluid Mechanics | 3 | CIVL3011 | DR |
| | CIVL3036 | Structures I | 3 | CIVL3086 | DR |
| | AREN2111 | Architectural Design I | 3 | AREN2312, AREN3211 | AR |
| | AREN2313 | Architectural Graphics | 3 | AREN2312 | AR |
| | AREN2411 | History I: Modern & Contemporary | 2 | | AR |
| | Total | | 14 | | |

| Scheme I Semester 6 (Fall 2027) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------------------------------|--------------|--------------------------------------|-----------|----------------------------------|------|
| | AREN3811 | Building Construction Methods | 3 | CIVL3096 | AR |
| | AREN3112 | Architectural Design II | 3 | AREN2111 | AR |
| | AREN3312 | Introduction to CAAD | 3 | AREN2312 | AR |
| | MATH4174 | Differential Equations for Engineers | 3 | LANC2161, (MATH2108 or MATH2109) | CR |
| | CIVL4400 | Professional Practice and Ethics | 2 | | DR |
| | MEIE3141 | Thermodynamics I | 3 | PHYS2108* or PHYS2102* | AR |
| | Total | | 17 | | |

| Scheme I Semester 7 (Spring 2028) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---|--------------|----------------------------------|-----------|--------------------|------|
| | AREN3814 | Climate-responsive Design | 3 | | AR |
| | AREN3313 | Architectural Working Drawing | 3 | AREN3811, AREN3312 | AR |
| | AREN3113 | Architectural Design III | 4 | AREN3112 | AR |
| | AREN3816 | Building Mechanical Systems | 3 | MEIE3141 | AR |
| | AREN3812 | Architectural Acoustics | 2 | | AR |
| | AREN3412 | History II: Islamic & Vernacular | 2 | | AR |
| | Total | | 17 | | |

| Scheme I Semester 8 (Fall 2028) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------------------------------|--------------|----------------------------|-----------|--|------|
| | | Architectural Elective I | 2 | | AE |
| | CIVL4206 | Concrete Design | 3 | CIVL3036, CIVL3096, (CIVL3046 or AREN3312) | DR |
| | CIVL5146 | Numerical Methods | 3 | (COMP2002 or ENGR2217), MATH3171 | DR |
| | AREN4813 | Building Illumination | 2 | | AR |
| | AREN4817 | Sanitary & Plumbing Design | 2 | CIVL4046 | AR |
| | AREN4114 | Architectural Design IV | 4 | AREN3113 | AR |
| | AREN4113 | Research Project | 1 | AREN3113 | AR |
| | Total | | 17 | | |

| Scheme I Semester 9 (Spring 2029) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---|--------------|-----------------------------|-----------|--|------|
| | CIVL4216 | Steelwork Design | 3 | CIVL3036, (CIVL3046 or AREN3312), (PHYS2108 or PHYS2102) | DR |
| | | Architectural Elective II | 2 | | AE |
| | AREN4818 | Building Electrical Systems | 3 | AREN4813 | AR |
| | AREN4115 | Graduation Project I | 4 | AREN4114, CIVL4206, AREN4113 | AR |
| | CIVL5204 | Engineering Economics | 3 | MATH2107 | DR |
| | Total | | 15 | | |

| Scheme II Summer 2028 | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------------------|--------------|---------------------|----------|-------------------|------|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | Total | | 0 | | |

| Scheme I Semester 10 (Fall 2029) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|-------------|-------------------------------|-----|---|------|
| | | University Elective III | 2 | | UE |
| | | Architectural Elective III | 2 | | AE |
| | ERSC2020 | Geology for Engineers | 3 | | DR |
| | AREN5819 | Specifications and Quantities | 2 | AREN3313 | AR |
| | AREN5116 | Graduation Project II | 3 | AREN4115, AREN3816, AREN4818, AREN4817 | AR |
| | CIVL5336 | Construction Management | 3 | CIVL5204 | DR |
| | Total | | 15 | | |
| Total (All Program) | | | 156 | | |

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort (Scheme II)

| Scheme II FP1 (Fall 2024) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------------------------|--------------|----------------------------|----------|-------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total | | 0 | | |

| Scheme II FP2 (Spring 2025) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------------------------|--------------|----------------------------|----------|-------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total | | 0 | | |

| Scheme II Semester 1 (Fall 2025) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|--------------|---------------------------------------|-----------|-------------------|------|
| | HIST1010 | Oman & Islamic Civilization or | 2 | | UR |
| | ISLM1010 | Islamic Culture | | | |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | CHEM1071 | General Chemistry for Engineers | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total | | 14 | | |

| Scheme II Semester 2 (Spring 2026) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|-----------------------|---|-----------|-------------------|------|
| | ARAB1060 ⁺ | Arabic | 2 | | UR |
| | | University Elective I | 2 | | UE |
| | LANC2161 | English for Engineering II | 3 | LANC 2160 | CR |
| | SOCY1005 ⁺ | Contemporary Omani State and People | 2 | | UR |
| | MATH2109 | Calculus II For Science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | Total | | 16 | | |

⁺For non-Omani and non-Arabic speaking students, refer to Appendix A.

| Scheme II Summer 2026 | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------------------|--------------|------------------|----------|----------------------|------|
| | | College Elective | 3 | | CE |
| | CIVL3011 | Statics | 3 | PHYS2107 or PHYS2101 | DR |
| | Total | | 6 | | |

| Scheme II Semester 3 (Fall 2026) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|--------------|---|-----------|----------------------|------|
| | MATH3171 | Linear Algebra & Multi. Var. Calculus for Engineers | 3 | MATH2108 or MATH2109 | CR |
| | AREN2312 | Architectural Drawing | 2 | | AR |
| | CIVL3056 | Surveying | 3 | MATH2107 | DR |
| | CIVL3086 | Mechanics of Materials | 3 | CIVL3011 | DR |
| | PHYS2108 | Physics For Engineering II | 4 | PHYS2107 or PHYS2101 | CR |
| | AREN3211 | Architectural Design Theory | 2 | | AR |
| | Total | | 17 | | |

| Scheme II Semester 4 (Spring 2027) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|--------------|----------------------------------|-----------|--------------------|------|
| | CIVL3096 | Construction Materials | 3 | CHEM1071, CIVL3011 | DR |
| | | University Elective II | 2 | | UE |
| | CIVL3036 | Structures I | 3 | CIVL3086 | DR |
| | AREN2111 | Architectural Design I | 3 | AREN2312, AREN3211 | AR |
| | AREN2313 | Architectural Graphics | 3 | AREN2312 | AR |
| | AREN2411 | History I: Modern & Contemporary | 2 | | AR |
| | Total | | 16 | | |

| Scheme II Summer 2027 | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------------------|--------------|----------------------------------|----------|-------------------|------|
| | CIVL4006 | Prob. & Statistics for Engineers | 3 | MATH2107 | DR |
| | CIVL5204 | Engineering Economics | 3 | MATH2107 | DR |
| | Total | | 6 | | |

| Scheme II Semester 5 (Fall 2027) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|--------------|----------------------------------|-----------|------------------------|------|
| | AREN3811 | Building Construction Methods | 3 | CIVL3096 | AR |
| | AREN3112 | Architectural Design II | 3 | AREN2111 | AR |
| | AREN3312 | Introduction to CAAD | 3 | AREN2312 | AR |
| | CIVL4400 | Professional Practice and Ethics | 2 | | DR |
| | CIVL4046 | Fluid Mechanics | 3 | CIVL3011 | DR |
| | MEIE3141 | Thermodynamics I | 3 | PHYS2108* or PHYS2102* | AR |
| | Total | | 17 | | |

| Scheme II Semester 6 (Spring 2028) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|-------------|----------------------------------|-----------|--------------------|------|
| | AREN3814 | Climate-responsive Design | 3 | | AR |
| | AREN3313 | Architectural Working Drawing | 3 | AREN3811, AREN3312 | AR |
| | AREN3113 | Architectural Design III | 4 | AREN3112 | AR |
| | AREN3816 | Building Mechanical Systems | 3 | MEIE3141 | AR |
| | AREN3812 | Architectural Acoustics | 2 | | AR |
| | AREN3412 | History II: Islamic & Vernacular | 2 | | AR |
| Total | | | 17 | | |

| Scheme II Semester 7 (Fall 2028) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|-------------|----------------------------|-----------|--|------|
| | | Architectural Elective I | 2 | | AE |
| | CIVL 4206 | Concrete Design | 3 | CIVL3036, CIVL3096, (CIVL3046 or AREN3312) | DR |
| | CIVL5146 | Numerical Methods | 3 | (COMP2002 or ENGR2217), MATH3171 | DR |
| | AREN4813 | Building Illumination | 2 | | AR |
| | AREN4817 | Sanitary & Plumbing Design | 2 | CIVL4046 | AR |
| | AREN4114 | Architectural Design IV | 4 | AREN3113 | AR |
| | AREN4113 | Research Project | 1 | AREN3113 | AR |
| Total | | | 17 | | |

| Scheme II Semester 8 (Spring 2029) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|-------------|---|-----------|--|------|
| | CIVL4216 | Steelwork Design | 3 | CIVL3036, (CIVL3046 or AREN3312), (PHYS2108 or PHYS2102) | DR |
| | | Architectural Elective II | 2 | | AE |
| | AREN4818 | Building Electrical Systems | 3 | AREN4813 | AR |
| | AREN4115 | Graduation Project I | 4 | AREN4114, CIVL4206, AREN4113 | AR |
| | MATH4174 | Differential Equations for Engineers | 3 | (LANC2161, MATH2108) or (LANC2161, MATH2109) | CR |
| Total | | | 15 | | |

| Scheme II Summer 2029 | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------------------|-------------|---------------------|----------|-------------------|------|
| | ENGR4007 | Industrial Training | 0 | | |
| Total | | | 0 | | |

| Scheme II Semester 9 (Fall 2029) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|-------------|-------------------------------|-----------|---|------|
| | | University Elective III | 2 | | UE |
| | | Architectural Elective III | 2 | | AE |
| | ERSC2020 | Geology for Engineers | 3 | | DR |
| | AREN5819 | Specifications and Quantities | 2 | AREN3313 | AR |
| | AREN5116 | Graduation Project II | 3 | AREN4115, AREN3816, AREN4818, AREN4817 | AR |
| | CIVL5336 | Construction Management | 3 | CIVL5204 | DR |
| Total | | | 15 | | |

| | |
|----------------------------|------------|
| Total (All Program) | 156 |
|----------------------------|------------|

Appendix A

| No. | Cohorts 2018 and before | Credits | Cohorts 2018 and after | Cr. | Notes |
|------------|--------------------------------|----------------|-------------------------------|------------|---|
| 1 | ARAB1001 | 3 | ARAB1060 | 2 | |
| 2 | SOCY1001 | 1 | SOCY1005 | 2 | For Omanis Only |
| 3 | -- | -- | SOCY1007 | 2 | For Non-Omanis |
| 4 | ARAB1019 | | | 3 | For Non-Arabic Speaking Students. Offered only in Fall semesters |

Notes:

- For the courses (SOCY1005, SOCY1007, HIST1010), the course materials and exams are in English for non-Arabic speaking students.
- Currently, there is no Arabic course with 2 credits for the non-Arabic speaking students of cohorts 2018 and after. Those students have to register the ARAB1019 as shown in the table above.

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort
LIST A* – UNIVERSITY ELECTIVES

Please scan the barcode below to view the list of University Elective courses allowed for ENG students.



* University elective must be non-science and non-linguistic course. Any humanity and social course not listed above can not be accepted as university elective.

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort
LIST B: College REQUIREMENTS (CR)

| Code | Title | Credits | Pre-Requisite / Co-req. * |
|--------------|---|-----------|--|
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering I | 3 | LANC2160 |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II For Science and Engineering | 3 | MATH 2107 |
| MATH3171 | Linear Algebra & Multivariate Calculus | 3 | MATH2108 or MATH2109 |
| MATH4174 | Differential Equations for Engineers | 3 | (LANC2161, MATH2108) or (LANC2161, MATH2109) |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* |
| PHYS2108 | Physics for Engineering II | 4 | PHYS2107 or PHYS2101 |
| CHEM1071 | General Chemistry for Engineers | 3 | |
| ENGR4007 | Industrial Training | 0 | |
| Total | | 32 | |

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort
LIST C: College Electives (CE)

One Course- 3 credit hours: The elective course will be offered from the following courses subject to availability.

| Code | Title | Credits | Pre-Requisite / Co-req. * |
|-----------|---|---------|---------------------------|
| COMP 2002 | Introduction to Comp. Programming for Engineers | 3 | |
| ENGR2217 | Computer Programming | 3 | |

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort
LIST D: Department Requirement (DR)

| Code | Title | Credits | Pre-Requisite / Co-req. * |
|--------------|----------------------------------|----------------|--|
| CIVL3011 | Statics | 3 | PHYS2107 or PHYS2101 |
| CIVL3056 | Surveying | 3 | MATH2107 |
| CIVL3086 | Mechanics of Materials | 3 | CIVL3011 |
| CIVL3096 | Construction Materials | 3 | CIVL3011, CHEM1071 |
| ERSC2020 | Geology for Engineers | 3 | |
| CIVL3036 | Structures I | 3 | CIVL3086 |
| CIVL4006 | Prob. & Statistics for Engineers | 3 | MATH2107 |
| CIVL4046 | Fluid Mechanics | 3 | CIVL3011 |
| CIVL4206 | Concrete Design | 3 | CIVL3036, CIVL3096, (CIVL3046 or AREN3312) |
| CIVL4400 | Professional Practice & Ethics | 2 | |
| CIVL5146 | Numerical Methods | 3 | (ENGR2217 or COMP2002), MATH 3171 |
| CIVL5204 | Engineering Economics | 3 | MATH2107 |
| CIVL4216 | Steelwork Design | 3 | CIVL3036, (CIVL3046 or AREN3312), (PHYS2108 or PHYS2102) |
| CIVL5336 | Construction Management | 3 | CIVL5204 |
| CIVL3007 | Training | 0 | CIVL3056 |
| Total | | 41 | |

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort
LIST F: MAJOR Requirements (AR)

| Code | Title | Credits | Pre-Requisite / Co-req. * |
|--------------|----------------------------------|----------------|--|
| AREN2312 | Architectural Drawing | 2 | |
| AREN2111 | Architectural Design I | 3 | AREN2312, AREN3211 |
| AREN2313 | Architectural Graphics | 3 | AREN2312 |
| AREN2411 | History I: Modern & Contemporary | 2 | |
| AREN3811 | Building Construction Methods | 3 | CIVL3096 |
| AREN3112 | Architectural Design II | 3 | AREN 2111 |
| AREN3312 | Introduction to CAAD | 3 | AREN2312 |
| AREN3211 | Architectural Design Theory | 2 | |
| MEIE 3141 | Thermodynamics I | 3 | PHYS2108* or PHYS2102* |
| AREN3814 | Climate-responsive Design | 3 | |
| AREN3313 | Architectural Working Drawing | 3 | AREN3811, AREN3312 |
| AREN3113 | Architectural Design III | 4 | AREN3112 |
| AREN3816 | Building Mechanical Systems | 3 | MEIE3141 |
| AREN3812 | Architectural Acoustics | 2 | |
| AREN3412 | History II: Islamic & Vernacular | 2 | |
| AREN4813 | Building Illumination | 2 | |
| AREN4817 | Sanitary & Plumbing Design | 2 | CIVL4046 |
| AREN4114 | Architectural Design IV | 4 | AREN3113 |
| AREN4113 | Research Project | 1 | AREN3113 |
| AREN4818 | Building Electrical Systems | 3 | AREN4813 |
| AREN4115 | Graduation Project I | 4 | AREN4114, CIVL4206 |
| AREN5819 | Specifications and Quantities | 2 | AREN3313 |
| AREN5116 | Graduation Project II | 3 | AREN4115, AREN3816, AREN4818, AREN4817 |
| Total | | 62 | |

Department of Civil and Architectural Engineering
Architectural Engineering Degree Plan: 2024 Cohort
LIST G: MAJOR electives (AE)
Architectural Engineering Electives

Technical Elective Courses – 6 credit hours

The student should select 3 courses (6 credit hours) from the following architectural elective courses:

| Code | Title | Credits | Pre-Requisite / Co-req. * |
|-------------|--|----------------|----------------------------------|
| AREN3611 | Principles of Settlement Planning | 2 | |
| AREN3808 | Computer Aided Lighting Design | 2 | AREN4813 |
| AREN3809 | Architectural Conservation Techniques | 2 | |
| AREN3815 | Sustainable Design in Hot climates | 2 | |
| AREN4202 | Architectural Professional Practice | 2 | CIVL4400 |
| AREN4203 | Behavioral Factors in Housing Design | 2 | |
| AREN4205 | Residential Planning and Design | 2 | |
| AREN4304 | Special Topics in CAD | 2 | |
| AREN4305 | Introduction to Interior Design | 2 | |
| AREN4306 | Spatial Analysis Techniques | 2 | |
| AREN5403 | Omani Vernacular Architecture | 2 | |
| AREN5801 | Solar Energy in Buildings | 2 | |
| AREN5802 | Modern Building Construction Systems | 2 | AREN3811 |
| AREN5805 | Building Energy Conservation and Analysis | 2 | |
| AREN4222 | Fire and Smoke Control in Buildings | 2 | |
| AREN4601 | Landscape Design in Hot Regions | 2 | |
| AREN4604 | Concepts and Elements of Urban Design in Hot Regions | 2 | |
| AREN4311 | Emerging Technologies in Arch. Engineering | 2 | AREN3816 |
| AREN4312 | Parametric & Regenerative Design | 2 | AREN3312 |
| AREN4313 | Building Information Modeling | 2 | AREN3312 |
| AREN4701 | Design of Air Conditioning Systems | 2 | AREN3816 |



SULTAN QABOOS UNIVERSITY



Degree and Study Plan

College
Department
Cohort
Degree
Major

ENGINEERING
PETROLEUM AND CHEMICAL ENGINEERING
2024
BACHELOR OF ENGINEERING
CHEMICAL AND PROCESS ENGINEERING

| SUMMARY OF CREDITS: | Cr. |
|--|------------|
| General Foundation Program | 0 |
| University Requirements (UR) | 6 |
| Arabic | 2 |
| Oman: State and People | 2 |
| Oman & Islamic Civilization or Islamic Culture | 2 |
| University Electives (UE) | 6 |
| See List A | |
| College Requirements (CR) | 32 |
| See list B | |
| College Electives (CE) | 3 |
| See list C | |
| Department Requirements (DR) | 20 |
| See list D | |
| Department Electives (DE) | 0 |
| See list E | |
| Major Requirements (AR) | 54 |
| See list F | |
| Major Electives (AE) | 15 |
| See list G | |
| TOTAL | 136 |

For reference contact: HoD

Ext. 1318

HoD

Date: 16/07/2024

Dean's Office



Date 23/07/2024

Admission and Registration

Date

Department of Petroleum and Chemical Engineering
Chemical and Process Engineering Program
Study Plan for Cohort 2024 (Scheme I: One Semester of Foundation)

IMPORTANT: **Bold font** courses are offered only ONCE a year in the semesters they are listed in.

SEMESTER 1 [FALL 2024]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|----------------------------|----------|-------------------|------|
| | General Foundation Program | 0 | | UR |
| Total Credits | | 0 | | |

SEMESTER 2 [SPRING 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------------|---|-----------|-------------------|------|
| HIST 1010 ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2 | | UR |
| LANC2160 | English for Engineering I | 3 | | CR |
| CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| ENGR1501 | Introduction to Engineering | 1 | | CR |
| ENGR1600 | Workshop I | 1 | | CR |
| MATH2107 | Calculus I | 4 | | CR |
| Total Credits | | 14 | | |

SEMESTER 3 [FALL 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------------------------|-----------|-------------------|------|
| | University Elective | 2 | | UE |
| ARAB1060 | Arabic | 2 | | UR |
| LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| SOCY1005# | Oman: State and People | 2 | | UR |
| MATH2109 | Calculus II for Science & Engineering | 3 | MATH2107 | CR |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| Total Credits | | 16 | | |

Non Omani students should take SOCY1007

SEMESTER 4 [SPRING 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-------------------------|--------------------------------------|-----------|--------------------|------|
| ENGR2217 or COMP2002 | Programing for Engineers | 3 | | CE |
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| CHEM2102 | General Chemistry II | 4 | CHEM1071 | AR |
| CHPE3102 | Engineering Thermodynamics | 3 | CHEM1071, MATH2107 | DR |
| CHPE3112 | Principles of Chemical Processes | 3 | CHEM1071 | AR |
| Total Credits | | 16 | | |

SEMESTER 5 [FALL 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---|-----------|-------------------|------|
| MATH3171 | Linear Algebra & Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| CHEM3324 | Organic Chemistry | 4 | CHEM1071 | AR |
| PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| CHPE3302 | Fluid Flow | 3 | CHPE3102 | DR |
| Total Credits | | 14 | | |

SEMESTER 6 [SPRING 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-----------------------------|-----------|--------------------------------|------|
| CHPE3101 | Materials Engineering | 3 | CHEM1071 | AR |
| PNGE3202 | Numerical Methods | 3 | MATH3171, COMP2002 or ENGR2217 | DR |
| CHEM3339 | Industrial Electrochemistry | 3 | CHEM2102 | AR |
| PNGE4101 | Statistics for Engineers | 3 | MATH2107 | DR |
| CHPE3402 | Heat Transfer | 3 | CHPE3112, CHPE3302, MATH4174 | AR |
| Total Credits | | 15 | | |

SEMESTER 7 [FALL 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-------------------------------------|-----------|-------------------|------|
| | Major Elective I** | 3 | | AE |
| CHPE3103 | Professional Practice | 2 | LANC2161 | DR |
| CHPE4112 | Chemical Engineering Thermodynamics | 3 | CHPE3102 | AR |
| CHPE4212 | Unit Operations I | 3 | CHPE3402 | AR |
| CHPE4312 | Chemical Engineering Lab I | 2 | CHPE3402 | AR |
| PNGE5103 | Engineering Economy | 3 | MATH2107 | AR |
| Total Credits | | 16 | | |

SEMESTER 8 [SPRING 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-------------------------------|-----------|----------------------|------|
| | University Elective | 2 | | UE |
| | Major Elective II** | 3 | | AR |
| CHPE4114 | Computer Aided Design | 2 | CHPE4512*, CHPE4612* | AR |
| CHPE4512 | Chemical Reaction Engineering | 3 | CHEM3324 | AR |
| CHPE4612 | Unit Operations II | 3 | CHPE4112, CHPE4212 | AR |
| CHPE5612 | Chemical Process Safety | 3 | CHPE3302, PHYS2108 | AR |
| Total Credits | | 16 | | |

[SUMMER 2028] "ENGR4007 is not required for COOP students"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------|----------|---------------------------|------|
| ENGR4007 | Industrial Training | 0 | Assistant Dean's Approval | CR |
| Total Credits | | 0 | | |

COOP I [FALL] "Cooperative Training is optional; students will be selected on competitive basis"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|------------------------|----------|---------------------------|------|
| CHPE5001 | Cooperative Training I | 0 | Assistant Dean's Approval | AE |
| Total Credits | | 0 | | |

COOP II [SPRING]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-------------------------|----------|-------------------|------|
| CHPE5002 | Cooperative Training II | 6 | CHPE5001 | AE |
| Total Credits | | 6 | | |

SEMESTER 9 [FALL 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-----------------------------|-----------|--|------|
| | Major Elective III** | 3 | | AE |
| CHPE4712 | Chemical Engineering Lab II | 2 | CHPE4312, PNGE4101, CHPE4612, CHEM3348 | AR |
| CHPE5112 | Chemical Process Control | 3 | PNGE3202, CHPE4512 | AR |
| CHPE5412 | Plant and Process Design | 3 | CHPE4612, PNGE5103, CHPE4412, CHPE4512 | AR |
| PNGE5203 | Management for PCE | 3 | PNGE5103 | DR |
| CHPE5312 | Project I | 2 | CHPE3101, CHPE3103, CHPE4114, CHPE4512, CHPE4612 | AR |
| Total Credits | | 16 | | |

SEMESTER 10 [SPRING 2029]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|------------------------------|-----------|------------------------------|------|
| | University Elective | 2 | | UE |
| | Major Elective IV** | 3 | | AE |
| | Major Elective V** | 3 | | AE |
| CHPE5212 | Chemical Engineering Lab III | 2 | CHPE4712, CHPE5112 | AR |
| CHPE5512 | Project II | 3 | CHPE5312, CHPE5412, CHPE5612 | AR |
| Total Credits | | 13 | | |

** COOP students need to take three Major Electives.

Department of Petroleum and Chemical Engineering
Chemical and Process Engineering Program
Study Plan for Cohort 2024 (Scheme II: Two Semesters of Foundation)

IMPORTANT: **Bold font** courses are offered only ONCE a year in the semesters they are listed in.

SEMESTER 1 [FALL 2024]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|----------------------------|----------|-------------------|------|
| | General Foundation Program | 0 | | UR |
| Total Credits | | 0 | | |

SEMESTER 2 [SPRING 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|----------------------------|----------|-------------------|------|
| | General Foundation Program | 0 | | UR |
| Total Credits | | 0 | | |

SEMESTER 3 [FALL 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-----------------------------------|-----------|-------------------|------|
| SOCY1005# | Oman: State and People | 2 | | UR |
| LANC2160 | English for Engineering I | 3 | | CR |
| CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| ENGR1501 | Introduction to Engineering | 1 | | CR |
| ENGR1600 | Workshop I | 1 | | CR |
| MATH2107 | Calculus I | 4 | | CR |
| Total Credits | | 14 | | |

Non Omani students should take SOCY1007

SEMESTER 4 [SPRING 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|----------------------|--|-----------|-------------------|------|
| | University Elective | 2 | | UE |
| ARAB1060 | Arabic | 2 | | UR |
| LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| HIST1010 ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2 | | UR |
| MATH2109 | Calculus II for Science & Engineering | 3 | MATH2107 | CR |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| Total Credits | | 16 | | |

[SUMMER 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-------------------------|--------------------------|----------|-------------------|------|
| | University Elective | 2 | | UE |
| ENGR2217 OR COMP2002 | Programing for Engineers | 3 | | CE |
| Total Credits | | 5 | | |

SEMESTER 5 [FALL 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|--------------------------------------|-----------|--------------------|------|
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| PNGE4101 | Statistics for Engineers | 3 | MATH2107 | DR |
| CHEM2102 | General Chemistry II | 4 | CHEM1071 | AR |
| CHPE3102 | Engineering Thermodynamics | 3 | CHEM1071, MATH2107 | DR |
| CHPE3112 | Principles of Chemical Processes | 3 | CHEM1071 | AR |
| Total Credits | | 16 | | |

SEMESTER 6 [SPRING 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|--|-----------|-------------------|------|
| MATH3171 | Linear Algebra and Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| PHYS2108 | Physics for Engineering II | 3 | PHYS2107 | CR |
| CHEM3339 | Industrial Electrochemistry | 3 | CHEM2102 | AR |
| CHPE3302 | Fluid Flow | 3 | CHPE3102 | DR |
| CHEM3324 | Organic Chemistry | 4 | CHEM1071 | AR |
| Total Credits | | 16 | | |

[SUMMER 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-----------------------|----------|------------------------------|------|
| CHPE3101 | Materials Engineering | 3 | CHEM1071 | AR |
| CHPE3402 | Heat Transfer | 3 | CHPE3112, CHPE3302, MATH4174 | AR |
| Total Credits | | 6 | | |

SEMESTER 7 [FALL 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-------------------------------------|-----------|--------------------------------|------|
| | Major Elective I** | 3 | | AE |
| CHPE3103 | Professional Practice | 2 | LANC2161 | DR |
| CHPE4112 | Chemical Engineering Thermodynamics | 3 | CHPE3102 | AR |
| CHPE4212 | Unit Operations I | 3 | CHPE3112, CHPE3402 | AR |
| CHPE4312 | Chemical Engineering Lab I | 2 | CHPE3402 | AR |
| PNGE3202 | Numerical Methods | 3 | MATH3171, COMP2002 or ENGR2217 | CR |
| Total Credits | | 16 | | |

SEMESTER 8 [SPRING 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-------------------------------|-----------|----------------------|------|
| | Major Elective II** | 3 | | AE |
| CHPE4114 | Computer Aided Design | 2 | CHPE4512*, CHPE4612* | AR |
| CHPE4512 | Chemical Reaction Engineering | 3 | CHEM3324 | AR |
| CHPE4612 | Unit Operations II | 3 | CHPE4112, CHPE4212 | AR |
| CHPE5612 | Chemical Process Safety | 3 | CHPE3302, PHYS2108 | AR |
| PNGE5103 | Engineering Economy | 3 | MATH2107 | DR |
| Total Credits | | 17 | | |

[SUMMER 2028] "ENGR4007 is not required for COOP students"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------|----------|---------------------------|------|
| ENGR4007 | Industrial Training | 0 | Assistant Dean's Approval | CR |
| Total Credits | | 0 | | |

COOP I [FALL] "Cooperative Training is optional; students will be selected on competitive basis"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|------------------------|----------|---------------------------|------|
| CHPE5001 | Cooperative Training I | 0 | Assistant Dean's Approval | AE |
| Total Credits | | 0 | | |

COOP II [SPRING]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-------------------------|----------|-------------------|------|
| CHPE5002 | Cooperative Training II | 6 | CHPE5001 | AE |
| Total Credits | | 6 | | |

SEMESTER 9 [FALL 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-----------------------------|-----------|--|------|
| | Major Elective III** | 3 | | AE |
| CHPE4712 | Chemical Engineering Lab II | 2 | CHPE4312, PNGE4101, CHPE4612, CHEM3348 | AR |
| CHPE5112 | Chemical Process Control | 3 | PNGE3202, CHPE4512 | AR |
| CHPE5412 | Plant and Process Design | 3 | CHPE4612, PNGE5103, CHPE4412, CHPE4512 | AR |
| PNGE5203 | Management for PCE | 3 | PNGE5103 | DR |
| CHPE5312 | Project I | 2 | CHPE3101, CHPE3103, CHPE4114, CHPE4512, CHPE4612 | AR |
| Total Credits | | 16 | | |


SEMESTER 10 [SPRING 2029]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|------------------------------|-----------|------------------------------|------|
| | University Elective | 2 | | UE |
| | Major Elective IV** | 3 | | AE |
| | Major Elective V** | 3 | | AE |
| CHPE5212 | Chemical Engineering Lab III | 2 | CHPE4712, CHPE5112 | AR |
| CHPE5512 | Project II | 3 | CHPE5312, CHPE5412, CHPE5612 | AR |
| Total Credits | | 13 | | |

**COOP students need to take three Major Electives.

Department of Petroleum and Chemical Engineering
Chemical and Process Engineering Program
Degree Plan for Cohort 2024

LIST A – UNIVERSITY ELECTIVES (6 Credits)

| | |
|---|--|
| <p>List of allowed University Electives that can be taken by Engineering Students</p> <p><i>“ This list will continuously be updated by the Assistant Dean’s office for new university electives”</i></p> |  <p>https://www.squ.edu.om/engineering/Students/University-Elective-courses-allowed-for-Engineering-students</p> |
|---|--|

LIST B: COLLEGE REQUIREMENTS (32 credits)

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|--|-----------|---------------------------|
| CHEM1071 | General Chemistry for Engineering | 3 | |
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering II | 3 | LANC 2160 |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II for Science & Engineering | 3 | MATH 2107 |
| MATH3171 | Linear Algebra & Multivariate Calculus for Engineers | 3 | MATH2109 |
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* |
| PHYS2108 | Physics for Engineering II | 4 | PHYS 2107 |
| ENGR4007 | Industrial Training | 0 | |
| Total | | 32 | |

LIST C: COLLEGE ELECTIVES (3 credits)

Students should select ONE course (3 credits) from the following two courses

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|--|----------|---------------------------|
| COMP2002 | Introduction to Computer Programming for Engineers | 3 | |
| ENGR2217 | Programming for Engineers | 3 | |
| Total | | 3 | |

LIST D: DEPARTMENT REQUIREMENTS (20 credits)

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|----------------------------|-----------|--------------------------------|
| CHPE3102 | Engineering Thermodynamics | 3 | CHEM1071, MATH2107 |
| CHPE3103 | Professional Practice | 2 | LANC2161 |
| CHPE3302 | Fluid Flow | 3 | CHPE3102 |
| PNGE3202 | Numerical Methods | 3 | MATH3171, COMP2002 or ENGR2217 |
| PNGE4101 | Statistics for Engineers | 3 | MATH2107 |
| PNGE5103 | Engineering Economy | 3 | MATH2107 |
| PNGE5203 | Management for PCE | 3 | PNGE5103 |
| Total | | 20 | |

LIST F: MAJOR REQUIREMENTS (54 credits)

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|-------------------------------------|-----------|--|
| CHEM2102 | General Chemistry II | 4 | CHEM1071 |
| CHEM3324 | Organic Chemistry for Engineering | 4 | CHEM1071 |
| CHEM3339 | Industrial Electrochemistry | 3 | CHEM2102 |
| CHPE3101 | Materials Engineering | 3 | CHEM1071 |
| CHPE3112 | Principles of Chemical Processes | 3 | CHEM1071 |
| CHPE3402 | Heat Transfer | 3 | CHPE3112, CHPE3302, MATH4174 |
| CHPE4112 | Chemical Engineering Thermodynamics | 3 | CHPE3102 |
| CHPE4114 | Computer Aided Design | 2 | CHPE4512*, CHPE4612* |
| CHPE4212 | Unit Operations I | 3 | CHPE3402 |
| CHPE4312 | Chemical Engineering Lab I | 2 | CHPE3402 |
| CHPE4512 | Chemical Reaction Engineering | 3 | CHEM3324 |
| CHPE4612 | Unit Operations II | 3 | CHPE4112, CHPE4212 |
| CHPE4712 | Chemical Engineering Lab II | 2 | CHPE4312, PNGE4101, CHPE4612, CHEM3348 |
| CHPE5112 | Chemical Process Control | 3 | PNGE3202, CHPE4512 |
| CHPE5212 | Chemical Engineering Lab III | 2 | CHPE4712, CHPE5112 |
| CHPE5312 | Project I | 2 | CHPE3101, CHPE3103, CHPE4114, CHPE4512, CHPE4612 |
| CHPE5412 | Plant and Process Design | 3 | CHPE4612, PNGE5103, CHPE4412, CHPE4512 |
| CHPE5512 | Project II | 3 | CHPE5312, CHPE5412, CHPE5612 |
| CHPE5612 | Chemical Process Safety | 3 | CHPE3302, PHYS2108 |
| Total | | 54 | |

LIST G: MAJOR ELECTIVES (15 Credits)

- Non-COOP students need to take **5** courses (15 Credits) from this list.
- COOP students need to take **3** courses (9 Credits) from this list, in addition to CHPE5001 & CHPE5002.

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|---|-----------|--------------------------------|
| CHPE3212 | Chemical Process Industries | 3 | CHEM3324 |
| CHPE4102 | Polymers | 3 | CHEM3324 or PNGE3111 |
| CHPE4106 | Introduction to Colloids and Interface Science | 3 | CHEM3324 or PNGE3111 |
| CHPE4116 | Green Hydrogen and Energy Storage | 3 | CHEM3339 |
| CHPE4202 | Corrosion Engineering | 3 | CHEM1071 |
| CHPE4206 | Introduction to Nanotechnology | 3 | CHEM3324 or PNGE3111 |
| CHPE4302 | Desalination | 3 | CHPE3402 or PNGE3312 |
| CHPE4306 | Wastewater Treatment | 3 | CHEM3324 or PNGE3111 |
| CHPE4402 | Natural Gas Processing | 3 | CHPE4112 |
| CHPE4406 | Sustainable Energy | 3 | CHPE3402 or PNGE3312 |
| CHPE5106 | Carbon Capture Utilization and Storage | 3 | CHPE3402 or PNGE3312 |
| CHPE5116 | Biochemical Engineering | 3 | CHPE4512 |
| CHPE5206 | Hydrogen Technology | 3 | PNGE5103 |
| CHPE5207 | Petroleum Refining Processes | 3 | CHEM3324 or PNGE3111 |
| CHPE5216 | Green Process Engineering | 3 | CHPE4512, CHPE4612 |
| CHPE5316 | Optimization in Chemical Engineering | 3 | CHPE4414 |
| CHPE5416 | Applied Separation Processes | 3 | CHPE4612 |
| CHPE5516 | Special Topics in Chemical Engineering | 3 | CHPE4212 |
| CHPE5712 | Process Integration, Synthesis and Simulation | 3 | CHPE4612 |
| CHPE5812 | Heterogeneous Catalysis and Reactor Design | 3 | CHPE4512 |
| MEIE5288 | Innovation and Entrepreneurship | 3 | PNGE5103 |
| PNGE5106 | Machine Learning for Petroleum and Chemical Engineers | 3 | PNGE4101, ENGR2217 or COMP2002 |
| Total | | 15 | |



College : **ENGINEERING**
 Department : **CIVIL AND ARCHITECTURAL ENGINEERING**
 Cohorts : **2024**
 Degree : **B. ENG.**
 Major Specialization : **CIVIL ENGINEERING**



| Summary of Credits: | | |
|--|-----|------------|
| University Requirements (UR) | | 6 |
| General Foundation Program | NC* | |
| Arabic | 2 | |
| Contemporary Omani State and People | 2 | |
| Oman & Islamic Civilization or Islamic Culture | 2 | |
| University Electives (UE) | | 6 |
| See list A | | |
| College Requirements (CR) | | 32 |
| See list B | | |
| College Electives (CE) | | 3 |
| See list C | | |
| Departmental Requirements (DR) | | 41 |
| See list D | | |
| Departmental Electives (DE) | | 0 |
| See list E | | |
| Major Requirements (AR) | | 33 |
| See list F | | |
| Major Electives (AE) | | 15 |
| See list G | | |
| Minor Requirements (IR) | | 0 |
| See list H | | |
| Minor Electives (IE) | | 0 |
| See list I | | |
| Specialization Requirements (SR) | | 0 |
| See list J | | |
| Specialization Electives (SE) | | 0 |
| See list K | | |
| TOTAL | | 136 |

* Not Credited

For reference contact: HoD

Ext. 1332

HoD
 Dean's Office
 Admission and Registration



Date: 22/04/2024

Date: 02/06/2024

Date:

Last update on: 22/04/2024

Department of Civil and Architectural Engineering
Civil Engineering Degree Plan: 2024 Cohort (Scheme I)

| Scheme I FPI (Fall 2024) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--------------------------------|--------------|----------------------------|----------|----------|------|
| | | General Foundation Program | 0 | | UR |
| | Total | | 0 | | |

| Scheme I Semester 1 (Spring 2025) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---|----------------------|--|-----------|----------|------|
| | HIST1010 ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2 | | UR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | CHEM1071 | General Chemistry for Engineers | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total | | 14 | | |

| Scheme I Semester 2 (Fall 2025) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------------------------------|-----------------------|---|-----------|---------------------|------|
| | ARAB1060 ⁺ | Arabic | 2 | | UR |
| | | University Elective I | 2 | | UE |
| | SOCY1005 ⁺ | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Engineering | 3 | MATH 2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* (Co-req.) | CR |
| | Total | | 16 | | |

| Scheme I Semester 3 (Spring 2026) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---|--------------|----------------------------|-----------|-----------|------|
| | | College Elective | 3 | | CE |
| | PHYS2108 | Physics for Engineering II | 4 | PHYS 2107 | CR |
| | ERSC2020 | Geology for Engineers | 3 | | DR |
| | | University Elective II | 2 | | UE |
| | CIVL3011 | Statics | 3 | PHYS2107 | DR |
| | Total | | 15 | | |

⁺For non-Omani and non-Arabic speaking students, refer to Appendix A.

| Scheme I Semester 4 (Fall 2026) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---------------------------------------|--------------|--|-----------|--------------------|------|
| | MATH3171 | Linear Algebra & Multivariate Calculus | 3 | MATH2109 | CR |
| | CIVL3020 | Engineering Drawing | 3 | | AR |
| | CIVL3056 | Surveying | 3 | MATH2107 | DR |
| | CIVL3086 | Mechanics of Materials | 3 | CIVL3011 | DR |
| | CIVL3096 | Construction Materials | 3 | CIVL3011, CHEM1071 | DR |
| | Total | | 15 | | |

| Scheme I Jan. 2027 | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|-----------------------|--------------|------------------------------|----------|----------|------|
| | CIVL3007 | Practical Skills Development | 0 | CIVL3056 | AR |
| | Total | | 0 | | |

| Scheme I Semester 5 (Spring 2027) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---|--------------|--------------------------------------|-----------|----------------------|------|
| | MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| | CIVL3036 | Structures I | 3 | CIVL3086 | DR |
| | CIVL3076 | Transportation Engineering | 3 | | AR |
| | CIVL3106 | Geotechnical Engineering I | 3 | PETM3006 or ERSC2020 | AR |
| | CIVL4046 | Fluid Mechanics | 3 | CIVL3011 | DR |
| | Total | | 15 | | |

| Scheme I Semester 6 (Fall 2027) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---------------------------------------|--------------|-----------------------------|-----------|--|------|
| | CIVL4036 | Highway Engineering | 3 | CIVL3106, CIVL3076 | AR |
| | CIVL4136 | Environmental Engineering I | 3 | CIVL4046, CHEM1071 | AR |
| | CIVL4146 | Hydraulics | 3 | CIVL4046 | AR |
| | CIVL4206 | Concrete Design | 3 | CIVL3036, CIVL3096, (CIVL3020 or AREN3312) | DR |
| | CIVL5146 | Numerical Methods | 3 | ENGR2217/COMP2002), MATH3171 | DR |
| | Total | | 15 | | |

| Scheme I Semester 7 (Spring 2028) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---|--------------|------------------------------------|-----------|---------------------|------|
| | CIVL4006 | Prob. & Statistics for Engineers | 3 | MATH2107 | DR |
| | CIVL4400 | Professional Practice & Ethics | 2 | | DR |
| | | Department Elective I ^b | 3 | | AE |
| | CIVL3066 | Engineering Hydrology | 3 | CIVL4046 | AR |
| | CIVL4016 | Structures II | 3 | CIVL3036, MATH 4174 | AR |
| | CIVL5204 | Engineering Economics | 3 | MATH2107 | DR |
| | Total | | 17 | | |

| | | | | | |
|----------------------------|--------------------|---------------------|------------|-----------------|-------------|
| Scheme I Summer 2028 | Course Code | Course Title | Cr. | Pre-req. | Cat. |
| | ENGR4007 | Industrial Training | 0 | | CR |
| | Total | | 0 | | |

| | | | | | |
|---------------------------------------|--------------------|--|------------|---|-------------|
| Scheme I Semester 8 (Fall 2028) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
| | | Department Elective II ^b or | 3 | | AE |
| | CIVL5993 | Research Project I | | Department Approval | |
| | CIVL4216 | Steelwork Design | 3 | CIVL3036, (CIVL3020 or AREN3312), PHYS2108 | DR |
| | CIVL4226 | Foundation Engineering | 3 | CIVL3106, CIVL4206 | AR |
| | CIVL5010 | Modern Technologies in Civil Engineering | 1 | CIVL4206 | AR |
| | CIVL5336 | Construction Management | 3 | CIVL5204 | DR |
| | CIVL5991 | Design Project I | 2 | CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146) | AR |
| | Total | | 15 | | |

| Scheme I Semester 9 (Spring 2029) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---|-------------|--|-----|----------|------|
| | | University Elective III | 2 | | UE |
| | | Department Elective III ^b | 3 | | AE |
| | | Department Elective IV ^b | 3 | | AE |
| | | Department Elective V ^b or | 3 | | AE |
| | CIVL5994 | Research Project II | | CIVL5993 | |
| | CIVL5992 | Design Project II | 3 | CIVL5991 | AR |
| | Total | | 14 | | |
| Total (All Program) | | | 136 | | |

^b Departmental Electives: A student must choose five department elective courses.
The student who completes **CIVL5993** must also take **CIVL5994**.

Department of Civil and Architectural Engineering
Civil Engineering Degree Plan: 2024 Cohort (Scheme II)

| Scheme II FP1 (Fall 2024) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---------------------------------|--------------|----------------------------|----------|----------|------|
| | | General Foundation Program | 0 | | UR |
| | Total | | 0 | | |

| Scheme II FP2 (Spring 2025) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|-----------------------------------|--------------|----------------------------|----------|----------|------|
| | | General Foundation Program | 0 | | UR |
| | Total | | 0 | | |

| Scheme II Semester 1 (Fall 2025) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|----------------------------|--|-----------|----------|------|
| | HIST1010 or ISLM1010 | Oman & Islamic Civilization Islamic Culture | 2 | | UR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | CHEM1071 | General Chemistry for Engineers | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total | | 14 | | |

| Scheme II Semester 2 (Spring 2026) | Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|--|-----------------------|---|-----------|---------------------|------|
| | ARAB1060 ⁺ | Arabic | 2 | | UR |
| | | University Elective I | 2 | | UE |
| | LANC2161 | English for Engineering II | 3 | LANC 2160 | CR |
| | SOCY1005 ⁺ | Contemporary Omani State and People | 2 | | UR |
| | MATH2109 | Calculus II for Science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* (Co-req.) | CR |
| | Total | | 16 | | |

⁺For non-Omani and non-Arabic speaking students, refer to Appendix A.

| Scheme II Summer 2026 | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|-----------------------------|--------------|------------------|----------|----------|------|
| | | College Elective | 3 | | CE |
| | CIVL3011 | Statics | 3 | PHYS2107 | DR |
| | Total | | 6 | | |

| Scheme II Semester 3 (Fall 2026) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|--------------|----------------------------|-----------|----------|------|
| | ERSC2020 | Geology for Engineers | 3 | | DR |
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| | CIVL3020 | Engineering Drawing | 3 | | AR |
| | CIVL3056 | Surveying | 3 | MATH2107 | DR |
| | CIVL3086 | Mechanics of Materials | 3 | CIVL3011 | DR |
| | Total | | 16 | | |

| Scheme II January 2027 | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|------------------------------|--------------|------------------------------|----------|----------|------|
| | CIVL3007 | Practical Skills Development | 0 | CIVL3056 | AR |
| | Total | | 0 | | |

| Scheme II Semester 4 (Spring 2027) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|--------------|--|-----------|----------------------|------|
| | CIVL3076 | Transportation Engineering | 3 | | AR |
| | CIVL3096 | Construction Materials | 3 | CIVL3011, CHEM1071 | DR |
| | CIVL3106 | Geotechnical Engineering I | 3 | PETM3006 or ERSC2020 | AR |
| | CIVL4046 | Fluid Mechanics | 3 | CIVL3011 | DR |
| | MATH3171 | Linear Algebra & Multivariate Calculus | 3 | MATH2109 | CR |
| | Total | | 15 | | |

| Scheme II Summer 2027 | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|-----------------------------|--------------|----------------------------------|----------|----------|------|
| | CIVL4006 | Prob. & Statistics for Engineers | 3 | MATH2107 | DR |
| | CIVL5204 | Engineering Economics | 3 | MATH2107 | DR |
| | Total | | 6 | | |

| Scheme II Semester 5 (Fall 2027) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|--------------|--------------------------------------|-----------|--------------------|------|
| | | University Elective II | 2 | | UE |
| | MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| | CIVL3036 | Structures I | 3 | CIVL3086 | DR |
| | CIVL4036 | Highway Engineering | 3 | CIVL3106, CIVL3076 | AR |
| | CIVL4136 | Environmental Engineering I | 3 | CIVL4046, CHEM1071 | AR |
| | CIVL4146 | Hydraulics | 3 | CIVL4046 | AR |
| | Total | | 17 | | |

| Scheme II Semester 6 (Spring 2028) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|--------------|------------------------------------|-----------|--|------|
| | CIVL4400 | Professional Practice & Ethics | 2 | | DR |
| | | Department Elective I ^b | 3 | | AE |
| | CIVL3066 | Engineering Hydrology | 3 | CIVL4046 | AR |
| | CIVL4016 | Structures II | 3 | CIVL3036, MATH 4174 | AR |
| | CIVL4206 | Concrete Design | 3 | CIVL3036, CIVL3096, (CIVL3020 or AREN3312) | DR |
| | CIVL5146 | Numerical Methods | 3 | ENGR2217/COMP2002), MATH 3171 | DR |
| | Total | | 17 | | |

| Scheme II Summer 2028 | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|-----------------------------|--------------|---------------------|----------|----------|------|
| | ENGR4007 | Industrial Training | 0 | | |
| | Total | | 0 | | |

| Scheme II Semester 7 (Fall 2028) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|--------------|--|-----------|---|------|
| | | Department Elective II ^b or Research Project I | 3 | Department Approval | AE |
| | CIVL5993 | | | | |
| | CIVL4216 | Steelwork Design | 3 | CIVL3036, (CIVL3020 or AREN3312), PHYS 2108 | DR |
| | CIVL4226 | Foundation Engineering | 3 | CIVL3106, CIVL4206 | AR |
| | CIVL5010 | Modern Technologies in Civil Engineering | 1 | CIVL4206 | AR |
| | CIVL5336 | Construction Management | 3 | CIVL5204 | DR |
| | CIVL5991 | Design Project I | 2 | CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146) | AR |
| | Total | | 15 | | |

| | | | | | |
|--|-------------|---|-----|----------|------|
| Scheme II Semester 8 (Spring 2029) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
| | | University Elective III | 2 | | UE |
| | | Department Elective III ^b | 3 | | AE |
| | | Department Elective IV ^b | 3 | | AE |
| | | Department Elective V ^b or Research Project II | 3 | | AE |
| | CIVL5994 | | | CIVL5993 | |
| | CIVL5992 | Design Project II | 3 | CIVL5991 | AR |
| | Total | | 14 | | |
| Total (All Program) | | | 136 | | |

^b Departmental Electives: A student must choose five department elective courses.
The student who completed CIVL5993 must also take CIVL5994.

Department of Civil and Architectural Engineering

Civil Engineering Degree Plan: **2024 Cohort** (COOP Scheme)

- The cooperative Training (COOP) Scheme is **optional**.
- **Scheme I** Students can enroll in this scheme starting from Semester **8** after the foundation program.
- **Scheme II** students can enroll in this scheme starting from Semester **7** after the foundation program.
- For enrollment terms, conditions, and registration procedure, please consult the Head of Department and the Assistant Dean for Training and Community Services Offices.

| COOP Scheme COOP Semester | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|------------------------------|--------------|--------------------------------------|----------|---------------------|------|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | CIVL5001 | Civil Program Cooperative Training I | 0 | ENGR4007* (Co-req.) | AE |
| | Total | | 0 | | |

| COOP Scheme COOP Semester | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|------------------------------|--------------|---------------------------------------|----------|----------|------|
| | CIVL5002 | Civil Program Cooperative Training II | 6 | CIVL5001 | AE |
| | Total | | 6 | | |

| COOP Scheme COOP Semester (Fall) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|--------------|--|-----------|---|------|
| | | Department Elective II ^b or Research Project I | 3 | | AE |
| | CIVL5993 | Research Project I | | Department Approval | |
| | CIVL4226 | Foundation Engineering | 3 | CIVL3106, CIVL4206 | AR |
| | CIVL5010 | Modern Technologies in Civil Engineering | 1 | CIVL4206 | AR |
| | CIVL5336 | Construction Management | 3 | CIVL5204 | DR |
| | CIVL5991 | Design Project I | 2 | CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146) | AR |
| | Total | | 12 | | |

| COOP Scheme COOP Semester (Spring) | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|--|----------------------------|--|------------|--|------|
| | | University Elective III | 2 | | UE |
| | CIVL4216 | Steelwork Design | 3 | CIVL3036, (CIVL3020 or AREN3312), PHYS2108 | DR |
| | | Department Elective III ^b or Research Project II | 3 | | AE |
| | CIVL5994 | Research Project II | | CIVL5993 | |
| | CIVL5992 | Design Project II | 3 | CIVL5991 | AR |
| | Total | | 11 | | |
| | Total (All Program) | | 136 | | |

^b Departmental Electives: A student must choose three department elective courses.
The student who completed CIVL5993 must also take CIVL5994.

Appendix A

| No. | Cohorts 2018 and before | Credits | Cohorts 2018 and after | Cr. | Notes |
|-----|-------------------------|---------|------------------------|-----|---|
| 1 | ARAB1001 | 3 | ARAB1060 | 2 | |
| 2 | SOCY1001 | 1 | SOCY1005 | 2 | For Omanis Only |
| 3 | -- | -- | SOCY1007 | 2 | For Non-Omanis |
| 4 | ARAB1019 | | | 3 | For Non-Arabic Speaking Students. Offered only in Fall semesters |

Notes:

- For the courses (SOCY1005, SOCY1007, HIST1010), the course materials and exams are in English for non-Arabic speaking students.
- Currently, there is no Arabic course with 2 credits for the non-Arabic speaking students of cohorts 2018 and after. Those students have to register the ARAB1019 as shown in the table above.

Department of Civil and Architectural Engineering

Civil Engineering Degree Plan: **2024 Cohort**

LIST A* – University Electives

***List of University Elective Courses Allowed for ENG students (Check the QR code)**



LIST B: College Requirements (CR)

| Code | Title | Credits | Pre-Requisite |
|--------------|---|-----------|---------------------|
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering I | 3 | LANC2160 |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II for Science and Engineering | 3 | MATH 2107 |
| MATH3171 | Linear Algebra & Multivariate Calculus | 3 | MATH2109 |
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* (Co-req.) |
| PHYS2108 | Physics for Engineering II | 4 | PHYS 2107 |
| CHEM1071 | General Chemistry for Engineers | 3 | |
| ENGR4007 | Industrial Training | 0 | |
| Total | | 32 | |

LIST C: College Electives (CE)

One Course- 3 credit hours: The elective course will be offered from the following courses subject to availability.

| Code | Title | Credits | Pre-Requisite |
|-----------|---|---------|---------------|
| COMP 2002 | Introduction to Comp. Programming for Engineers | 3 | |
| ENGR2217 | Computer Programming | 3 | |

LIST D: Department Requirements (DR)

| Code | Title | Credits | Pre-Requisite |
|--------------|----------------------------------|-----------|---|
| CIVL3011 | Statics | 3 | PHYS2107 |
| CIVL3056 | Surveying | 3 | MATH2107 |
| CIVL3086 | Mechanics of Materials | 3 | CIVL3011 |
| CIVL3096 | Construction Materials | 3 | CIVL3011, CHEM1071 |
| ERSC2020 | Geology for Engineers | 3 | |
| CIVL3036 | Structures I | 3 | CIVL3086 |
| CIVL4006 | Prob. & Statistics for Engineers | 3 | MATH2107 |
| CIVL4046 | Fluid Mechanics | 3 | CIVL3011 |
| CIVL4206 | Concrete Design | 3 | CIVL3036, CIVL3096, (CIVL3020 or AREN3312) |
| CIVL4400 | Professional Practice & Ethics | 2 | |
| CIVL5146 | Numerical Methods | 3 | (ENGR2217/COMP2002), MATH 3171 |
| CIVL5204 | Engineering Economics | 3 | MATH2107 |
| CIVL4216 | Steelwork Design | 3 | CIVL3036, (CIVL3020 or AREN3312), PHYS2108 |
| CIVL5336 | Construction Management | 3 | CIVL5204 |
| Total | | 41 | |

LIST F: Major Requirements (AR)

| Code | Title | Credits | Pre-Requisite |
|--------------|--|-----------|--|
| CIVL3007 | Practical Skills Development | 0 | CIVL3056 |
| CIVL3020 | Engineering Drawing | 3 | |
| CIVL3106 | Geotechnical Engineering I | 3 | PETM3006 or ERSC2020 |
| CIVL4036 | Highway Engineering | 3 | CIVL3106, CIVL3076 |
| CIVL3076 | Transportation Engineering | 3 | |
| CIVL4136 | Environmental Engineering I | 3 | CIVL4046, CHEM1071 |
| CIVL4146 | Hydraulics | 3 | CIVL4046 |
| CIVL3066 | Engineering Hydrology | 3 | CIVL4046 |
| CIVL4016 | Structures II | 3 | CIVL3036, MATH4174 |
| CIVL4226 | Foundation Engineering | 3 | CIVL3106, CIVL4206 |
| CIVL5010 | Modern Technologies in Civil Engineering | 1 | CIVL4206 |
| CIVL5991 | Design Project I | 2 | CIVL4206 and (CIVL4036, CIVL4136 or CIVL4146) |
| CIVL5992 | Design Project II | 3 | CIVL5991 |
| Total | | 33 | |

LIST G: Major Electives (AE)

Technical Elective Courses – 15 credit hours

The student should select 5 courses (15 credit hours) or 3 courses (9 credit hours) and Research Project I and Research Project II. The electives can be taken from: (1) Civil Engineering optional technical electives; or (2) one course (max. 3 credits) offered in the M.Sc. Program in Civil Engineering after approval of advisor.

Civil Engineering: General

| Code | Title | Credits | Pre-Requisite |
|----------|-------------------------------------|---------|---------------------|
| CIVL5104 | Special Topics in Civil Engineering | 3 | Department Approval |
| CIVL5150 | Remote Sensing | 3 | |
| CIVL5376 | Conservation of Structures | 3 | |
| CIVL5993 | Research Project I | 3 | Department Approval |
| CIVL5994 | Research Project II | 3 | CIVL5993 |

Civil Engineering: Water Resources

| Code | Title | Credits | Pre-Requisite |
|----------|------------------------------------|---------|---------------|
| CIVL5076 | Coastal Engineering | 3 | CIVL4046 |
| CIVL5142 | Groundwater | 3 | CIVL3066 |
| CIVL5246 | Hydraulic Structures | 3 | CIVL4046 |
| CIVL5346 | Water Resources Engineering | 3 | CIVL3066 |
| CIVL5160 | GIS in Water Resources Engineering | 3 | CIVL3066 |

Civil Engineering: Geotechnical

| Code | Title | Credits | Pre-Requisite |
|----------|-----------------------------|---------|---------------|
| CIVL4106 | Geotechnical Engineering II | 3 | CIVL3106 |
| CIVL5106 | Slope Stability | 3 | CIVL3106 |
| CIVL5132 | Environmental Geotechnics | 3 | CIVL3106 |
| CIVL5133 | Soil Improvement | 3 | CIVL3106 |

Civil Engineering: Transportation

| Code | Title | Credits | Pre-Requisite |
|----------|---------------------------------|---------|---------------|
| CIVL5122 | Highway Materials | 3 | CIVL4036 |
| CIVL5206 | Traffic Engineering | 3 | CIVL3076 |
| CIVL5216 | Pavement Design and Maintenance | 3 | CIVL4036 |
| CIVL5226 | Airport Design | 3 | CIVL4036 |

Civil Engineering: Structures

| Code | Title | Credits | Pre-Requisite |
|----------|---|---------|------------------------------|
| CIVL5096 | Concrete Structures | 3 | CIVL4016, CIVL4206 |
| CIVL5126 | Concrete Materials and Technology | 3 | CIVL3036, CIVL3086, CIVL3096 |
| CIVL5214 | Computer Applications in Structural Engineering | 3 | CIVL4016, CIVL4206 |
| CIVL5236 | Prestressed Concrete | 3 | CIVL4206 |
| CIVL5296 | Design of Masonry Structures | 3 | CIVL3086 |
| CIVL5270 | Fire Safety in Buildings | 3 | CIVL4216 |
| CIVL5462 | Concrete Technology | 3 | CIVL3096 |
| CIVL5662 | Building Materials | 3 | CIVL3086, CIVL3096 |
| CIVL5664 | Contemporary Materials in Civil Engineering | 3 | CIVL3096 |

Civil Engineering: Construction

| Code | Title | Credits | Pre-Requisite |
|----------|---|---------|--------------------|
| CIVL5102 | Construction Engineering | 3 | |
| CIVL5156 | Estimating Construction Cost | 3 | CIVL3020, CIVL4206 |
| CIVL5306 | Specifications and Contracts | 3 | CIVL4206 |
| CIVL5678 | Administration of Contracts | 3 | CIVL4206 |
| CIVL5680 | Construction Planning & Scheduling (Computer application) | 3 | CIVL4206, CIVL5336 |

Civil Engineering: Environmental

| Code | Title | Credits | Pre-Requisite |
|----------|--|---------|---------------|
| CIVL5151 | Solid Waste Management | 3 | CIVL4136 |
| CIVL5152 | Microbiology for Engineers | 3 | CIVL4136 |
| CIVL5153 | Chemistry for Environmental Engineering | 3 | CIVL4136 |
| CIVL5186 | Water and Wastewater Management | 3 | CIVL4136 |
| CIVL5254 | Environmental Pollution | 3 | CIVL4136 |
| CIVL5255 | Environmental Management Systems | 3 | CIVL4136 |
| CIVL5326 | Environmental Engineering II | 3 | CIVL4136 |
| CIVL5154 | Membrane Technology for water and wastewater | 3 | CIVL4136 |

Civil Engineering: Geomatics

| Code | Title | Credits | Pre-Requisite |
|----------|--|---------|---------------|
| CIVL5111 | Global Positioning Systems and Its Applications in Civil Engineering | 3 | CIVL3056 |
| CIVL5311 | Adjustment Computations | 3 | CIVL3056 |
| CIVL5600 | Introduction to Photogrammetry | 3 | CIVL3056 |



Degree and Study Plan



College: Engineering
Department: Electrical and Computer Engineering
Cohort: 2024
Degree: Bachelor of Engineering (B. Eng.)
Major: Electrical and Computer Engineering (ECE)
Specializations:

1. Telecommunications and Wireless Systems (TWS)
2. Embedded Computing and Networks (ECN)
3. Power Systems and Energy (PSE)
4. Electronic Instrumentation and Control (EIC)

Summary of Credits

| Category | | Courses | Total Credit Hours |
|-----------------------------|------|---|--|
| University Requirements | (UR) | -General Foundation Program | 0 |
| | | -Arabic | 2 |
| | | -Contemporary Omani State and People | 2 |
| | | -Oman & Islamic Civilization or Islamic Culture | 2 |
| University Elective | (UE) | List (A) | 6 |
| College Requirements | (CR) | List (B) | 32 |
| College Electives | (CE) | List (C) | 3 |
| Departmental Requirements | (DR) | List (D) | 50 |
| Departmental Electives | (DE) | List (E) ¹ | 0 |
| Major Requirements | (AR) | List (F) ¹ | 0 |
| Major Electives | (AE) | List (G) ¹ | 0 |
| Specialization Requirements | (SR) | List (H) | 30 |
| Specialization Electives | (SE) | List (I) | 9 (3-courses) or 3 (1-course) + 6 (of Co-Op) |
| Minor Requirement | (IR) | List (J) ¹ | 0 |
| Minor Elective | (IE) | List (K) ¹ | 0 |
| Total Credits | | | 136 |

Important Information:

Co-Operative Training (Co-Op) pathway (introduced in April 2020) is optional. It is designed for students who are following a one-year Co-Op program after finishing semester 8 (College regulations apply).

For reference please contact: Dr. Ahmed Al Maashri (HoD) Ext: 1330/1390/1363

HoD: Date: 2nd May 2024

for Dean:

Date: 03/05/2024

¹ Not attached as no courses for ECE department

Department of Electrical and Computer Engineering

Degree and Study Plan: 2024 Cohort

| | Course Code | Course Title | Cr. | Pre-Requisites | Cat. |
|---------------------------|-----------------------|--|-----------|--|------|
| Sem-1 Fall 2024 | - | General Foundation Program | - | - | UR |
| | Total Credits | | - | | |
| | | | | | |
| Semester-2 Spring 2025 | HIST1010 or ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2 | | UR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total Credits | | 14 | | |
| Semester-3 Fall 2025 | ARAB1060** | Arabic | 2 | | UR |
| | | University Elective | 2 | | UE |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 OR LANC2162 OR LANC2035 OR LANC2140 OR LANC2058 OR LANC2033) | CR |
| | MATH2109 | Calculus II for science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107(co-requisite) | CR |
| | Total Credits | | 16 | | |
| Semester-4 Spring 2026 | ECCE2017 | Electrical Circuit Analysis | 4 | MATH2107 | DR |
| | ECCE3206 | Digital Logic Design | 3 | | DR |
| | MATH3171 | Linear Algebra & Multivariate Calculus for Engineers | 3 | MATH2108 OR MATH2109 | CR |
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 OR PHYS2101 | CR |
| | Total Credits | | 14 | | |
| Semester-5 Fall 2026 | ENGR2217 ² | Introduction to Computer Programming for Engineers | 3 | | CE |
| | ECCE3153 | Electronic Devices and Circuits | 3 | ECCE2017 | DR |
| | ECCE4023 | Engineering Electromagnetics | 3 | PHYS2108 AND MATH 3171 | DR |
| | MATH4151 | Disc. Math and Complex Analysis | 3 | MATH3171 | DR |
| | MATH4174 | Differential Equations for Engineers | 3 | (LANC2161 AND MATH2108) OR (LANC2161 AND MATH2109) | CR |
| | Total Credits | | 15 | | |
| Semester-6 Spring 2027 | ECCE3142 | Signals & Systems | 3 | ECCE2017 | DR |
| | ECCE3352 | Electrical Technology | 3 | ECCE2017 | DR |
| | MATH4176 | Numerical Analysis for Engineers | 3 | MATH3171 AND MATH4174 AND (COMP2002 OR ENGR2217) | DR |
| | ECCE4227 | Embedded Systems | 3 | (COMP2002 OR ENGR2217) AND ECCE3206 AND (ECCE3153 OR MCTE3110 OR MCTE3310) | DR |
| | STAT2103 | Probability for Engineers | 3 | MATH2107 | DR |
| | Total Credits | | 15 | | |

² ENGR 2217-Programming for Engineers

** Please refer to the end of the document

Degree and Study Plan: 2024 Cohort

Telecommunications and Wireless Systems Specialization (TWS)

| | Course Code | Course Title | Cr. | Pre-Requisites | Cat. |
|----------------------------|-----------------------|--|-----------|--|------|
| Semester-7 Fall 2027 | ECCE3038 | Elect. Measurements & Instr. | 2 | ECCE2017 AND ECCE3153 | DR |
| | ECCE4122 | Principles of Analog & Digital Communication | 3 | ECCE3142 | DR |
| | ECCE4242 | Introduction to Computer Networks | 3 | ECCE4227 OR COMP3518 OR COMP3501 [Incompatible with ECCE5231] | SR |
| | ECCE4153 | Modern Digital Electronics | 3 | ECCE3153 | SR |
| | ECCE4142 | Digital Signal Processing | 3 | ECCE3142 | SR |
| | ECCE4010 | Engineering Design and Professional Ethics | 2 | ECCE3142 AND ECCE3352 AND ECCE3153 AND ECCE3206 | DR |
| | Total Credits | | 16 | | |
| Jan 28 | ECCE3006 | Skills Training | - | ECCE3153 OR MCTE3110 | DR |
| | Total Credits | | 0 | | |
| Semester-8 Spring 2028 | ECCE4082 | Professional Skills | 1 | LANC2161 | DR |
| | ECCE4127 | Advanced Digital Communication | 3 | ECCE4122 | SR |
| | ECCE4416 | Linear Control Systems | 3 | ECCE3142 | DR |
| | ECCE5113 | Antenna Theory and Radiowave Propagation | 3 | ECCE4023 | SR |
| | ECCE5010 | Engineering Economics and Project Management | 3 | STAT2103 | DR |
| | | University Elective | 2 | | UE |
| | Total Credits | | 15 | | |
| Summer 2028 | ENGR4007 | Industrial Training | - | ECCE3006 | CR |
| | Total Credits | | 0 | | |
| Semester-9 Fall 2028 | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ³ | DR |
| | ECCE5123 | Optical Communications | 3 | ECCE4122 | SR |
| | ECCE5124 | Wireless Communications | 3 | ECCE4122 | SR |
| | ECCE5xxx ⁴ | Specialization Elective | 3 | Offered course-specific | SE |
| | ECCE5114 | Telecom Systems Security | 3 | ECCE4122 | SR |
| | ECCE5xxx ⁴ | Specialization Elective | 3 | Offered course-specific | SE |
| | Total Credits | | 17 | | |
| Semester-10 Spring 2029 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | ECCE5143 | Advanced Digital Signal Proc. | 3 | ECCE4142 | SR |
| | ECCE5130 | Modern Communication Systems Design | 3 | ECCE4153 | SR |
| | ECCE5xxx ⁴ | Specialization Elective | 3 | Offered course-specific | SE |
| | | University Elective | 2 | | UE |
| | Total Credits | | 14 | | |

³ Internal regulation [enforced by the ECE Department]. ECCE5009 will be available only in each Fall semester.

⁴ Or ECCE4xxx, A Level 4 course

Degree and Study Plan: 2024 Cohort

Embedded Computing and Networks Specialization (ECN)

| | Course Code | Course Title | Cr. | Pre-Requisites | Cat. |
|----------------------------|-----------------------|---|-----|---|------|
| Semester-7 Fall 2027 | ECCE3038 | Elect. Measurements & Instr. | 2 | ECCE2017 AND ECCE3153 | DR |
| | ECCE4122 | Principles of Analog & Digital Communication | 3 | ECCE3142 | DR |
| | ECCE4216 | Machine Learning for Engineers | 3 | (ENGR2217 OR COMP2002) AND (ECCE3352 OR MCCE3210) | SR |
| | ECCE4416 | Linear Control Systems | 3 | ECCE3142 | DR |
| | | University Elective | 2 | | UE |
| | | University Elective | 2 | | UE |
| | Total Credits | | 15 | | |
| Jan 28 | ECCE3006 | Skills Training | - | ECCE3153 OR MCCE3110 | DR |
| | Total Credits | | 0 | | |
| Semester-8 Spring 2028 | ECCE4010 | Engineering Design and Professional Ethics | 2 | ECCE3142 AND ECCE3352 AND ECCE3153 AND ECCE3206 | DR |
| | ECCE4082 | Professional Skills | 1 | LANC2161 | DR |
| | ECCE4242 | Introduction to Computer Networks | 3 | ECCE4227 OR COMP3518 OR COMP3501 [Incompatible with ECCE5231] | SR |
| | ECCE4257 | Applied Algorithms for ECE | 3 | COMP2002 OR ENGR2217 | SR |
| | ECCE4254 | Operating Systems | 3 | COMP2002 OR ENGR2217 | SR |
| | ECCE5217 | Reconfigurable Computing | 3 | ECCE4227 | SR |
| | Total Credits | | 15 | | |
| Summer 2028 | ENGR4007 | Industrial Training | - | ECCE3006 | CR |
| | Total Credits | | 0 | | |
| Semester-9 Fall 2028 | ECCE5232 | Computer Architecture and Organization | 3 | ECCE4227 | SR |
| | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ⁵ | DR |
| | ECCE5218 | Routing and switching | 3 | ECCE4242 | SR |
| | ECCE5293 | Embedded Vision Systems | 3 | ECCE4227 | SR |
| | ECCE5xxx ⁶ | Specialization Elective | 3 | Offered course-specific | SE |
| | ECCE5010 | Engineering Economics and Project Management | 3 | STAT2103 | DR |
| | Total Credits | | 17 | | |
| Semester-10 Spring 2029 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | ECCE5229 | Embedded Real Time Systems | 3 | ECCE4227 | SR |
| | ECCE5219 | Intelligent Applications in Robotics and Drones | 3 | ECCE4227 | SR |
| | ECCE5xxx ⁶ | Specialization Elective | 3 | Offered course specific | SE |
| | ECCE5xxx ⁶ | Specialization Elective | 3 | Offered course-specific | SE |
| | Total Credits | | 15 | | |

⁵ Internal regulation [enforced by the ECE Department]. ECCE5009 will be available only in each Fall semester.

⁶ Or ECCE4xxx, A Level 4 course

Degree and Study Plan: 2024 Cohort

Power Systems and Energy Specialization (PSE)

| | Course Code | Course Title | Cr. | Pre-Requisites | Cat. |
|----------------------------|-----------------------|--|-----|---|------|
| Semester-7 Fall 2027 | ECCE3038 | Elect. Measurements & Instr. | 2 | ECCE2017 AND ECCE3153 | DR |
| | ECCE4122 | Principles of Analog & Digital Communication | 3 | ECCE3142 | DR |
| | ECCE4312 | Power System Analysis I | 3 | ECCE3352 | SR |
| | ECCE4358 | Electrical Machines | 3 | ECCE3352 | SR |
| | ECCE4010 | Engineering Design and Professional Ethics | 2 | ECCE3142 AND ECCE3352 AND ECCE3153 AND ECCE3206 | DR |
| | | University Elective | 2 | | UE |
| | Total Credits | | 15 | | |
| Jan 28 | ECCE3006 | Skills Training | - | ECCE3153 OR MCTE3110 | DR |
| | Total Credits | | 0 | | |
| Semester-8 Spring 2028 | ECCE4082 | Professional Skills | 1 | LANC2161 | DR |
| | ECCE4361 | Renewable Electricity generation | 3 | ECCE3352 | SR |
| | ECCE4316 | Power System Analysis II | 3 | ECCE4312 | SR |
| | ECCE4416 | Linear Control Systems | 3 | ECCE3142 | DR |
| | ECCE5010 | Engineering Economics and Project Management | 3 | STAT2103 | DR |
| | ECCE4467 | Power Electronics & Drives | 3 | (ECCE3153 OR MCTE3110 OR MCTE3310) AND (ECCE3352 OR MCTE3210) | SR |
| | Total Credits | | 16 | | |
| Summer 2028 | ENGR4007 | Industrial Training | - | ECCE3006 | CR |
| | Total Credits | | 0 | | |
| Semester-9 Fall 2028 | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ⁷ | DR |
| | ECCE5302 | Power Systems Protection | 3 | ECCE4316 | SR |
| | ECCE5332 | High Voltage Engineering | 3 | ECCE4312 | SR |
| | ECCE5303 | Power Distribution System Eng. | 3 | ECCE4312 | SR |
| | ECCE5xxx ⁸ | Specialization Elective | 3 | Offered course specific | SE |
| | | University Elective | 2 | | UE |
| | Total Credits | | 16 | | |
| Semester-10 Spring 2029 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | ECCE5322 | Electrical Power Systems Quality | 3 | ECCE4312 | SR |
| | ECCE5315 | Smart Grid | 3 | ECCE4312 | SR |
| | ECCE5xxx ⁸ | Specialization Elective | 3 | Offered course specific | SE |
| | ECCE5xxx ⁸ | Specialization Elective | 3 | Offered course specific | SE |
| | Total Credits | | 15 | | |

⁷ Internal regulation [enforced by the ECE Department]. ECCE5009 will be available only in each Fall semester.

⁸ Or ECCE4xxx, A Level 4 course

Degree and Study Plan: 2024 Cohort

Electronic Instrumentation and Control Specialization (EIC)

| | Course Code | Course Title | Cr. | Pre-Requisites | Cat. |
|----------------------------|------------------------|--|-----|--|------|
| Semester-7 Fall 2027 | ECCE3038 | Elect. Measurements & Instr. | 2 | ECCE2017 AND ECCE3153 | DR |
| | ECCE4122 | Principles of Analog & Digital Communication | 3 | ECCE3142 | DR |
| | ECCE4153 | Modern Digital Electronics | 3 | ECCE3153 | SR |
| | ECCE4416 | Linear Control Systems | 3 | ECCE3142 | DR |
| | ECCE4467 | Power Electronics & Drives | 3 | (ECCE3153 OR MCTE3110 OR MCTE3310) AND (ECCE3352 OR MCTE3210) | SR |
| | | University Elective | 2 | | UE |
| | Total Credits | | 16 | | |
| Jan 28 | ECCE3006 | Skills Training | - | ECCE3153 OR MCTE3110 | DR |
| | Total Credits | | 0 | | |
| Semester-8 Spring 2028 | ECCE4082 | Professional Skills | 1 | LANC2161 | DR |
| | ECCE4455 | Sensors and Actuators | 3 | ECCE3038 | SR |
| | ECCE4436 | Industrial Control Systems Design | 3 | ECCE4416 | SR |
| | ECCE4010 | Engineering Design and Professional Ethics | 2 | ECCE3142 AND ECCE3352 AND ECCE3153 AND ECCE3206 | DR |
| | ECCE4142 | Digital Signal Processing | 3 | ECCE3142 | SR |
| | ECCE4216 | Machine Learning for Engineers | 3 | (ENGR2217 OR COMP2002) AND (ECCE3352 OR MCTE3210) | SR |
| | Total Credits | | 15 | | |
| Summer 2028 | ENGR4007 | Industrial Training | - | ECCE3006 | CR |
| | Total Credits | | 0 | | |
| Semester-9 Fall 2028 | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ⁹ | DR |
| | ECCE5452 | Computer-Aided Instrumentation | 3 | (ECCE4456 OR ECCE4455) AND ECCE4227 | SR |
| | ECCE5411 | Introduction to Industrial Network Practices | 3 | ECCE4436 | SR |
| | ECCE5xxx ¹⁰ | Specialization Elective | 3 | Offered course-specific | SE |
| | ECCE5xxx ¹⁰ | Specialization Elective | 3 | Offered course-specific | SE |
| | ECCE5010 | Engineering Economics and Project Management | 3 | STAT2103 | DR |
| | Total Credits | | 17 | | |
| Semester-10 Spring 2029 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | | University Elective | 2 | | UE |
| | ECCE5410 | Intelligent Control Systems | 3 | ECCE4416 | SR |
| | ECCE5445 | Control System Design | 3 | ECCE4416 OR MCTE4250 | SR |
| | ECCE5xxx ¹⁰ | Specialization Elective | 3 | Offered course-specific | SE |
| | Total Credits | | 14 | | |

⁹ Internal regulation [enforced by the ECE Department]. ECCE5009 will be available only in each Fall semester.

¹⁰ Or ECCE4xxx, A Level 4 course

The Co-Operative Training (Co-Op) pathway is **optional**. Students can enroll in this after finishing semester-8. Late students would have to adjust as per course(s) offering. For enrollment terms, conditions, please consult the Head of Department and the Assistant Dean for Training and Community Services Offices

| Co-Operative Pathway | | | | | |
|--|----------------------|--------------------------|------------|-------------------------------------|-------------|
| Co-Op Co-Op Sem-1 Fall-2028 | Course Code | Course Title | Cr. | Pre-Requisites/Co-Requisite* | Cat. |
| | ENGR4007 | Industrial Training | - | ECCE3006 | CR |
| | ECCE5501 | Co-Operative Training, I | 0 | ENGR4007 *(co-requisite) | AE |
| | Total Credits | | 0 | | |
| Co-Op Co-Op Sem-2 SP-2029 | Course Code | Course Title | Cr. | Pre-Requisites/Co-Requisite* | Cat. |
| | ECCE5502 | Co-Operative Training II | 6 | ECCE5501 | AE |
| | Total Credits | | 6 | | |

Telecommunications and Wireless Systems Specialization (TWS)

| | | | | | |
|-----------------------------------|------------------------|-------------------------------------|-----------|-------------------------------|----|
| Semester-9 Fall 2029 | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ¹¹ | DR |
| | ECCE5123 | Optical Communications | 3 | ECCE4122 | SR |
| | ECCE5124 | Wireless Communications | 3 | ECCE4122 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course-specific | SE |
| | ECCE5114 | Telecom Systems Security | 3 | ECCE4122 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course-specific | SE |
| | Total Credits | | 17 | | |
| Semester-10 Spring 2030 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | ECCE5143 | Advanced Digital Signal Processing | 3 | ECCE4142 | SR |
| | ECCE5130 | Modern Communication Systems Design | 3 | ECCE4153 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course-specific | SE |
| | | University Elective | 2 | | UE |
| | Total Credits | | 14 | | |

Embedded Computing and Networks Specialization (ECN)

| | | | | | |
|-----------------------------------|------------------------|--|-----------|-------------------------------|----|
| Semester-9 Fall 2029 | ECCE5232 | Computer Architecture and Organization | 3 | ECCE4227 | SR |
| | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ¹¹ | DR |
| | ECCE5218 | Routing and switching | 3 | ECCE4242 | SR |
| | ECCE5293 | Embedded Vision Systems | 3 | ECCE4227 | |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course-specific | SE |
| | ECCE5010 | Engineering Economics and Project Management | 3 | STAT2103 | DR |
| | Total Credits | | 17 | | |
| Semester-10 Spring 2030 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | ECCE5229 | Embedded Real Time Systems | 3 | ECCE4227 | SR |
| | ECCE5219 | Intelligent App. in Robotics and Drones | 3 | ECCE4227 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course-specific | SE |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course-specific | SE |
| | Total Credits | | 15 | | |

¹¹ Internal regulation [enforced by the ECE Department]. ECCE5009 will be available only in each Fall semester.

¹² Or ECCE4xxx, A Level 4 course

Power Systems and Energy Specialization (PSE)

| | | | | | |
|----------------------------|------------------------|---------------------------------|-----------|-------------------------------|----|
| Semester-9 Fall 2029 | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ¹¹ | DR |
| | ECCE5302 | Power Systems Protection | 3 | ECCE4316 | SR |
| | ECCE5332 | High Voltage Engineering | 3 | ECCE4312 | SR |
| | ECCE5303 | Power Distribution System Eng. | 3 | ECCE4312 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course specific | SE |
| | | University Elective | 2 | | UE |
| | Total Credits | | 16 | | |
| Semester-10 Spring 2030 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | ECCE5322 | Electrical Power System Quality | 3 | ECCE4312 | SR |
| | ECCE5315 | Smart Grid | 3 | ECCE4312 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course specific | SE |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course specific | SE |
| | Total Credits | | 15 | | |

Electronic Instrumentation and Control Specialization (EIC)

| | | | | | |
|----------------------------|------------------------|--|-----------|-------------------------------------|----|
| Semester-9 Fall 2029 | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ¹¹ | DR |
| | ECCE5452 | Computer-Aided Instrumentation | 3 | (ECCE4456 OR ECCE4455) AND ECCE4227 | SR |
| | ECCE5411 | Introduction to Industrial Network Practices | 3 | ECCE4436 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course specific | SE |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course specific | SE |
| | ECCE5010 | Engineering Economics and Project Management | 3 | STAT2103 | DR |
| | Total Credits | | 17 | | |
| Semester-10 Spring 2030 | ECCE5099 | Project (Part II) | 3 | ECCE5009 | DR |
| | | University Elective | 2 | | UE |
| | ECCE5410 | Intelligent Control Systems | 3 | ECCE4416 | SR |
| | ECCE5445 | Control System Design | 3 | ECCE4416 OR MCTE4250 | SR |
| | ECCE5xxx ¹² | Specialization Elective | 3 | Offered course specific | SE |
| | Total Credits | | 14 | | |

UNIVERSITY REQUIREMENTS for Non-Arabic or Non-Omani Students

| No. | Cohorts 2017 and before | Credits | Cohorts 2018 and after | Credits | Notes |
|-----|-------------------------|---------|------------------------|---------|--|
| 1 | ARAB1001 | 3 | ARAB1060 | 2 | |
| 2 | SOCY1001 | 1 | SOCY1005 | 2 | For Omanis Only |
| 3 | -- | -- | SOCY1007 | 2 | For Non Omanis |
| 4 | ARAB1019 | | | 3 | For non-Arabic Speaking Students. Offered only in Fall semesters |

Notes:

- For the courses (SOCY1005, SOCY1007, HIST1010), the course materials and exams are in English for non-Arabic speaking students.
- Currently, there is no Arabic course with 2 credits for the non-Arabic speaking students of cohorts 2018 and after. Those students have to register the ARAB1019 as shown in the table above.

List A: UNIVERSITY ELECTIVES (UE) – 6 Credits

- List of University Elective courses that are **ALLOWED** to register. Please scan the QR code, in front.



List B: COLLEGE REQUIREMENTS (CR) – 32 Credits

| No. | Course Code | Course Title | Credits | Pre-Requisites |
|-----|-------------|---|---------|---|
| 1 | LANC2160 | English for Engineering I | 3 | |
| 2 | LANC2161 | English for Engineering II | 3 | LANC2160 OR LANC2162 OR LANC2035 OR LANC2140 OR LANC2058 OR LANC2033) |
| 3 | ENGR1501 | Introduction to Engineering | 1 | |
| 4 | ENGR1600 | Workshop I | 1 | |
| 5 | MATH2107 | Calculus I | 4 | |
| 6 | MATH2109 | Calculus II for science and Engineering | 3 | MATH 2107 |
| 7 | MATH3171 | Linear Algebra & Multivariate Calculus | 3 | MATH2108 OR MATH2109 |
| 8 | MATH4174 | Differential Equations for Engineers | 3 | (LANC2161 AND MATH2108) OR (LANC2161 AND MATH2109) |
| 9 | PHYS2107 | Physics for Engineering I | 4 | MATH2107(co-requisite) |
| 10 | PHYS2108 | Physics of Engineering II | 4 | PHYS2107 OR PHYS2101 |
| 11 | CHEM1071 | General Chemistry for Engineering | 3 | |
| 12 | ENGR4007 | Industrial Training | 0 | ECCE3006 |

List C: COLLEGE ELECTIVES (CE) – 3 Credits

| No. | Course Code | Course Title | Credits | |
|-----|-------------|---------------------------------------|---------|--|
| 1 | COMP2002 | Intr. to Computer Prog. for Engineers | 3 | |
| 2 | ENGR2217 | Programming for Engineers | 3 | |

List D: DEPARTMENTAL REQUIREMENT (DR) – 50 Credits

| No. | Course Code | Course Title | College | Pre-Requisite |
|-----|-------------|--|---------|--|
| 1. | ECCE2017 | Electrical Circuit Analysis | 4 | MATH2107 |
| 2. | ECCE3038 | Electrical Measurements & Instrumentation | 2 | ECCE2017 AND ECCE3153 |
| 3. | ECCE3142 | Signals & Systems | 3 | ECCE2017 |
| 4. | ECCE3153 | Electronic Devices and Circuits | 3 | ECCE2017 |
| 5. | ECCE3206 | Digital Logic Design | 3 | |
| 6. | ECCE3352 | Electrical Technology | 3 | ECCE2017 |
| 7. | ECCE4010 | Eng. Design and Professional Ethics | 2 | ECCE3142 AND ECCE3352 AND ECCE3153 AND ECCE3206 |
| 8. | ECCE4082 | Professional Skills | 1 | LANC2161 |
| 9. | ECCE4023 | Engineering Electromagnetics | 3 | PHYS2108 AND MATH 3171 |
| 10. | ECCE4122 | Principles of Analog & Digital Comm | 3 | ECCE3142 |
| 11. | ECCE4227 | Embedded Systems | 3 | (COMP2002 OR ENGR2217) AND ECCE3206 AND (ECCE3153 OR MCTE3110 OR MCTE3310) |
| 12. | ECCE4416 | Linear Control Systems | 3 | ECCE3142 |
| 13. | ECCE5010 | Engineering Economics and Project Management | 3 | STAT2103 |
| 14. | ECCE5009 | Project (Part I) | 2 | ECCE4010 AND PR ¹ |
| 15. | ECCE5099 | Project (Part II) | 3 | ECCE5009 |
| 16. | MATH4151 | Discrete Math & Complex Analysis | 3 | MATH3171 |
| 17. | MATH4176 | Numerical Analysis for Engineers | 3 | MATH3171 AND MATH4174 AND (COMP2002 OR ENGR2217) |
| 18. | STAT2103 | Probability for Engineers | 3 | MATH2107 |
| 19. | ECCE3006 | Skills Training | 0 | ECCE3153 OR MCTE3110 |

List H: SPECIALIZATION REQUIREMENT (SR) – 30 Credits**Telecommunications and Wireless Systems Specialization**

| No. | Course Code | Course Title | College | Pre-Requisite |
|-----|-------------|--|---------|--|
| 1. | ECCE4242 | Introduction to Computer Networks | 3 | (ECCE4227 OR COMP3518 OR COMP3501) [Incompatible with ECCE5231] |
| 2. | ECCE4153 | Modern Digital Electronics | 3 | ECCE3153 |
| 3. | ECCE4142 | Digital Signal Processing | 3 | ECCE3142 |
| 4. | ECCE4127 | Advanced Digital Communication | 3 | ECCE4122 |
| 5. | ECCE5113 | Antenna Theory and Radiowave Propagation | 3 | ECCE4023 |
| 6. | ECCE5123 | Optical Communications | 3 | ECCE4122 |
| 7. | ECCE5124 | Wireless Communications | 3 | ECCE4122 |
| 8. | ECCE5114 | Telecom Systems Security | 3 | ECCE4122 |
| 9. | ECCE5143 | Advanced Digital Signal Processing | 3 | ECCE4142 |
| 10. | ECCE5130 | Modern Communication Systems Design | 3 | ECCE4153 |

Embedded Computing and Networks Specialization

| No. | Course Code | Course Title | College | Pre-Requisite |
|-----|-------------|---|---------|--|
| 1. | ECCE4242 | Introduction to Computer Networks | 3 | ECCE4227 OR COMP3518 OR COMP3501 [Incompatible with ECCE5231] |
| 2. | ECCE4216 | Machine Learning for Engineers | 3 | (ENGR2217 OR COMP2002) AND (ECCE3352 OR MCTE3210) |
| 3. | ECCE4257 | Applied Algorithms for ECE | 3 | (COMP2002 OR ENGR2217) |
| 4. | ECCE4254 | Operating Systems | 3 | (COMP2002 OR ENGR2217) |
| 5. | ECCE5217 | Reconfigurable Computing | 3 | ECCE4227 |
| 6. | ECCE5232 | Computer Architecture and Organization | 3 | ECCE4227 |
| 7. | ECCE5218 | Routing and Switching | 3 | ECCE4242 |
| 8. | ECCE5293 | Embedded Vision Systems | 3 | ECCE4227 |
| 9. | ECCE5229 | Embedded Real Time Systems | 3 | ECCE4227 |
| 10. | ECCE5219 | Intelligent App. in Robotics and Drones | 3 | ECCE4227 |

Power Systems and Energy Specialization

| No. | Course Code | Course Title | College | Pre-Requisite |
|-----|-------------|----------------------------------|---------|--|
| 1. | ECCE4312 | Power System Analysis I | 3 | ECCE3352 |
| 2. | ECCE4358 | Electrical Machines | 3 | ECCE3352 |
| 3. | ECCE4467 | Power Electronics & Drives | 3 | (ECCE3153 OR MCTE3110 OR MCTE3310) AND (ECCE3352 OR MCTE3210) |
| 4. | ECCE4361 | Renewable Electricity generation | 3 | ECCE3352 |
| 5. | ECCE4316 | Power System Analysis II | 3 | ECCE4312 |
| 6. | ECCE5302 | Power Systems Protection | 3 | ECCE4316 |
| 7. | ECCE5332 | High Voltage Engineering | 3 | ECCE4312 |
| 8. | ECCE5303 | Power Distribution System Eng. | 3 | ECCE4312 |
| 9. | ECCE5322 | Electrical Power Systems Quality | 3 | ECCE4312 |
| 10. | ECCE5315 | Smart Grid | 3 | ECCE4312 |

Electronic Instrumentation and Control Specialization

| No. | Course Code | Course Title | College | Pre-Requisite |
|-----|-------------|--|---------|--|
| 1. | ECCE4142 | Digital Signal Processing | 3 | ECCE3142 |
| 2. | ECCE4153 | Modern Digital Electronics | 3 | ECCE3153 |
| 3. | ECCE4467 | Power Electronics & Drives | 3 | (ECCE3153 OR MCTE3110 OR MCTE3310) AND (ECCE3352 OR MCTE3210) |
| 4. | ECCE4455 | Sensors and Actuators | 3 | ECCE3038 |
| 5. | ECCE4436 | Industrial Control Systems Design | 3 | ECCE4416 |
| 6. | ECCE5452 | Computer-Aided Instrumentation | 3 | ECCE4456 OR 4455) AND ECCE4227 |
| 7. | ECCE4216 | Machine Learning for Engineers | 3 | (ENGR2217 OR COMP2002) and (ECCE3352 OR MCTE3210) |
| 8. | ECCE5445 | Control System Design | 3 | ECCE4416 OR MCTE4250 |
| 9. | ECCE5411 | Introduction to Industrial Network Practices | 3 | ECCE4436 |
| 10. | ECCE5410 | Intelligent Control Systems | 3 | ECCE4416 |

List I: SPECIALIZATION ELECTIVES (SE) – Minimum 9 Credits

| No. | Course Code | Course Title | Pre-Requisite |
|-----|-------------|--|--|
| 1. | ECCE4005 | Numerical Methods for Engineers | MATH3171 AND (COMP2002 OR ENGR2217 OR COMP2216) |
| 2. | ECCE4023 | Engineering Electromagnetics | PHYS2108 AND MATH 3171 |
| 3. | ECCE4127 | Advanced Digital Communication | ECCE4122 |
| 4. | ECCE4142 | Digital Signal Processing | ECCE3142 |
| 5. | ECCE4153 | Modern Digital Electronics | ECCE3153 |
| 6. | ECCE4203 | Advanced Logic Design | ECCE3206 |
| 7. | ECCE4213 | Digital Electronics – Reliability and Testing | ECCE3153 |
| 8. | ECCE4216 | Machine Learning for Engineers | (ENGR2217 OR COMP2002) AND (ECCE3352 OR MCTE3210) |
| 9. | ECCE4221 | Systems of Smart Cities | ENGR2217 OR COMP2002 |
| 10. | ECCE4237 | Block chain and DLT | ENGR2217 OR COMP2002 |
| 11. | ECCE4242 | Introduction to Computer Networks | ECCE4227 OR COMP3518 OR COMP3501 [Incompatible with ECCE5231] |
| 12. | ECCE4254 | Operating Systems | COMP2002 OR ENGR2217 |
| 13. | ECCE4257 | Applied Algorithms for ECE | (COMP2002 OR ENGR2217) |
| 14. | ECCE4282 | Coding and Data Encryption | ECCE3122 OR ECCE4122 |
| 15. | ECCE4312 | Power System Analysis I | ECCE3352 |
| 16. | ECCE4316 | Power System Analysis II | ECCE4312 |
| 17. | ECCE4358 | Electrical Machines | ECCE3352 |
| 18. | ECCE4361 | Renewable Electricity Generation | ECCE3352 |
| 19. | ECCE4422 | Digital Control Systems | ECCE4416 |
| 20. | ECCE4436 | Industrial Control Systems Design | ECCE4416 |
| 21. | ECCE4455 | Sensors and Actuators | ECCE3038 |
| 22. | ECCE4467 | Power Electronics & Drives | (ECCE3153 OR MCTE3110 OR MCTE3310) AND (ECCE3352 OR MCTE3210) |
| 23. | ECCE5001 | Entrepreneurial Opportunities in Electrical and Computer Engineering | |
| 24. | ECCE5002 | Selected Topics in ECE | |
| 25. | ECCE5006 | Biomedical Signal Processing | ECCE3142 |
| 26. | ECCE5007 | Biomedical Instrumentation Engineering | ECCE3142 |
| 27. | ECCE5008 | Project Management | ECCE5004 OR ECCE5010 |
| 28. | ECCE5113 | Antenna Theory and Radiowave Propagation | ECCE4023 |
| 29. | ECCE5114 | Telecom Systems Security | ECCE4122 |
| 30. | ECCE5122 | Communications Systems | ECCE4126 OR ECCE4127 |
| 31. | ECCE5123 | Optical Communications | ECCE4122 |
| 32. | ECCE5124 | Wireless Communications | ECCE4122 |
| 33. | ECCE5128 | Wireless Communication Networks | ECCE4127 |
| 34. | ECCE5129 | Information Theory and Data Communications | ECCE4127 |
| 35. | ECCE5130 | Modern Communication Systems Design | ECCE4153 |
| 36. | ECCE5131 | Digital Cellular Systems | ECCE4142 |
| 37. | ECCE5133 | Satellite Communications | ECCE4122 |
| 38. | ECCE5134 | Selected Topics in Communications | ECCE4126 OR ECCE4127 |
| 39. | ECCE5136 | Error Control Coding | ECCE4122 |
| 40. | ECCE5142 | Image and Video Processing | ECCE4142 |
| 41. | ECCE5143 | Advanced Digital Signal Processing | ECCE4142 |
| 42. | ECCE5160 | Antenna Modeling and Measurement Techniques | ECCE4023 |
| 43. | ECCE5162 | Microwave Engineering | ECCE4023 |
| 44. | ECCE5164 | RF Comm. Circuits | ECCE4153 |
| 45. | ECCE5166 | Introduction to EMI/EMC | ECCE3022 OR ECCE4023 |
| 46. | ECCE5212 | VLSI Design | ECCE4227 |
| 47. | ECCE5213 | Fault-Tolerant Computing Systems | ECCE4227 |
| 48. | ECCE5214 | Adv. Logic & Computer Interfacing | ECCE4227 |
| 49. | ECCE5215 | Computing Systems for Eng. Applications | ECCE4242 |
| 50. | ECCE5217 | Reconfigurable Computing | ECCE4227 |
| 51. | ECCE5218 | Routing and Switching | ECCE4242 |
| 52. | ECCE5219 | Intelligent Applications in Robotics & Drones | ECCE4227 |
| 53. | ECCE5220 | AI Accelerators | ECCE4227 |
| 54. | ECCE5222 | Microprocessor Interfacing | ECCE4227 |
| 55. | ECCE5223 | Adv. Embedded Systems Design | ECCE4227 |

| | | | |
|------|----------|--|--|
| 56. | ECCE5224 | Microprocessor Based Control Design | ECCE4227 |
| 57. | ECCE5228 | Cloud & Edge Computing Infrastructure | ECCE4242 |
| 58. | ECCE5229 | Embedded Real Time Systems | ECCE4227 |
| 59. | ECCE5231 | Industrial Networks and Operating Systems | ECCE4227 AND COMP2002 [Incompatible with ECCE4242 AND ECCE4254] |
| 60. | ECCE5233 | Computer Architecture and Organization II | ECCE5232 |
| 61. | ECCE5234 | Industrial Systems Security | ECCE4242 OR ECCE5411 |
| 62. | ECCE5236 | Practical Ethical Hacking | ECCE4242 OR ECCE5411 |
| 63. | ECCE5242 | Advanced Computer Networks | ECCE4242 |
| 64. | ECCE5243 | Network Software Design & Programming | ECCE4242 |
| 65. | ECCE5252 | Software Engineering | ECCE4252 OR ECCE4255 |
| 66. | ECCE5265 | Database Engineering and Applications | COMP2002 OR ENGR2217 |
| 67. | ECCE5282 | Computer Network Security | ECCE4242 OR ECCE5231 |
| 68. | ECCE5283 | Cryptography, Security & e-Commerce | ECCE4242 |
| 69. | ECCE5284 | Digital Forensics | (ENGR2217 OR COMP2002) AND (ECCE4242 OR ECCE5411 OR ECCE5231) |
| 70. | ECCE5291 | Functional Verification of Hardware Designs | ECCE4227 |
| 71. | ECCE5292 | Selected Topics in Computer Engineering | ECCE4227 AND (ECCE4242 OR ECCE5231) |
| 72. | ECCE5293 | Embedded Vision Systems | ECCE4227 |
| 73. | ECCE5294 | Introduction to Real Time Systems | COMP2002 OR ENGR2217 |
| 74. | ECCE5302 | Power Systems Protection | ECCE4316 |
| 75. | ECCE5303 | Power Distribution System Eng. | ECCE4316 |
| 76. | ECCE5304 | Power Stations | ECCE4312 |
| 77. | ECCE5313 | Electric Power Transmission System Eng. | ECCE4316 |
| 78. | ECCE5314 | Selected Topics in Power | ECCE4312 |
| 79. | ECCE5315 | Smart Grid | ECCE4312 |
| 80. | ECCE5316 | Renewable Power Generation | ECCE3352 |
| 81. | ECCE5317 | Power System Stability and Control | ECCE4316 |
| 82. | ECCE5322 | Electrical Power Systems Quality | ECCE4312 |
| 83. | ECCE5323 | Power System Operation | ECCE4316 |
| 84. | ECCE5324 | Power System Reliability and Planning | ECCE4312 |
| 85. | ECCE5332 | High Voltage Engineering | ECCE4312 |
| 86. | ECCE5333 | Power System Economics | ECCE4312 |
| 87. | ECCE5342 | Electrical Engineering Material | PHYS2108 |
| 88. | ECCE5352 | Generalized Machine Theory | ECCE4358 |
| 89. | ECCE5410 | Intelligent control systems | ECCE4416 |
| 90. | ECCE5411 | Introduction to the Industrial network practices | ECCE4436 |
| 91. | ECCE5412 | Mechatronics | ECCE4416 |
| 92. | ECCE5414 | Real Time Control System | ECCE4416 AND ECCE4227 |
| 93. | ECCE5415 | Control of Electric Machines | ECCE4467 |
| 94. | ECCE5422 | Selected Topics in Control Systems | ECCE4416 OR MCTE4250 |
| 95. | ECCE5432 | Programmable Logic Control Systems | ECCE3206 AND ECCE4416 |
| 96. | ECCE5433 | Modern Control Systems | ECCE4416 |
| 97. | ECCE5434 | System Dynamics and Simulation | ECCE3142 |
| 98. | ECCE5443 | Optimization Techniques in Engineering | MATH3171 |
| 99. | ECCE5445 | Control System Design | ECCE4416 OR MCTE4250 |
| 100. | ECCE5452 | Computer-Aided Instrumentation | (ECCE4456 OR 4455) AND ECCE4227 |
| 101. | ECCE5453 | Mobile Robot Control | ECCE4416 |
| 102. | ECCE5462 | Electric Drives | ECCE4466 OR ECCE4467 |
| 103. | ECCE5464 | Advanced Power Electronics | ECCE4466 OR ECCE4467 |
| 104. | ECCE5501 | Co-Operative Training-I | ENGR4007 (co-requisite) |
| 105. | ECCE5502 | Co-Operative Training-II | ECCE5501 |

Note:

- Students are advised to regularly check the most updated degree plan on the department webpage. This degree plan is last updated on 2nd of May 2024.
- Course Syllabus and exact prerequisite(s) can be checked on <https://portal.squ.edu.om/course-description>



Degree and Study Plan

| | |
|------------|---------------------------------------|
| College | Engineering |
| Department | Mechanical and Industrial Engineering |
| Cohorts | 2024 |
| Degree | Bachelor of Engineering (B. Eng.) |
| Major | Industrial Engineering (IE) |



Summary of Credits

| Credit Category | Courses | Total Credits Hours |
|--------------------------------|--|---------------------|
| General Foundation Program | | |
| University Requirements (UR) | Arabic | 2 |
| | Contemporary Omani State and People | 2 |
| | Oman & Islamic Civilization or Islamic Culture | 2 |
| University Electives (UE) | See List A | 6 |
| College Requirements (CR) | See List B | 32 |
| College Electives (CE) | See List C | 3 |
| Departmental Requirements (DR) | See List D | 11 |
| Major Requirements (AR) | See List E | 60 |
| Major Electives (AE) | See List F | 18 |
| Total Credits | | 136 |

Important Information:



Student is to follow one of the three schemes of the degree plan:

1. **Scheme I** is for students who completed the foundation program in one regular semester (Fall).
2. **Scheme II** is for students who completed the foundation program in two regular semesters (Fall and Spring).
3. **Cooperative Training (COOP) Scheme** is optional. It is designed for students following Scheme I or II and willing to take a one-year COOP program in semesters 9 and 10.

Students are advised to regularly check the most updated degree plan on the department webpage. This degree plan is last updated on April 22nd, 2024.

Course description and exact prerequisite(s) can be checked on:

<https://www.squ.edu.om/engineering/Academic/Undergraduate-Programs/Industrial-Engineering>

| | | |
|-----------------------------|---|------------------|
| For reference contact: | Dr. Nasr Al Hinai | Ext. 1352 |
| HoD: Dr. Nasr Al Hinai |  | Date: 22/04/2024 |
| Dean's Office: |  | Date: 02/05/2024 |
| Admission and Registration: | | Date: |

Department of Mechanical and Industrial Engineering

Industrial Engineering Study Plan: **2024 Cohort (Scheme I)**

| Scheme I FP1 Fall 2024 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|------------------------------|---------------|----------------------------|-----|------------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total Credits | | | | 0 |

| Scheme I Semester 1 Spring 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|----------------------|--|-----|------------------------|------|
| | HIST1010 or ISLM1010 | Oman and Islamic Civilization or Islamic Culture | 2 | | UR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total Credits | | | | 14 |

| Scheme I Semester 2 Fall 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|---------------|---|-----|------------------------|------|
| | | University Elective | 2 | | UE |
| | ARAB1060** | Arabic | 2 | | UR |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | Total Credits | | | | 16 |

| Scheme I Semester 3 Spring 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|---------------|--|-----|------------------------|------|
| | | College Elective | 3 | | CE |
| | MEIE3281 | Probability & Statistics for Engineers | 3 | MATH2107 | DR |
| | MATH3171 | Linear Algebra & Multivariate Calculus for Engineers | 3 | MATH2108 or MATH2109 | CR |
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | DR |
| | Total Credits | | | | 15 |

** For non-Arabic speaking or non-Omanis students, please refer to Appendix A

| Scheme I Semester 4 Fall 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|-------------|-------------------------------------|-----|--|------|
| | | University Elective | 2 | | UE |
| | MEIE3203 | Introductory Applied Mechanics | 3 | PHYS2107 | AR |
| | MEIE3292 | Work System Analysis and Design | 3 | MEIE3281 | AR |
| | MEIE3284 | Industrial Information System | 3 | COMP2002 or ENGR2216 or ENGR2217 | AR |
| | MEIE3279 | Theory of Modeling and Optimization | 3 | (COMP2002 or ENGR2216 or ENGR2217) and MATH3171* | AR |
| Total Credits | | | | 14 | |

| Scheme I Semester 5 Spring 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|-------------|---|-----|----------------------------------|------|
| | MATH4174 | Differential Equations for Engineers | 3 | (MATH2108 or MATH2109), LANC2161 | CR |
| | MEIE3276 | Mechatronics Systems | 2 | PHYS2108, COMP2002 or ENGR2217 | AR |
| | MEIE4229 | Integer and Stochastic Optimization in Practice | 3 | MEIE 3279 | AR |
| | MEIE4263 | Materials and Manufacturing Technology | 3 | CHEM1071 | AR |
| | MEIE4219 | Optimal Experimental Design | 3 | MEIE3281 | AR |
| | MEIE4288 | Data Science and Engineering Analytics | 2 | ENGR2217 or COMP2002 | AR |
| Total Credits | | | | 16 | |

| Scheme I Semester 6 Fall 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|-------------|--|-----|------------------------|------|
| | MEIE4285 | Engineering Economics | 3 | MATH2107 | DR |
| | MEIE4233 | Production Planning and Inventory Management | 3 | MEIE3281 | AR |
| | MEIE4201 | Ergonomics and Safety | 3 | MEIE3292 | AR |
| | MEIE4286 | Engineering Management | 3 | | AR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| Total Credits | | | | 15 | |

| Scheme I Semester 7 Spring 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|-------------|------------------------------------|-----|------------------------|------|
| | MEIE4255 | Facilities Design and Planning | 3 | MEIE4233 | AR |
| | MEIE4244 | Quality Engineering and Management | 3 | MEIE3281 | AR |
| | MEIE4272 | Simulation Models | 3 | MEIE4229 | AR |
| | MEIE5273 | Product Design and Manufacturing | 3 | MEIE4263 | AR |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| Total Credits | | | | 15 | |

| Scheme I Summer 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|----------------------------|-------------|---------------------|-----|------------------------|------|
| | ENGR4007 | Industrial Training | 0 | | CR |
| Total Credits | | | | 0 | |

| Scheme I Semester 8 Fall 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|-------------|--|-----|------------------------|------|
| | | University Elective | 2 | | UE |
| | MEIE5291 | Project I | 2 | MEIE4255 or MEIE4272 | AR |
| | MEIE5275 | Automated Industrial Systems | 3 | MEIE3276 | AR |
| | MEIE5244 | Supply Chain and Logistics Engineering | 3 | MEIE4233 | AR |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | MEIE5xxx | Major Elective 4 | 3 | | AE |
| Total Credits | | | | 16 | |

| Scheme I Semester 9 Spring 2029 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|-------------|---------------------------------|-----|------------------------|------|
| | MEIE5225 | Smart Manufacturing | 3 | MEIE4263 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5292 | Project II | 3 | MEIE5291 | AR |
| | MEIE5xxx | Major Elective 5 | 3 | | AE |
| | MEIE5xxx | Major Elective 6 | 3 | | AE |
| Total Credits | | | | 15 | |

Department of Mechanical and Industrial Engineering

Industrial Engineering Study Plan: **2024 Cohort (Scheme II)**

| Scheme II FP1 Fall 2024 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------|----------------------|----------------------------|-----|------------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total Credits 0 | | | | |

| Scheme II FP2 Spring 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------|----------------------|----------------------------|-----|------------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total Credits 0 | | | | |

| Scheme II Semester 1 Fall 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------------|-----------------------|--|-----|------------------------|------|
| | HIST1010 or ISLM1010 | Oman and Islamic Civilization or Islamic Culture | 2 | | UR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total Credits 14 | | | | |

| Scheme II Semester 2 Spring 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|-----------------------|---|-----|------------------------|------|
| | | University Elective | 2 | | UE |
| | ARAB1060** | Arabic | 2 | | UR |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | Total Credits 16 | | | | |

** For non-Arabic speaking or non-Omanis students, please refer to Appendix A

*Offering summer semester is subjected to the availability of the courses.

| Scheme II Summer 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-----------------------------|----------------------|----------------------|-----|------------------------|------|
| | | University Elective* | 2 | | UE |
| | | College Elective* | 3 | | CE |
| | Total Credits 5 | | | | |

| Scheme II | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-----------|-------------|----------------------------|-----|------------------------|------|
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |

| | | | | | |
|--|----------------------|--|---|--|-----------|
| | MEIE3281 | Probability & Statistics for Engineers | 3 | MATH2107 | DR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | DR |
| | MEIE3279 | Theory of Modeling and Optimization | 3 | (COMP2002 or ENGR2216 or ENGR2217) and MATH3171* | AR |
| | MATH3171 | Linear Algebra & Multivariate Calculus for Engineers | 3 | MATH2108 or MATH2109 | CR |
| | MEIE4288 | Data Science and Engineering Analytics | 2 | ENGR2217 or COMP2002 | AR |
| | Total Credits | | | | 17 |

| Scheme II Semester 4 Spring 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|----------------------|---|-----|----------------------------------|-----------|
| | MATH4174 | Differential Equations for Engineers | 3 | (MATH2108 or MATH2109), LANC2161 | CR |
| | MEIE4263 | Materials and Manufacturing Technology | 3 | CHEM1071 | AR |
| | MEIE3203 | Introductory Applied Mechanics | 3 | PHYS2107 | AR |
| | MEIE4219 | Optimal Experimental Design | 3 | MEIE3281 | AR |
| | MEIE3276 | Mechatronics Systems | 2 | PHYS2108, COMP2002 or ENGR2217 | AR |
| | MEIE4229 | Integer and Stochastic Optimization in Practice | 3 | MEIE3279 | AR |
| | Total Credits | | | | 17 |

| Scheme II Semester 5 Fall 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------------|----------------------|--|-----|----------------------------------|-----------|
| | MEIE3284 | Industrial Information System | 3 | COMP2002 or ENGR2216 or ENGR2217 | AR |
| | MEIE3292 | Work System Analysis & Design | 3 | MEIE3281 | AR |
| | MEIE4286 | Engineering Management | 3 | | AR |
| | MEIE4233 | Production Planning and Inventory Management | 3 | MEIE3281 | AR |
| | MEIE4285 | Engineering Economics | 3 | MATH2107 | DR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| | Total Credits | | | | 18 |

| Scheme II Semester 6 Spring 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|----------------------|------------------------------------|-----|------------------------|-----------|
| | MEIE4255 | Facilities Design and Planning | 3 | MEIE4233 | AR |
| | MEIE4201 | Ergonomics and Safety | 3 | MEIE3292 | AR |
| | MEIE4244 | Quality Engineering and Management | 3 | MEIE3281 | AR |
| | MEIE5273 | Product Design and Manufacturing | 3 | MEIE4263 | AR |
| | MEIE4272 | Simulation Models | 3 | MEIE4229 | AR |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| | Total Credits | | | | 18 |

| SCHEM | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------|-------------|--------------|-----|------------------------|------|
|-------|-------------|--------------|-----|------------------------|------|

| | | | | | |
|--|-----------------|---------------------|---|--|----|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | Total Credits 0 | | | | |

| Scheme II Semester 7 Fall 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------------|------------------|--|-----|------------------------|------|
| | | University Elective | 2 | | UE |
| | MEIE5275 | Automated Industrial Systems | 3 | MEIE3276 | AR |
| | MEIE5291 | Project I | 2 | MEIE4255 or MEIE4272 | AR |
| | MEIE5244 | Supply Chain and Logistics Engineering | 3 | MEIE4233 | AR |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | MEIE5xxx | Major Elective 4 | 3 | | AE |
| | Total Credits 16 | | | | |

| Scheme II Semester 8 Spring 2029 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|-------------|---------------------------------|-----|------------------------|------|
| | MEIE5225 | Smart Manufacturing | 3 | MEIE4263 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5292 | Project II | 3 | MEIE5291 | AR |
| | MEIE5xxx | Major Elective 5 | 3 | | AE |
| | MEIE5xxx | Major Elective 6 | 3 | | AE |
| Total Credits 15 | | | | | |

Department of Mechanical and Industrial Engineering

Industrial Engineering Study Plan: **2024 Cohort (COOP Scheme)**

- The Cooperative Training (COOP) Scheme is **optional**.
- **Scheme I** students can enroll in this scheme starting from semester 8 (Fall 2024) after the foundation program.
- **Scheme II** students can enroll in this scheme starting from semester 7 (Fall 2024) after the foundation program.
- For enrollment terms, conditions, and registration procedure, please consult the Head of Department and the Assistant Dean for Training and Community Services Offices.

| COOP Scheme COOP Semester 1 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------|-----------------------------|------------------------|-----|------------------------|------|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | MEIE5210 | Cooperative Training I | 0 | ENGR4007* | AE |
| | Total Credits 0 | | | | |

| COOP Scheme COOP Semester 2 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------|-----------------------------|-------------------------|-----|------------------------|------|
| | MEIE5211 | Cooperative Training II | 6 | MEIE5210 | AE |
| | Total Credits 6 | | | | |

| COOP Scheme COOP Semester 3 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------|------------------------------|--|-----|------------------------|------|
| | | University Elective | 2 | | UE |
| | MEIE5275 | Automated Industrial Systems | 3 | MEIE3276 | AR |
| | MEIE5291 | Project I | 2 | MEIE4255 or MEIE4272 | AR |
| | MEIE5244 | Supply Chain and Logistics Engineering | 3 | MEIE4233 | AR |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | Total Credits 13 | | | | |

| COOP Scheme COOP Semester 4 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------|------------------------------|---------------------------------|-----|------------------------|------|
| | MEIE5225 | Smart Manufacturing | 3 | MEIE4263 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5292 | Project II | 3 | MEIE5291 | AR |
| | MEIE5xxx | Major Elective 4 | 3 | | AE |
| | Total Credits 12 | | | | |

Department of Mechanical and Industrial Engineering
Degree Plan: Cohort 2024
Appendix A: UNIVERSITY REQUIREMENTS for Non-Arabic or Non-Oman Students

| No. | Cohorts 2018 and before | Credits | Cohorts 2018 and after | Credits | Notes |
|-----|-------------------------|---------|------------------------|---------|---|
| 1 | ARAB1001 | 3 | ARAB1060 | 2 | |
| 2 | SOCY1001 | 1 | SOCY1005 | 2 | For Omanis Only |
| 3 | -- | -- | SOCY1007 | 2 | For Non-Omanis |
| 4 | ARAB1019 | | | 3 | For non-Arabic Speaking Students. Offered only in Fall semesters |

Notes:

- For the courses (SOCY1005, SOCY1007, HIST1010), the course materials and exams are in English for non-Arabic speaking students.
- Currently, there is no Arabic course with 2 credits for the non-Arabic speaking students of cohorts 2018 and after. Those students have to register the ARAB1019 as shown in the table above.

Department of Mechanical and Industrial Engineering
Degree Plan: Cohort 2024
LIST A: UNIVERSITY ELECTIVES (UE)

Engineering students must register a humanity or social course (non-scientific & non-linguistic course) from any college as a University Elective. The list of University Elective Courses allowed for Engineering students can be found via the following link:



Department of Mechanical and Industrial Engineering
Degree Plan: Cohort 2024
LIST B: COLLEGE REQUIREMENTS (CR)

| Code | Title | Credits | Pre-requisite / Co-requisite * |
|----------|---|---------|----------------------------------|
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering II | 3 | LANC2160 |
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II for Science and Engineering | 3 | MATH 2107 |
| MATH3171 | Linear Algebra & Multivariate Calculus | 3 | MATH2108 or MATH2109 |
| MATH4174 | Differential Equations for Engineers | 3 | (MATH2108 or MATH2109), LANC2161 |

| | | | |
|--------------|-----------------------------------|-----------|-----------|
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* |
| PHYS2108 | Physics of Engineering II | 4 | PHYS 2107 |
| CHEM1071 | General Chemistry for Engineering | 3 | |
| ENGR4007 | Industrial Training | 0 | |
| Total | | 32 | |

Department of Mechanical and Industrial Engineering
Degree Plan: Cohort 2024
LIST C: COLLEGE ELECTIVES (CE)

One course - 3 credit hours:

The elective course will be offered from the following courses subject to availability.

| Code | Title | Credits | Pre-requisite / Co-requisite* |
|----------|--|---------|-------------------------------|
| COMP2002 | Introduction to Computer Programming for Engineers | 3 | |
| ENGR2217 | Programming for Engineers | 3 | |

Department of Mechanical and Industrial Engineering
Degree Plan: Cohort 2024
LIST D: DEPARTMENT REQUIREMENTS (DR)

| Code | Title | Credits | Pre-requisite / Co-requisite* |
|--------------|--|-----------|-------------------------------|
| MEIE3103 | Engineering Tools and Graphics | 2 | |
| MEIE3281 | Probability & Statistics for Engineers | 3 | MATH2107 |
| MEIE4285 | Engineering Economics | 3 | MATH2107 |
| MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 |
| Total | | 11 | |

Department of Mechanical and Industrial Engineering
Degree Plan: Cohort 2024
LIST E: MAJOR REQUIREMENTS (AR)

| Code | Title | Credits | Pre-requisite / Co-requisite* |
|--------------|---|-----------|--|
| MEIE3203 | Introductory Applied Mechanics | 3 | PHYS2107 |
| MEIE3276 | Mechatronics Systems | 2 | PHYS2108, COMP2002 or ENGR2217 |
| MEIE3279 | Theory of Modeling and Optimization | 3 | (COMP2002 or ENGR2216 or ENGR2217) and MATH3171* |
| MEIE3284 | Industrial Information System | 3 | COMP2002 or ENGR2216 or ENGR2217 |
| MEIE3292 | Work System Analysis and Design | 3 | MEIE3281 |
| MEIE4201 | Ergonomics and Safety | 3 | MEIE3292 |
| MEIE4219 | Optimal Experimental Design | 3 | MEIE3281 |
| MEIE4229 | Integer and Stochastic Optimization in Practice | 3 | MEIE 3279 |
| MEIE4233 | Production Planning and Inventory Management | 3 | MEIE3281 |
| MEIE4244 | Quality Engineering and Management | 3 | MEIE3281 |
| MEIE4288 | Data Science and Engineering Analytics | 2 | ENGR2217 or COMP2002 |
| MEIE4255 | Facilities Design and Planning | 3 | MEIE4233 |
| MEIE4263 | Materials and Manufacturing Technology | 3 | CHEM1071 |
| MEIE4272 | Simulation Models | 3 | MEIE4229 |
| MEIE4286 | Engineering Management | 3 | |
| MEIE5225 | Smart Manufacturing | 3 | MEIE4263 |
| MEIE5244 | Supply Chain and Logistics Engineering | 3 | MEIE4233 |
| MEIE5273 | Product Design and Manufacturing | 3 | MEIE4263 |
| MEIE5275 | Automated Industrial Systems | 3 | MEIE3276 |
| MEIE5291 | Project I | 2 | MEIE4255 or MEIE4272 |
| MEIE5292 | Project II | 3 | MEIE5291 |
| Total | | 60 | |

Department of Mechanical and Industrial Engineering
 Degree Plan: Cohort 2024
LIST F: MAJOR ELECTIVES (AE)

18 credit hours[§]:

- **Scheme I or II: six courses**
- **COOP Scheme: Cooperative Training courses (MEIE5210 and MEIE5211) and four elective courses**

| Code | Title | Credits | Pre-requisite / Co-requisite * |
|----------|---|---------|--------------------------------|
| MEIE5201 | Occupational Safety engineering | 3 | MEIE4201 |
| MEIE5210 | Cooperative Training I | | ENGR4007* |
| MEIE5211 | Cooperative Training II | | MEIE5210 |
| MEIE5222 | Introduction to Healthcare Management | 3 | MEIE4233 |
| MEIE5224 | Six Sigma Methodology | 3 | MEIE4219 |
| MEIE5251 | Agent-Based Modeling | 3 | MEIE4272 |
| MEIE5263 | Design for Manufacturing | 3 | MEIE3103, MEIE4263 |
| MEIE5287 | Project Management | 3 | MEIE3279 |
| MEIE5271 | Decision Analysis Models and Applications | 3 | MEIE4229, MEIE4285 |

| | | | |
|-----------|---|---|----------------------------------|
| MEIE5285 | Technology Transfer | 3 | |
| MEIE5290 | Data Mining | 3 | |
| MEIE5233 | Maintenance and Reliability Engineering | 3 | MEIE3281 |
| MEIE5264 | CAD/CAM | 3 | MEIE3103, (MEIE3102 or MEIE3203) |
| MEIE5265 | Computer Integrated Manufacturing | 3 | MEIE4263 |
| MEIE5280 | Sustainable Manufacturing Systems | 3 | |
| MEIE5297 | Special Topics | 3 | |
| MEIE4141* | Fluid Mechanics | 3 | PHYS2108 |
| MEIE4183* | Numerical Analysis | 3 | MATH3171, COMP2002 |
| MEIE5168 | Introduction to Polymers | 3 | MEIE4263 |
| MEIE5183 | Emerging Technologies in ME | 3 | MEIE4288 or MEIE4183 |

* - One 4000-level or 5000-level course can be taken from another engineering program subjected to the approval of the academic advisor and the HoD.

Note:

- Students are advised to regularly check the most updated degree plan on the department webpage. This degree plan is last updated on April 22nd, 2024.

- Course description and exact prerequisite(s) can be checked on:
<http://sisinfo.squ.edu.om/cgi-bin/crs-en/allsub.cgi>



Degree and Study Plan

College: Engineering
Program: Mechatronics Engineering
Cohort: 2024
Degree: Bachelor of Engineering
Major: Mechatronics Engineering

| Summary of Credits | | |
|--------------------|--|-----|
| 1 | University Requirements (UR) | 6 |
| | General Foundation Program | (0) |
| | Arabic language | (2) |
| | Contemporary Omani State and People | (2) |
| | Oman & Islamic Civilization or Islamic Culture | (2) |
| 2 | University Elective (UE) | 6 |
| 3 | College Requirements (CR) (see List B) | 32 |
| 4 | College Elective (CE) (see List C) | 3 |
| 7 | Major Requirements (AR) (see List F) | 77 |
| 8 | Major Elective (AE) (see List G) | 12 |
| Total credits | | 136 |

For reference contact: Dr. Nasr Al-Hinai

Ext. 1316

Date: 2 May 2024

Dean's Office

Date: 2 May 2024

Admission and Registration

Date:

Important Information

- Students MUST follow one of the three schemes of the Degree Plan:
 - Scheme I is for students who completed the Foundation Program in one regular semester (Fall).
 - Scheme II is for students who completed the Foundation Program in two regular semesters (Fall & Spring).
 - Cooperative Training (COOP) Scheme is optional. It is designed for students who are following Scheme I or II and willing to take a one-year COOP program in semesters 9 and 10.
- Students are advised to regularly check the most updated degree plan on the College's website:
<https://www.squ.edu.om/engineering/Academic/Undergraduate-Programs/Mechatronics-Engineering>
- Course description and exact prerequisite(s) can be found on SQU's Portal:
<https://portal.squ.edu.om/course-description>

Mechatronics Engineering Program

Study Plan for 2024 Cohort (SCHEME I – With One Semester General Foundation Program)

| | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|-------------------------|----------------------|---|-----|--|------|
| Fall-24 | - | General Foundation Program | - | - | UR |
| Semester 2 Spring-25 | HIST1010 or ISLM1010 | Oman & Islamic Civilization or Islamic Culture | 2 | | UR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total | | 14 | | |
| Semester 3 Fall -25 | ARAB1060 | Arabic | 2 | | UR |
| | | University Elective | 2 | | UE |
| | SOCY1005 | Oman: State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | Total | | 16 | | |
| Semester 4 Spring-26 | MATH4174 | Differential Equations for Engr. | 3 | (LANC2161 AND MATH2108) OR (LANC2161 AND MATH2109) | CR |
| | PHYS2108 | Physics for Eng. II | 4 | PHYS2107 | CR |
| | COMP2002 or ENGR2217 | Intr. to Comp. Program. for Eng. or Programming for Engineers | 3 | | CE |
| | ECCE2017 | Electric Circuit Analysis | 4 | MATH2107 | AR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | AR |
| | Total | | 16 | | |
| Semester 5 Fall -26 | MATH3171 | Lin. Alg. & Mult. Calc. for Eng. | 3 | (MATH2108) OR (MATH2109) | CR |
| | MCTE2129 | Engineering Mechanics | 3 | PHYS 2107 and MATH2107 | AR |
| | MEIE3281 | Probability & Statistics for Engineers | 3 | MATH2107 | AR |
| | ECCE3206 | Digital Logic Design | 3 | | AR |
| | MCTE3250 | Engineering System Design | 3 | MEIE3103 | AR |
| | Tot | | 15 | | |
| Semester 6 Spring-27 | MCTE3230 | Properties and Strength of Materials | 3 | MCTE2129 or MEIE2129 | AR |
| | MCTE4185 | Signals & Systems for Mechatronics | 3 | ECCE2017 or ECCE3016 | AR |
| | MCTE3310 | Electronics for Mechatronics | 3 | ECCE2017 or ECCE2016 | AR |
| | | University Elective | 2 | | UE |
| | MEIE3122 | Machine Dynamics | 3 | MCTE2129 or MEIE2129 | AR |
| | Tot | | 14 | | |

& OR ENGR 2217-Programming for Engineers

Mechatronics Engineering Program

Study Plan for 2024 Cohort (SCHEME I - With One Semester General Foundation Program)

| | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---------------------------|-------------|---------------------------------------|-----|--|------|
| Semester 7 Fall-27 | MCTE4102 | Machine Design for Mechatronics | 3 | MCTE3230 | AR |
| | MCTE4145 | Instrumentation & Measurement | 3 | MCTE3110 or MCTE3310 | AR |
| | MCTE3210 | Electromechanical Sys. & Actuators | 3 | ECCE2017 or ECCE3016 | AR |
| | ECCE4227 | Embedded Systems | 3 | (COMP2002 or ENGR2217) and ECCE3206 | AR |
| | MCTE4150 | Modeling and Simulation | 3 | MATH4174 | AR |
| | Total | | 15 | | |
| Semester 8 Spring-28 | MCTE4210 | Power Electronics & Drives | 3 | MCTE3110 or MCTE3310 and MCTE3210 | AR |
| | | University Elective | 2 | | UE |
| | MCTE4241 | Thermofluids | 3 | PHYS2108 and MATH2109 | AR |
| | MCTE4450 | Control Systems Engineering | 3 | MCTE4150 | AR |
| | ECCE5004 | Engineering Managements & Economics I | 3 | STAT2103 or MEIE3281 | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217) and MATH3171 | AR |
| | Total | | 17 | | |
| Summer-28 | ENGR4007 | Industrial Training | 0 | | CR |
| | Total | | 0 | | |
| Semester 9 Fall-28 | MCTE5191 | Project I | 2 | MCTE3250 OR MCTE3240 and PR ¹ | AR |
| | MCTE5210 | Real-time control and interfacing | 3 | MCTE4450 | AR |
| | MCTE4255 | Mechatronics System Design | 3 | ECCE4227 and MCTE4145 and MCTE3250 OR MCTE3240 | AR |
| | MCTE5xxx | Program Elective 1 | 3 | | AE |
| | MCTE5xxx | Program Elective 2 | 3 | | AE |
| | Total | | 14 | | |
| Semester 10 Spring- 29 | MCTE5291 | Project II | 3 | MCTE5191 | AR |
| | MCTE5xxx | Program Elective 3 | 3 | | AE |
| | MCTE5xxx | Program Elective 4 | 3 | | AE |
| | MCTE5142 | Robotics | 3 | MEIE3122 | AR |
| | MCTE5420 | Pneumatic and Hydraulic Systems | 3 | MCTE3210 | AR |
| | Total | | 15 | | |

PR¹: Internal regulation [enforced by the MCE Program] **Note: Completed 90 Cr.**
MCTE5191 is offered in Fall semesters ONLY.

Mechatronics Engineering Program

Study Plan for 2024 Cohort (SCHEME I - With One Semester General Foundation Program) Co-Operative Scheme

| | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|---------------------------|-------------|-------------------------------------|-----|--|------|
| Semester 7 Fall-27 | MCTE4102 | Machine Design for Mechatronics | 3 | MCTE3230 | AR |
| | MCTE4145 | Instrumentation & Measurement | 3 | MCTE3110 or MCTE3310 | AR |
| | MCTE3210 | Electromechanical Sys. & Actuators | 3 | ECCE2017 or ECCE3016 | AR |
| | ECCE4227 | Embedded Systems | 3 | (COMP2002 or ENGR2217) and ECCE3206 | AR |
| | MCTE4150 | Modeling and Simulation | 3 | MATH4174 | AR |
| | Total | | 15 | | |
| Semester 8 Spring-28 | MCTE4210 | Power Electronics & Drives | 3 | (MCTE3110 or MCTE3310) and MCTE3210 | AR |
| | MCTE4241 | Thermofluids | 3 | PHYS2108 and MATH2109 | AR |
| | MCTE4450 | Control Systems Engineering | 3 | MCTE4150 | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217) and MATH3171 | AR |
| | | University Elective | 2 | | UE |
| | Total | | 14 | | |
| Fall 28 Coop-Sem.1 | ENGR4007 | Industrial Training | 0 | | CR |
| | MCTE5001 | Co-op Training I | 0 | ENGR4007 | AE |
| Spring 28 Coop-Sem.2 | MCTE5002 | Co-op Training II | 6 | MCTE5001 | AE |
| | Total | | 6 | | |
| Semester 9 Fall-29 | MCTE5191 | Project I | 2 | MCTE3240 or MCTE3250 and PR 1 | AR |
| | MCTE5210 | Real-time control and interfacing | 3 | MCTE4450 | AR |
| | MCTE4255 | Mechatronics System Design | 3 | ECCE4227 and MCTE4145 and MCTE3250 or MCTE3240 | AR |
| | MCTE5xxx | Program Elective 1 | 3 | | AE |
| | MCTE5xxx | Program Elective 2 | 3 | | AE |
| | Total | | 14 | | |
| Semester 10 Spring- 29 | MCTE5291 | Project II | 3 | MCTE5191 | AR |
| | MCTE5142 | Robotics | 3 | MEIE3122 | AR |
| | MCTE5420 | Pneumatic and Hydraulic Systems | 3 | MCTE3210 | AR |
| | ECCE5004 | Engineering Managements & Economics | 3 | STAT2103 or MEIE3281 | AR |
| | Total | | 12 | | |

PR1: Internal regulation [enforced by the MCE Program Note: **Note: Completed 90 Cr.**

MCTE5191 will be available only in each fall semester.

Mechatronics Engineering Program

Study Plan for 2024 Cohort (SCHEME II - With Two Semester General Foundation Program)

| | Course Code | Course Title | Cr | Pre-req. | Cat. |
|-------------------------|----------------------|---|----|--|------|
| Fall-25 | - | General Foundation Program | - | - | UR |
| Spring-26 | - | General Foundation Program | - | - | UR |
| Semester 3 Fall-26 | HIST1010 or ISLM1010 | Oman& Islamic Civilization or Islamic Culture | 2 | | UR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total | | 14 | | |
| Semester 4 Spring-27 | ARAB1060 | Arabic | 2 | | UR |
| | SOCY1005 | Oman: State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Engineering | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107 | CR |
| | | University Elective | 2 | | UE |
| | Total | | 16 | | |
| Semester 5 Fall-27 | ECCE2017 | Electric Circuit Analysis | 4 | MATH2107 | AR |
| | MATH4174 | Differential Equations for Eng. | 3 | (LANC2161 AND MATH2108) OR (LANC2161 AND MATH2109) | CR |
| | PHYS2108 | Physics for Eng. II | 4 | PHYS2107 | CR |
| | MCTE2129 | Engineering Mechanics | 3 | PHYS 2107 and MATH2107 | AR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | AR |
| | Total | | 16 | | |
| Semester 6 Spring-28 | MCTE3310 | Electronics for Mechatronics | 3 | ECCE2017 or ECCE2016 | AR |
| | MCTE4185 | Signals & Systems for Mechatronics | 3 | ECCE2017 or ECCE3016 | AR |
| | COMP2002 or | Intr. to Comp. Program. for Eng. or Programming for Engineers | 3 | | CE |
| | | University Elective | 2 | | UE |
| | ECCE3206 | Digital Logic Design | 3 | | AR |
| | MCTE3230 | Properties and Strength of Materials | 3 | MCTE2129 or MEIE2129 | AR |
| | Total | | 17 | | |

Mechatronics Engineering Program

Study Plan for 2024 Cohort (SCHEME II - With Two Semester General Foundation Program)

| | Course Code | Course Title | Cr. | Pre-req. | Cat. |
|----------------------------|-------------|--|-----|--|------|
| Semester 7 Fall-27 | MCTE4145 | Instrumentation & Measurement | 3 | MCTE3110 or MCTE3310 | AR |
| | MCTE4102 | Machine Design for Mechatronics | 3 | MCTE3230 | AR |
| | MCTE3210 | Electromechanical Sys. & Actuators | 3 | ECCE2017 or ECCE3016 | AR |
| | MCTE4150 | Modeling and Simulation | 3 | MATH4174 | AR |
| | ECCE4227 | Embedded Systems | 3 | (COMP2002 or ENGR2217) and ECCE3206 | AR |
| | MCTE3250 | Engineering System Design | 3 | | AR |
| | Total | | 18 | | |
| Semester 8 Spring-28 | MCTE4210 | Power Electronics & Drives | 3 | MCTE3110 or MCTE3310 and MCTE3210 | AR |
| | MATH3171 | Lin. Alg. & Mult. Calc. for Eng. | 3 | (MATH2108) OR (MATH2109) | CR |
| | MEIE3122 | Machine Dynamics | 3 | MCTE2129 | AR |
| | MCTE4450 | Control Systems Engineering | 3 | MCTE4150 | AR |
| | MCTE4241 | Thermofluids | 3 | PHYS2108 and MATH2109 | AR |
| | | University Elective | 2 | | UE |
| | Total | | 17 | | |
| Summer-28 | ENGR4007 | Industrial Training | 0 | | CR |
| | Total | | 0 | | |
| Semester 9 Fall-28 | MCTE5191 | Project I | 2 | MCTE3250 OR MCTE3240 and PR ¹ | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217) and MATH3171 | AR |
| | MEIE3281 | Probability & Statistics for Engineers | 3 | MATH2107 | AR |
| | MCTE4255 | Mechatronics System Design | 3 | ECCE4227 and MCTE3250 and MCTE4185 | AR |
| | MCTE51xx | Program Elective 1 | 3 | | AE |
| | MCTE5210 | Real-time control and interfacing | 3 | MCTE4450 | AR |
| | Total | | 17 | | |
| Semester 10 Spring - 29 | MCTE5291 | Project II | 3 | MCTE5191 | AR |
| | ECCE5004 | Engineering Managements & Economics | 3 | STAT2103 or MEIE3281 | AR |
| | MCTE5420 | Pneumatic and Hydraulic Systems | 3 | MCTE3210 | AR |
| | MCTE5142 | Robotics | 3 | MEIE3122 | AR |
| | MCTE51xx | Program Elective 2 | 3 | | AE |
| | Total | | 15 | | |
| Summer -29 | MCTE51xx | Program Elective 3 | 3 | | AE |
| | MCTE51xx | Program Elective 4 | 3 | | AE |
| | Total | | 6 | | |

PR¹: Internal regulation [enforced by the MCE program]

Note: MCTE5191 will be available only in each fall semester.

Mechatronics Engineering Program

Study Plan for 2024 Cohort (SCHEME II – With Two Semester General Foundation Program) Co-Operative Scheme

| | Course | Course Title | Cr. | Pre- | Cat. |
|--------------------------|----------|--|-----|--|------|
| Semester 7 Fall-27 | MCTE4145 | Instrumentation & Measurement | 3 | MCTE3110 or MCTE3310 | AR |
| | MCTE4102 | Machine Design for Mechatronics | 3 | MCTE3230 | AR |
| | MCTE3210 | Electromechanical Sys. & Actuators | 3 | ECCE2017 or ECCE3016 | AR |
| | MCTE4150 | Modeling and Simulation | 3 | MATH4174 | AR |
| | ECCE4227 | Embedded Systems | 3 | (COMP2002 or ENGR2217) and ECCE3206 | AR |
| | MCTE3250 | Engineering System Design | 3 | MEIE3103 | AR |
| | Total | | 18 | | |
| Semester 8 Spring-28 | MCTE4210 | Power Electronics & Drives | 3 | MCTE3110 or MCTE3310 and MCTE3210 | AR |
| | MATH3171 | Lin. Alg. & Mult. Calc. for Eng. | 3 | (MATH2108) OR (MATH2109) | CR |
| | MEIE3122 | Machine Dynamics | 3 | MCTE2129 or MEIE2129 | AR |
| | MCTE4450 | Control Systems Engineering | 3 | MCTE4150 | AR |
| | MCTE4241 | Thermofluids | 3 | PHYS2108 and MATH2109 | AR |
| | Total | | 15 | | |
| Fall 28 Coop-Sem.1 | ENGR4007 | Industrial Training | 0 | | CR |
| | MCTE5001 | Co-op Training I | 0 | ENGR4007 | AE |
| Spring 29 Coop-Sem.2 | MCTE5002 | Co-op Training II | 6 | MCTE5001 | AE |
| | Total | | 6 | | |
| Semester 9 Fall-29 | MCTE5191 | Project I | 2 | MCTE3250 or MCTE3240 and PR ¹ | AR |
| | MCTE4255 | Mechatronics System Design | 3 | ECCE4227 and MCTE3250 or MCTE3240 and MCTE4145 | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217) and MATH3171 | |
| | | University Elective | 2 | | UE |
| | MCTE5210 | Real-time control and interfacing | 3 | MCTE4450 | AR |
| | Total | | 13 | | |
| Semester 10 Spring 30 | MCTE5291 | Project II | 3 | MCTE5191 | AR |
| | ECCE5004 | Engineering Managements & Economics | 3 | STAT2103 or MEIE3281 | AR |
| | MCTE5142 | Robotics | 3 | MEIE3122 | AR |
| | MCTE5420 | Pneumatic and Hydraulic Systems | 3 | MCTE3210 | AR |
| | MEIE3281 | Probability & Statistics for Engineers | 3 | MATH2107 | AR |
| | Total | | 15 | | |
| Summer 30 | MCTE51xx | Program Elective 1 | 3 | | AE |
| | MCTE51xx | Program Elective 2 | 3 | | AE |
| | Total | | 6 | | |

PR¹: Internal regulation [enforced by the MCE program]

Note: MCTE5191 will be available only in each fall semester.

Mechatronics Engineering Program

Mechatronics Engineering - Study Plan for Cohort 2024

LIST AT - UNIVERSITY ELECTIVES (6 Credits)

List of University Elective Courses Allowed for ENG students can be accessed by scanning the QR code shown below.



Mechatronics Engineering Program

Mechatronics Engineering - Study Plan for Cohort 2024

LIST B: COLLEGE REQUIREMENTS (32 Credits)

| Course Code | Course Title | Credit | Pre-Requisite |
|-------------|--|--------|--|
| CHEM1071 | General Chemistry for Engineering | 3 | |
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| ENGR4007 | Industrial Training | 0 | |
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering II | 3 | LANC2160 |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II for Science and Engineering | 3 | MATH2107 |
| MATH3171 | Linear Algebra & Multivariate Calculus for Engineers | 3 | MATH2109 or MATH2108 |
| MATH4174 | Differential Equations for Engineers | 3 | (LANC2161 AND MATH2108) OR (LANC2161 AND MATH2109) |
| PHYS2107 | Physics for Engineering I | 4 | |
| PHYS2108 | Physics for Engineering II | 4 | PHYS2107 OR PHYS2101 |
| Total | | 32 | |

Mechatronics Engineering Program

Mechatronics Engineering - Study Plan for Cohort 2024

LIST C: COLLEGE ELECTIVE (3 Credits)

| Course Code | Course Title | Credit | Pre-Requisite |
|----------------------------|---|--------|---------------|
| COMP2002 Or ENGR2217 | Introduction to Computer Programming for Engineers Or Programming for Engineers | 3 | |
| Total | | 3 | |

@ For the MCE program the course is, COMP2002 OR ENGR 2217.

Mechatronics Engineering Program

Mechatronics Engineering - Study Plan for Cohort 2024 LIST F: Major Requirements (77 Credits)

| Course Code | Course Title | Credit | Pre-Requisite / Co-req. * |
|--------------|--|-----------|--|
| ECCE2017 | Electric Circuit Analysis | 4 | MATH2107 |
| MCTE3310 | Electronics for Mechatronics | 3 | ECCE2017 or ECCE2016 |
| MCTE2129 | Engineering Mechanics | 3 | PHYS 2107 and MATH2107 |
| MCTE4145 | Instrumentation & Measurement | 3 | MCTE3110 or MCTE3310 |
| MCTE3230 | Properties and Strength of Materials | 3 | MCTE2129 or MEIE2129 |
| MEIE3281 | Probability & Statistics for Engineers | 3 | MATH2107 |
| MEIE3103 | Engineering Tools and Graphics | 2 | |
| MCTE4102 | Machine Design for Mechatronics | 3 | MCTE3230 |
| MCTE4185 | Signals & Systems for Mechatronics | 3 | ECCE2017 or ECCE3016 |
| MCTE3210 | Electromechanical Systems & Actuators | 3 | ECCE2017 or ECCE3016 |
| ECCE3206 | Digital Logic Design | 3 | |
| MCTE4210 | Power Electronics & Drives | 3 | MCTE3110 or MCTE3310 and MCTE3210 |
| MCTE4241 | Thermofluids | 3 | PHYS2108 and MATH2109 |
| ECCE4227 | Embedded Systems | 3 | (COMP2002 or ENGR2217) and ECCE3206 |
| ECCE5004 | Engineering Managements & Economics I | 3 | STAT2103 or MEIE3281 |
| MCTE4150 | Modeling & Simulation | 3 | MATH4174 |
| MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENG2217) and MATH3171 |
| MEIE3122 | Machine Dynamics | 3 | MCTE2129 or MEIE2129 |
| MCTE5191 | Project I | 2 | MCTE3250 OR MCTE3240, PR ¹ |
| MCTE3250 | Engineering System Design | 3 | MEIE3103 |
| MCTE5210 | Real-time control and interfacing | 3 | MCTE4450 |
| MCTE4450 | Control Systems Engineering | 3 | MCTE4150 |
| MCTE4255 | Mechatronics System Design | 3 | ECCE4227 and MCTE3250 or MCTE3240 and MCTE4145 |
| MCTE5420 | Pneumatic and Hydraulic Systems | 3 | MCTE3210 |
| MCTE5291 | Project II | 3 | MCTE5191 |
| MCTE5142 | Robotics | 3 | MEIE3122 |
| Total | | 77 | |

PR¹: Internal regulation [enforced by the MCE program]

Note: MCTE5290 will be available only in each fall semester.

Mechatronics Engineering Program

Mechatronics Engineering – Study Plan for Cohort 2024 List G: MAJOR ELECTIVES (12 CREDITS)

| Course Code | Course Title | Credit | Pre-requisite |
|-------------|---|--------|----------------------------------|
| MCTE5001 | Coop-Training I | 0 | ENGR4007 |
| MCTE5002 | Coop-Training II | 6 | MCTE5001 |
| ECCE5433 | Modern Control Systems | 3 | MCTE4450 or MCTE4250 |
| ECCE5453 | Mobile Robot Control | 3 | ECCE3206 |
| ECCE4436 | Industrial Control Systems | 3 | MCTE4450 or MCTE4250 |
| ECCE5008 | Project Management | 3 | ECCE5004 |
| ECCE5223 | Advanced Embedded Systems | 3 | ECCE4227 |
| ECCE5445 | Control System Design | 3 | MCTE4450 or MCTE4250 |
| ECCE5432 | Programmable Logic Controllers | 3 | ECCE3206 |
| ECCE4253 | Object Oriented Programming | 3 | COMP2002 |
| ECCE4255 | Applied Programming & Algorithms for Eng. | 3 | COMP2002 |
| ECCE5443 | Optimization Techniques in Eng. | 3 | MATH3171 |
| MEIE5101 | Engineering Vibration | 3 | MEIE3121 or MCTE2129 or MEIE2129 |
| MEIE5131 | Legged locomotion of robots and animals | 3 | MEIE3122 |
| MEIE5127 | Process Control | 3 | MEIE4122 or MEIE4171 or MCTE4450 |
| MEIE5122 | Applied Multi-body Dynamics | 3 | MEIE3121 or MCTE2129 or MEIE2129 |
| MEIE5146 | Renewable Energy | 3 | MEIE3142 or MEIE3159 or MCTE4230 |
| MEIE5180 | Nanotechnology | 3 | MEIE4161 or MCTE3230 |
| MEIE5182 | Fundamentals of Biomechanics | 3 | MEIE3102 and MEIE3121 |
| MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 or ECCE5004 |
| MEIE5106 | Pressure Vessel & Piping System Design | 3 | MEIE4102 or MCTE4102 |
| MEIE5110 | Applied Finite Element Methods | 3 | MEIE3102 or CIVL3086 or MCTE3230 |
| MEIE5162 | Corrosion Engineering | 3 | MCTE3230 |
| ECCE5229 | Embedded Real Time Systems | 3 | ECCE4227 |
| ECCE5293 | Embedded Vision Systems | 3 | ECCE4227 |
| ECCE4216 | Applied Machine Learning | 3 | ENGR2217 or COMP2002 |
| ECCE5219 | Intelligent Applications in Robotics and Drones | 3 | ECCE4227 |
| ECCE5231 | Industrial Networks and Operating Systems | 3 | ECCE4227 |
| MCTE5103 | Selected topics in robotics and control | 3 | MCTE4450 |



Degree and Study Plan

| | |
|------------|---------------------------------------|
| College | Engineering |
| Department | Mechanical and Industrial Engineering |
| Cohorts | 2024 |
| Degree | Bachelor of Engineering (B. Eng.) |
| Major | Mechanical Engineering (ME) |

Summary of Credits

| Credit Category | | Courses | Total credits |
|-------------------------|----|--|---------------|
| University Requirements | UR | General Foundation Program | |
| | | Arabic (2 credits) | |
| | | Contemporary Omani State and People (2 credits) | |
| | | Oman and Islamic Civilization or Islamic Culture (2 credits) | 06 |
| University Electives | UE | See list A | 06 |
| College Requirements | CR | See list B | 32 |
| College Electives | CE | See list C | 03 |
| Department Requirements | DR | See list D | 11 |
| Major Requirements | AR | See list E | 63 |
| Major Electives | AE | See list F | 15 |
| Total Credits | | | 136 |

For reference contact: Dr. Nasr Al-Hinai

Ext. 1352

HoD:

Date: 23-4-2024

Dean's Office:

Date: 02/06/2024

Admission and Registration:

Date:

Important Information

Student is to follow one of the three schemes of the Degree Plan:

Scheme I is for students who completed the Foundation Program in one regular semester (Fall).

Scheme II is for students who completed the Foundation Program in two regular semesters (Fall and Spring).

Cooperative Training (COOP) Scheme is optional. It is designed for students who are following Scheme I or II and willing to take a one-year COOP program in semesters 9 and 10.

Students are advised to regularly check the most updated degree plan on the Department's webpage.

This degree plan is last updated on May 21st, 2024.

Course description can be checked on:

<https://www.squ.edu.om/engineering/Academic/Undergraduate-Programs/Mechanical-Engineering>

Department of Mechanical and Industrial Engineering

Mechanical Engineering Study Plan

Cohort 2024 (Scheme I)

| Scheme I FP1 Fall 2024 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|------------------------------|----------------------|----------------------------|----------|------------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total Credits | | 0 | | |

| Scheme I Semester 1 Spring 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|----------------------|--|-----------|------------------------|------|
| | HIST1010 or ISLM1010 | Oman and Islamic Civilization or Islamic Culture | 2 | | UR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total Credits | | 14 | | |

| Scheme I Semester 2 Fall 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|----------------------|-------------------------------------|-----------|------------------------|------|
| | | University Elective | 2 | | UE |
| | ARAB1060** | Arabic | 2 | | UR |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Eng. | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | Total Credits | | 16 | | |

** For non-Arabic speaking or non-Omanis students, please refer to Appendix A.

| Scheme I Semester 3 Spring 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|----------------------|--|-----------|------------------------|------|
| | | College Elective | 3 | | CE |
| | MEIE3281 | Probability and Statistics for Engineers | 3 | MATH2107 | DR |
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| | MEIE3100 | Engineering Mechanics | 3 | PHYS2107, MATH2107 | AR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | DR |
| | Total Credits | | 15 | | |

| Scheme I Semester 4 Fall 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|----------------------|-----------------------------------|-----------|------------------------|------|
| | MEIE3102 | Solid Mechanics | 3 | MEIE3100 | AR |
| | MEIE3109 | Product Design | 3 | MEIE3103 | AR |
| | MEIE3141 | Thermodynamics I | 3 | PHYS2108* | AR |
| | MEIE3162 | Materials Science and Engineering | 3 | CHEM1071 | AR |
| | MEIE3181 | Electromechanical Systems | 3 | MATH2107, PHYS2108 | AR |
| | Total Credits | | 15 | | |

| Scheme I Semester 5 Spring 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|-------------|--|-----------|----------------------------------|------|
| | MATH3171 | Linear Algebra and Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| | MEIE3122 | Machine Dynamics | 3 | MEIE3100 | AR |
| | MEIE3142 | Thermodynamics II | 3 | MEIE3141 | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217), MATH3171 | AR |
| | MEIE4126 | Instrumentation and Measurement | 3 | MEIE3181, MEIE3281 | AR |
| Total Credits | | | 15 | | |

| Scheme I Semester 6 Fall 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|-------------|--------------------------------------|-----------|------------------------|------|
| | MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| | MEIE4104 | Design of Machine Elements | 3 | MEIE3102, MEIE3103 | AR |
| | MEIE4141 | Fluid Mechanics | 3 | PHY2108 | AR |
| | MEIE4162 | Manufacturing Processes | 3 | MEIE3162 | AR |
| | | University Elective | 2 | | UE |
| Total Credits | | | 14 | | |

| Scheme I Semester 7 Spring 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|-------------|---------------------------------|-----------|----------------------------------|------|
| | MEIE4122 | Engineering Systems and Control | 3 | MEIE3100, MATH4174 | AR |
| | MEIE4144 | Heat Transfer | 3 | MEIE4141, MEIE3141 | AR |
| | MEIE4188 | Data Analytics in Engineering | 2 | MEIE3281, (ENGR2217 or COMP2002) | AR |
| | MEIE4285 | Engineering Economics | 3 | MATH2107 | DR |
| | MEIE5149 | Capstone Design | 3 | MEIE3109, MEIE4104 | AR |
| Total Credits | | | 14 | | |

| Scheme I Summer 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|----------------------------|-------------|---------------------|----------|------------------------|------|
| | ENGR4007 | Industrial Training | 0 | | CR |
| Total Credits | | | 0 | | |

| Scheme I Semester 8 Fall 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------------|-------------|----------------------------------|-----------|------------------------|------|
| | MEIE4123 | Control Systems Design | 2 | MEIE4122 | AR |
| | MEIE4163 | Modern Materials and Manufacture | 3 | MEIE4162 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5193* | Project I | 2 | MEIE4104, MEIE4144 | AR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| Total Credits | | | 16 | | |

* MEIE5193 is offered in Fall semesters ONLY.

| Scheme I Semester 9 Spring 2029 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------------|-------------|---------------------------|-----------|------------------------------|------|
| | | University Elective | 2 | | UE |
| | MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 | AR |
| | MEIE5194 | Project II | 3 | MEIE5193 | AR |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | MEIE5xxx | Major Elective 4 | 3 | | AE |
| | MEIE5xxx | Major Elective 5 | 3 | | AE |
| Total Credits | | | 17 | | |

Department of Mechanical and Industrial Engineering

Mechanical Engineering Study Plan

Cohort 2024 (Scheme II)

| Scheme II FP1 Fall 2024 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-------------------------------|----------------------|----------------------------|----------|------------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total Credits | | 0 | | |

| Scheme II FP2 Spring 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------------|----------------------|----------------------------|----------|------------------------|------|
| | | General Foundation Program | 0 | | UR |
| | Total Credits | | 0 | | |

| Scheme II Semester 1 Fall 2025 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------------|----------------------|--|-----------|------------------------|------|
| | HIST1010 or ISLM1010 | Oman and Islamic Civilization or Islamic Culture | 2 | | UR |
| | ENGR1501 | Introduction to Engineering | 1 | | CR |
| | ENGR1600 | Workshop I | 1 | | CR |
| | CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| | LANC2160 | English for Engineering I | 3 | | CR |
| | MATH2107 | Calculus I | 4 | | CR |
| | Total Credits | | 14 | | |

| Scheme II Semester 2 Spring 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|----------------------|-------------------------------------|-----------|------------------------|------|
| | | University Elective | 2 | | UE |
| | ARAB1060** | Arabic | 2 | | UR |
| | SOCY1005** | Contemporary Omani State and People | 2 | | UR |
| | LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| | MATH2109 | Calculus II for Science and Eng. | 3 | MATH2107 | CR |
| | PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| | Total Credits | | 16 | | |

** For non-Arabic speaking or non-Omanis students, please refer to Appendix A.

| Scheme II Summer 2026*** | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------|----------------------|---------------------|----------|------------------------|------|
| | | University Elective | 2 | | UE |
| | | College Elective | 3 | | CE |
| | Total Credits | | 5 | | |

*** Offering the summer semester is subject to the availability of the courses.

| Scheme II Semester 3 Fall 2026 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------------|----------------------|--|-----------|------------------------|------|
| | PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| | MEIE3100 | Engineering Mechanics | 3 | PHYS2107, MATH2107 | AR |
| | MEIE3103 | Engineering Tools and Graphics | 2 | | DR |
| | MEIE3141 | Thermodynamics I | 3 | PHYS2108* | AR |
| | MEIE3281 | Probability and Statistics for Engineers | 3 | MATH2107 | DR |
| | Total Credits | | 15 | | |

| Scheme II Semester 4 Spring 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|----------------------|--|-----------|------------------------|------|
| | MATH3171 | Linear Algebra and Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| | MEIE3102 | Solid Mechanics | 3 | MEIE3100 | AR |
| | MEIE3109 | Product Design | 3 | MEIE3103 | AR |
| | MEIE3142 | Thermodynamics II | 3 | MEIE3141 | AR |
| | MEIE3162 | Materials Science and Engineering | 3 | CHEM1071 | AR |
| | MEIE3181 | Electromechanical Systems | 3 | MATH2107, PHYS2108 | AR |
| | Total Credits | | 18 | | |

| Scheme II Semester 5 Fall 2027 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------------|----------------------|--------------------------------------|-----------|----------------------------------|------|
| | MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| | MEIE3122 | Machine Dynamics | 3 | MEIE3100 | AR |
| | MEIE4104 | Design of Machine Elements | 3 | MEIE3102, MEIE3103 | AR |
| | MEIE4141 | Fluid Mechanics | 3 | PHYS2108 | AR |
| | MEIE4162 | Manufacturing Processes | 3 | MEIE3162 | AR |
| | MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217), MATH3171 | AR |
| | Total Credits | | 18 | | |

| Scheme II Semester 6 Spring 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|----------------------|----------------------------------|-----------|----------------------------------|------|
| | MEIE4122 | Engineering Systems and Control | 3 | MEIE3100, MATH4174 | AR |
| | MEIE4126 | Instrumentation and Measurements | 3 | MEIE3181, MEIE3281 | AR |
| | MEIE4144 | Heat Transfer | 3 | MEIE4141, MEIE3141 | AR |
| | MEIE4188 | Data Analytics in Engineering | 2 | MEIE3281, (ENGR2217 or COMP2002) | AR |
| | MEIE4285 | Engineering Economics | 3 | MATH2107 | DR |
| | MEIE5149 | Capstone Design | 3 | MEIE3109, MEIE4104 | AR |
| | Total Credits | | 17 | | |

| Scheme II Summer 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|-----------------------------|----------------------|---------------------|----------|------------------------|------|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | Total Credits | | 0 | | |

| Scheme II Semester 7 Fall 2028 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--------------------------------------|----------------------|----------------------------------|-----------|------------------------|------|
| | MEIE4123 | Control Systems Design | 2 | MEIE4122 | AR |
| | MEIE4163 | Modern Materials and Manufacture | 3 | MEIE4162 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5193* | Project I | 2 | MEIE4104, MEIE4144 | AR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| | Total Credits | | 16 | | |

* MEIE5193 is offered in Fall semesters ONLY.

| Scheme II Semester 8 Spring 2029 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|--|----------------------|---------------------------|-----------|------------------------------|------|
| | | University Elective | 2 | | UE |
| | MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 | AR |
| | MEIE5194 | Project II | 3 | MEIE5193 | AR |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| | MEIE5xxx | Major Elective 4 | 3 | | AE |
| | MEIE5xxx | Major Elective 5 | 3 | | AE |
| | Total Credits | | 17 | | |

Department of Mechanical and Industrial Engineering

Mechanical Engineering Study Plan

Cohort 2024 (COOP Scheme)

- The cooperative Training (COOP) Scheme is **optional**.
- **Scheme I** Students can enroll in this scheme starting from Semester 8 (Fall 2028) after the foundation program.
- **Scheme II** students can enroll in this scheme starting from Semester 7 (Fall 2028) after the foundation program.
- For enrollment terms, conditions, and registration procedure, please consult the Head of Department and the Assistant Dean for Training and Community Services Offices.

| COOP Scheme Semester 1 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------|-------------|---|----------|------------------------|------|
| | ENGR4007 | Industrial Training | 0 | | CR |
| | MEIE5001 | Mechanical Program Cooperative Training I | 0 | ENGR4007* | AE |
| Total Credits | | | 0 | | |

| COOP Scheme Semester 2 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------|-------------|--|----------|------------------------|------|
| | MEIE5002 | Mechanical Program Cooperative Training II | 6 | MEIE5001 | AE |
| Total Credits | | | 6 | | |

| COOP Scheme Semester 3 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------|-------------|----------------------------------|-----------|------------------------|------|
| | MEIE4123 | Control Systems Design | 2 | MEIE4122 | AR |
| | MEIE4163 | Modern Materials and Manufacture | 3 | MEIE4162 | AR |
| | MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 | DR |
| | MEIE5193* | Project I | 2 | MEIE4104, MEIE4144 | AR |
| | MEIE5xxx | Major Elective 1 | 3 | | AE |
| Total Credits | | | 13 | | |

* MEIE5193 is offered in Fall semesters ONLY.

| COOP Scheme Semester 4 | Course Code | Course Title | Cr. | Pre-req./Co-requisite* | Cat. |
|---------------------------|-------------|---------------------------|-----------|------------------------------|------|
| | | University Elective | 2 | | UE |
| | MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 | AR |
| | MEIE5194 | Project II | 3 | MEIE5193 | AR |
| | MEIE5xxx | Major Elective 2 | 3 | | AE |
| | MEIE5xxx | Major Elective 3 | 3 | | AE |
| Total Credits | | | 14 | | |

Degree Plan**Cohort 2024****Appendix A****University Requirements for Non-Arabic or Non-Oman Students**

| No. | Cohorts 2018 and before | Credits | Cohorts 2018 and after | Credits | Notes |
|-----|-------------------------|----------|------------------------|---------|---|
| 1 | ARAB1001 | 3 | ARAB1060 | 2 | |
| 2 | SOCY1001 | 1 | SOCY1005 | 2 | For Omanis Only |
| 3 | -- | -- | SOCY1007 | 2 | For Non-Omanis |
| 4 | | ARAB1019 | | 3 | For non-Arabic Speaking Students. Offered only in Fall semesters |

Notes:

- For the courses (SOCY1005, SOCY1007, HIST1010), the course materials and exams are in English for non-Arabic speaking students.
- Currently, there is no Arabic course with 2 credits for the non-Arabic speaking students of cohorts 2018 and after. Those students have to register the ARAB1019 as shown in the table above.

Department of Mechanical and Industrial Engineering**Degree Plan****Cohort 2024****LIST A****University Electives (UE) 6 Credits**

Engineering students must register for a humanity or social course (non-scientific and non-linguistic course) from any college as a University Elective. The list of University Elective Courses allowed for Engineering students can be found via the following link:



Department of Mechanical and Industrial Engineering
Degree Plan
Cohort 2024
LIST B
College Requirements (CR) 32 Credits

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite * |
|--------------|--|-----------|--------------------------------|
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering II | 3 | LANC2160 |
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II for Science and Engineering | 3 | MATH 2107 |
| MATH3171 | Linear Algebra and Multivariate Calculus | 3 | MATH2109 |
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* |
| PHYS2108 | Physics of Engineering II | 4 | PHYS2107 |
| CHEM1071 | General Chemistry for Engineering | 3 | |
| ENGR4007 | Industrial Training | 0 | |
| Total | | 32 | |

Department of Mechanical and Industrial Engineering
Degree Plan
Cohort 2024
LIST C
College Electives (CE) 3 Credits

The course will be offered from the following courses subject to availability

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite* |
|-------------|--|---------|-------------------------------|
| COMP2002 | Introduction to Computer Programming for Engineers | 3 | |
| ENGR2217 | Programming for Engineers | 3 | |

Department of Mechanical and Industrial Engineering
Degree Plan
Cohort 2024
LIST D
Department Requirements (DR) 11 Credits

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite* |
|--------------|--|-----------|-------------------------------|
| MEIE3281 | Probability and Statistics for Engineers | 3 | MATH2107 |
| MEIE4285 | Engineering Economics | 3 | MATH2107 |
| MEIE3103 | Engineering Tools and Graphics | 2 | |
| MEIE5288 | Innovation and Entrepreneurship | 3 | MEIE4285 |
| Total | | 11 | |

Department of Mechanical and Industrial Engineering
Degree Plan
Cohort 2024
LIST E
Major Requirements (AR) 63 Credits

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite* |
|--------------|------------------------------------|-----------|---|
| MEIE3100 | Engineering Mechanics | 3 | PHYS2107 |
| MEIE3102 | Solid Mechanics | 3 | MEIE3100 |
| MEIE3109 | Product Design | 3 | MEIE3103 |
| MEIE3122 | Machine Dynamics | 3 | MEIE3100 |
| MEIE3141 | Thermodynamics I | 3 | PHYS2108* |
| MEIE3142 | Thermodynamics II | 3 | MEIE3141 |
| MEIE3162 | Materials Science and Engineering | 3 | CHEM1071 |
| MEIE3181 | Electromechanical Systems | 3 | MATH2107, PHYS2108 |
| MEIE4104 | Design of Machine Elements | 3 | MEIE3100, MEIE3103 |
| MEIE4122 | Engineering Systems and Control | 3 | MEIE3100, MATH4174 |
| MEIE4123 | Control Systems Design | 2 | MEIE4122 |
| MEIE4126 | Instrumentation and Measurements | 3 | MEIE3181, MEIE3281 |
| MEIE4141 | Fluid Mechanics | 3 | PHYS2108 |
| MEIE4144 | Heat Transfer | 3 | MEIE3141, MEIE4141 |
| MEIE4162 | Manufacturing Processes | 3 | MEIE3162 |
| MEIE4163 | Modern Materials and Manufacturing | 3 | MEIE4162 |
| MEIE4183 | Numerical Methods for Engineers | 3 | (COMP2002 or ENGR2217), MATH3171 |
| MEIE4188 | Data Analytics in Engineering | 2 | MEIE3281 and (ENGR2217 or COOMP2002) |
| MEIE5145 | Design of Thermal Systems | 3 | MEIE3142, MEIE4144, MEIE4183 |
| MEIE5149 | Capstone Design | 3 | MEIE3109, MEIE4104 |
| MEIE5193 | Project I | 2 | MEIE4104, MEIE4144 |
| MEIE5194 | Project II | 3 | MEIE5193 |
| Total | | 63 | |

Department of Mechanical and Industrial Engineering
Degree Plan
Cohort 2024
LIST F
Major Electives (AE) 15 Credits

NOTES

- One 4000 or 5000 level course can be taken from another engineering program with the approval of the academic advisor and HoD.
 - Students of Scheme I or II should register for FIVE elective courses.
- Students of the COOP Scheme should register: Cooperative Training courses (MEIE5001 and MEIE5002) and THREE elective courses.
- The elective courses will be offered from the following and additional courses might be offered subject to availability.

| Course Code | Course Title | Credits | Pre-requisite / Co-requisite * |
|-------------|--|---------|--|
| MEIE5001 | Mechanical Program Cooperative Training I | 0 | ENGR4007* |
| MEIE5002 | Mechanical Program Cooperative Training II | 6 | MEIE5001 |
| MEIE5013 | Refrigeration and Air Conditioning | 3 | MEIE4144, MEIE3142 |
| MEIE5128 | Theory and Practice of Rotor Dynamics | 3 | MEIE3122 |
| MEIE5019 | Internal Combustion Engines and Control | 3 | MEIE3142 |
| MEIE5101 | Engineering Vibration | 3 | MEIE3100 |
| MEIE5106 | Pressure Vessel and Piping System Design | 3 | MEIE4104 |
| MEIE5110 | Applied Finite Element Methods | 3 | MEIE3102 |
| MEIE5121 | Modeling and Simulation of Engineering Systems | 3 | MATH4174 |
| MEIE5122 | Applied Multibody Dynamics | 3 | MEIE3122 |
| MEIE5124 | Condition Monitoring and Diagnosis | 3 | MEIE3122 |
| MEIE5127 | Analysis and Design of Control Systems | 3 | MEIE4122 or MCTE4450 |
| MEIE5129 | System Models and Identification | 3 | MEIE3281 |
| MEIE5130 | Mechatronics Systems and Applications | 3 | MEIE4126, MEIE4104 |
| MEIE5131 | Legged Locomotion of Robots and Animals | 3 | MEIE3122 |
| MEIE5132 | Smart Materials and Structures | 3 | MEIE4126 or MCTE4145 |
| MEIE5141 | Solar Energy Systems | 3 | MEIE4144 |
| MEIE5142 | Solar Thermal Processes | 3 | MEIE4144 |
| MEIE5146 | Renewable Energy | 3 | MEIE3142 or MCTE4230 |
| MEIE5147 | Energy Conservation and Management | 3 | MEIE3141 |
| MEIE5148 | Desalination | 3 | MEIE4144 |
| MEIE5151 | Fundamentals of Turbomachinery | 3 | MEIE3142, MEIE4141 |
| MEIE5152 | Fundamental of Thermal Energy Storage Sys. | 3 | MEIE3142 |
| MEIE5162 | Corrosion Engineering | 3 | MEIE4162 |
| MEIE5165 | Introduction to Fracture Mechanics | 3 | MEIE3162, (MEIE3102 or MCTE3230) |
| MEIE5166 | Introduction to Nanotechnology Engineering | 3 | MEIE4162 |
| MEIE5167 | Mechanics of Composite Materials | 3 | MEIE3162, (MEIE3102 or MCTE3230) |
| MEIE5168 | Introduction to Polymers | 3 | MEIE3161 or MEIE3162 or MEIE4263 |
| MEIE5169 | Fundamentals of Sustainable Engineering | 3 | MEIE4161, MEIE4162, MEIE4262, MEIE4163 |
| MEIE5182 | Fundamentals of Biomechanics | 3 | MEIE3102, MEIE3100 |
| MEIE5183 | Emerging Technologies in ME | 3 | MEIE4188 or MEIE4288 |
| MEIE5184 | Bioinspired Design for Engineers | 3 | |
| MEIE5190 | Special Topics | 3 | |
| MEIE5264 | CAD/CAM | 3 | MEIE3102, MEIE3103 |
| MEIE5233 | Maintenance and Reliability Engineering | 3 | MEIE3281 |
| MEIE5287 | Project Management | 3 | MEIE4161 |



SULTAN QABOOS UNIVERSITY



Degree and Study Plan

College ENGINEERING
Department PETROLEUM AND CHEMICAL ENGINEERING
Cohort **2024**
Degree BACHELOR OF ENGINEERING
Major PETROLEUM AND NATURAL GAS ENGINEERING

| SUMMARY OF CREDITS: | | Cr. |
|--|---|------------|
| General Foundation Program | | 0 |
| University Requirements (UR) | | 6 |
| Arabic | 2 | |
| Oman: State and People | 2 | |
| Oman & Islamic Civilization or Islamic Culture | 2 | |
| University Electives (UE) | | 6 |
| See List A | | |
| College Requirements (CR) | | 32 |
| See list B | | |
| College Electives (CE) | | 3 |
| See list C | | |
| Department Requirements (DR) | | 23 |
| See list D | | |
| Department Electives (DE) | | 0 |
| See list E | | |
| Major Requirements (AR) | | 54 |
| See list F | | |
| Major Electives (AE) | | 12 |
| See list G | | |
| TOTAL | | 136 |

For reference contact: HoD

Ext. 1318

HoD





Date: 29/05/2024

Dean's Office

Date 01/06/2024

Admission and Registration

Date

Department of Petroleum and Chemical Engineering
Petroleum and Natural Gas Engineering Program
Study Plan for Cohort 2024 (Scheme I: One Semester of Foundation)

IMPORTANT: **Bold font** courses are offered ONCE a year in the semesters they are listed in.

SEMESTER 1 [FALL 2024]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|----------------------------|----------|-------------------|------|
| | General Foundation Program | 0 | | UR |
| Total Credits | | 0 | | |

SEMESTER 2 [SPRING 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------------------|-----------|-------------------|------|
| HIST 1010 | Oman & Islamic Civilization | 2 | | UR |
| ISLM1010 | or Islamic Culture | | | |
| LANC2160 | English for Engineering I | 3 | | CR |
| CHEM1071 | General Chemistry for Engineers | 3 | | CR |
| ENGR1501 | Introduction to Engineering | 1 | | CR |
| ENGR1600 | Workshop I | 1 | | CR |
| MATH2107 | Calculus I | 4 | | CR |
| Total Credits | | 14 | | |

SEMESTER 3 [FALL 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------------------------|-----------|-------------------|------|
| | University Elective | 2 | | UE |
| ARAB1060 | Arabic | 2 | | UR |
| LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| SOCY1005# | Oman: State and People | 2 | | UR |
| MATH2109 | Calculus II for Science & Engineering | 3 | MATH2107 | CR |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| Total Credits | | 16 | | |

* Non Omani students should take SOCY1007

SEMESTER 4 [SPRING 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-------------------------|--------------------------------------|-----------|--------------------|------|
| | University Elective | 2 | | UE |
| ENGR2217 or COMP2002 | Programming for Engineers | 3 | | CE |
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| MEIE3203 | Introductory Applied Mechanics | 3 | PHYS2107 | AR |
| Total Credits | | 15 | | |

SEMESTER 5 [FALL 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|--|-----------|--------------------|------|
| MATH3171 | Linear Algebra and Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| CHPE3102 | Engineering Thermodynamics | 3 | CHEM1071, MATH2107 | DR |
| ERSC2101 | Introduction to Geology I | 4 | | AR |
| PNGE3111 | Chemistry for Petroleum Engineering | 3 | CHEM1071 | AR |
| PNGE3112 | Introduction to Petroleum and Natural Gas Engineering | 2 | | AR |
| Total Credits | | 15 | | |

SEMESTER 6 [SPRING 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|---------------------------------|-----------|--------------------------------|------|
| CHPE3103 | Professional Practice | 2 | LANC2161 | DR |
| CHPE3302 | Fluid Flow | 3 | CHPE3102 | DR |
| PNGE3202 | Numerical Methods | 3 | MATH3171, ENGR2217 or COMP2002 | DR |
| ERSC3081 | Petroleum Geology for Engineers | 3 | ERSC2101, LANC2161 | AR |
| PNGE3212 | Rock and Fluid Properties | 3 | PNGE3112, PNGE3111 | AR |
| Total Credits | | 14 | | |

SEMESTER 7 [FALL 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|--------------------------|-----------|---------------------|------|
| | University Elective | 2 | | UE |
| PNGE4101 | Statistics for Engineers | 3 | MATH2107 | DR |
| PNGE3312 | Heat and Mass Transfer | 3 | CHPE3302, MATH4174 | DR |
| PNGE4212 | Drilling Technology | 3 | MEIE3203, PNGE4312* | AR |
| PNGE4312 | Drilling Technology Lab | 1 | PNGE4212* | AR |
| PNGE4412 | Reservoir Engineering | 3 | PNGE3212, ERSC3081 | AR |
| Total Credits | | 15 | | |

SEMESTER 8 [SPRING 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|----------------------|-----------|--|------|
| GEOP3041 | General Geophysics | 3 | PHYS2107, MATH2107, ERSC2101, LANC2161 | AR |
| PNGE5103 | Engineering Economy | 3 | MATH 2107 | DR |
| PNGE4512 | Formation Evaluation | 3 | PNGE3212 | AR |
| PNGE4612 | Well Testing | 3 | PHYS2108, PNGE4412 | AR |
| PNGE4712 | Reservoir Simulation | 3 | PNGE4412, PNGE3202 | AR |
| Total Credits | | 15 | | |

[SUMMER 2028] "ENGR4007 is not required for COOP students"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------|----------|---------------------------|------|
| ENGR4007 | Industrial Training | 0 | Assistant Dean's Approval | CR |
| Total Credits | | 0 | | |

COOP I [FALL] "Cooperative Training is optional; students will be selected on competitive basis"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|------------------------|----------|---------------------------|------|
| PNGE5001 | Cooperative Training I | 0 | Assistant Dean's Approval | AE |
| Total Credits | | 0 | | |

COOP II [SPRING]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-------------------------|----------|-------------------|------|
| PNGE5002 | Cooperative Training II | 6 | PNGE5001 | AE |
| Total Credits | | 6 | | |

SEMESTER 9 [FALL 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-------------------------------------|-----------|--|------|
| | Major Elective I** | 3 | | AE |
| | Major Elective II** | 3 | | AE |
| PNGE5102 | Health, Safety and Environment | 3 | CHPE3103 | AR |
| PNGE5112 | Production Engineering | 3 | PNGE4412 | AR |
| PNGE5115 | Project I | 2 | PNGE4212, PNGE4512, PNGE4612, PNGE4712, CHPE3103 | AR |
| PNGE5212 | Secondary and Enhanced Oil Recovery | 3 | PNGE4412, CHPE3402 | AR |
| Total Credits | | 17 | | |

SEMESTER 10 [SPRING 2029]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|---------------------------------|-----------|-------------------|------|
| | Major Elective III** | 3 | | AE |
| | Major Elective IV** | 3 | | AE |
| PNGE5203 | Management for PCE | 3 | PNGE5103 | DR |
| PNGE5215 | Project II | 3 | PNGE5115 | AR |
| PNGE5412 | Field Processing of Natural Gas | 3 | PNGE5112 | AR |
| Total Credits | | 15 | | |

** COOP students need to take two Major Electives.

Department of Petroleum and Chemical Engineering
Petroleum and Natural Gas Engineering Program
Study Plan for Cohort 2024 (Scheme II: Two Semesters of Foundation)

IMPORTANT: **Bold font** courses are offered ONCE a year in the semesters they are listed in.

SEMESTER 1 [FALL 2024]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|----------------------------|----------|-------------------|------|
| | General Foundation Program | 0 | | UR |
| Total Credits | | 0 | | |

SEMESTER 2 [SPRING 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|----------------------------|----------|-------------------|------|
| | General Foundation Program | 0 | | UR |
| Total Credits | | 0 | | |

SEMESTER 3 [FALL 2025]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-----------------------------------|-----------|-------------------|------|
| SOCY1005# | Oman: State and People | 2 | | UR |
| LANC2160 | English for Engineering I | 3 | | CR |
| CHEM1071 | General Chemistry for Engineering | 3 | | CR |
| ENGR1501 | Introduction to Engineering | 1 | | CR |
| ENGR1600 | Workshop I | 1 | | CR |
| MATH2107 | Calculus I | 4 | | CR |
| Total Credits | | 14 | | |

Non Omani students should take SOCY1007

SEMESTER 4 [SPRING 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------------------------|-----------|-------------------|------|
| | University Elective | 2 | | UE |
| ARAB1060 | Arabic | 2 | | UR |
| LANC2161 | English for Engineering II | 3 | LANC2160 | CR |
| HIST1010 | Oman & Islamic Civilization or | 2 | | UR |
| ISLM1010 | Islamic Culture | | | |
| MATH2109 | Calculus II for Science & Engineering | 3 | MATH2107 | CR |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* | CR |
| Total Credits | | 16 | | |

[SUMMER 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-------------------------|---------------------------|----------|-------------------|------|
| | University Elective | 2 | | UE |
| ENGR2217 or COMP2002 | Programming for Engineers | 3 | | CE |
| Total Credits | | 5 | | |

SEMESTER 5 [FALL 2026]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|--|-----------|--------------------|------|
| MATH3171 | Linear Algebra and Multivariate Calculus for Engineers | 3 | MATH2109 | CR |
| CHPE3102 | Engineering Thermodynamics | 3 | CHEM1071, MATH2107 | DR |
| ERSC2101 | Introduction to Geology I | 4 | | AR |
| PNGE3111 | Chemistry for Petroleum Engineering | 3 | CHEM1071 | AR |
| PNGE3112 | Introduction to Petroleum and Natural Gas Engineering | 2 | | AR |
| Total Credits | | 15 | | |

SEMESTER 6 [SPRING 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|--------------------------------------|-----------|--------------------------------|------|
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 | CR |
| CHPE3103 | Professional Practice | 2 | LANC2161 | DR |
| MEIE3203 | Introductory Applied Mechanics | 3 | PHYS2107 | AR |
| PNGE3202 | Numerical Methods | 3 | MATH3171, ENGR2217 or COMP2002 | DR |
| ERSC3081 | Petroleum Geology for Engineers | 3 | ERSC2101, LANC2161 | AR |
| PNGE3212 | Rock and Fluid Properties | 3 | PNGE3112, PNGE3111 | AR |
| Total Credits | | 17 | | |

[SUMMER 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------|----------|-------------------|------|
| | University Elective | 2 | | UE |
| CHPE3302 | Fluid Flow | 3 | CHPE3102 | DR |
| Total Credits | | 5 | | |

SEMESTER 7 [FALL 2027]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|----------------------------|-----------|---------------------|------|
| PHYS2108 | Physics for Engineering II | 4 | PHYS2107 | CR |
| PNGE3312 | Heat and Mass Transfer | 3 | CHPE3302, MATH4174 | DR |
| PNGE4101 | Statistics for Engineers | 3 | MATH2107 | DR |
| PNGE4212 | Drilling Technology | 3 | MEIE3203, PNGE4312* | AR |
| PNGE4312 | Drilling Technology Lab | 1 | PNGE4212* | AR |
| PNGE4412 | Reservoir Engineering | 3 | PNGE3212, ERSC3081 | AR |
| Total Credits | | 17 | | |

SEMESTER 8 [SPRING 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|----------------------|-----------|--|------|
| GEOP3041 | General Geophysics | 3 | PHYS2107, MATH2107, ERSC2101, LANC2161 | AR |
| PNGE4512 | Formation Evaluation | 3 | PNGE3212 | AR |
| PNGE4612 | Well Testing | 3 | PHYS2108, PNGE4412 | AR |
| PNGE4712 | Reservoir Simulation | 3 | PNGE4412, PNGE3202 | AR |
| PNGE5103 | Engineering Economy | 3 | MATH2107 | DR |
| Total Credits | | 15 | | |

[SUMMER 2028] "ENGR4007 is not required for COOP students"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|---------------------|----------|---------------------------|------|
| ENGR4007 | Industrial Training | 0 | Assistant Dean's Approval | CR |
| Total Credits | | 0 | | |

COOP I [FALL] "Cooperative Training is optional; students will be selected on competitive basis"

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|------------------------|----------|---------------------------|------|
| PNGE5001 | Cooperative Training I | 0 | Assistant Dean's Approval | AE |
| Total Credits | | 0 | | |

COOP II [SPRING]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|---------------|-------------------------|----------|-------------------|------|
| PNGE5002 | Cooperative Training II | 6 | PNGE5001 | AE |
| Total Credits | | 6 | | |

SEMESTER 9 [FALL 2028]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|-------------------------------------|-----------|--|------|
| | Major Elective I** | 3 | | AE |
| | Major Elective II** | 3 | | AE |
| PNGE5102 | Health, Safety and Environment | 3 | CHPE3103 | AR |
| PNGE5112 | Production Engineering | 3 | PNGE4412 | AR |
| PNGE5115 | Project I | 2 | PNGE4212, PNGE4512, PNGE4612, PNGE4712, CHPE3103 | AR |
| PNGE5212 | Secondary and Enhanced Oil Recovery | 3 | PNGE4412, CHPE3402 | AR |
| Total Credits | | 17 | | |


SEMESTER 10 [SPRING 2029]

| Course Code | Course Title | Cr. | Pre-req./Co-req.* | Cat. |
|-----------------|---------------------------------|-----------|-------------------|------|
| | Major Elective III** | 3 | | AE |
| | Major Elective IV** | 3 | | AE |
| PNGE5203 | Management for PCE | 3 | PNGE5103 | DR |
| PNGE5215 | Project II | 3 | PNGE5115 | AR |
| PNGE5412 | Field Processing of Natural Gas | 3 | PNGE5112 | AR |
| Total Credits | | 15 | | |

**COOP students need to take two Major Electives.

Department of Petroleum and Chemical Engineering
Petroleum and Natural Gas Engineering Program
Degree Plan for Cohort 2024

LIST A – UNIVERSITY ELECTIVES (6 Credits)

| | |
|--|--|
| <p>List of allowed University Electives that can be taken by Engineering Students</p> <p><i>"This list will continuously be updated by the Assistant Dean's office for new university electives"</i></p> |  <p>https://www.squ.edu.om/engineering/Students/University-Elective-courses-allowed-for-Engineering-students</p> |
|--|--|

LIST B: COLLEGE REQUIREMENTS (32 credits)

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|--|-----------|---------------------------|
| ENGR1501 | Introduction to Engineering | 1 | |
| ENGR1600 | Workshop I | 1 | |
| LANC2160 | English for Engineering I | 3 | |
| LANC2161 | English for Engineering II | 3 | LANC 2160 |
| MATH2107 | Calculus I | 4 | |
| MATH2109 | Calculus II for Science & Engineering | 3 | MATH 2107 |
| MATH3171 | Linear Algebra & Multivariate Calculus for Engineers | 3 | MATH2109 |
| MATH4174 | Differential Equations for Engineers | 3 | MATH2109, LANC2161 |
| PHYS2107 | Physics for Engineering I | 4 | MATH2107* |
| PHYS2108 | Physics for Engineering II | 4 | PHYS 2107 |
| CHEM1071 | General Chemistry for Engineers | 3 | |
| ENGR4007 | Industrial Training | 0 | |
| Total | | 32 | |

LIST C: COLLEGE ELECTIVES (3 credits)

Students should select ONE course (3 credits) from the following two courses

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|--|----------|---------------------------|
| COMP2002 | Introduction to Computer Programming for Engineers | 3 | |
| ENGR2217 | Programming for Engineers | 3 | |
| Total | | 3 | |

LIST D: DEPARTMENT REQUIREMENTS (23 credits)

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|----------------------------|-----------|--------------------------------|
| CHPE3102 | Engineering Thermodynamics | 3 | CHEM1071, MATH2107 |
| CHPE3302 | Fluid Flow | 3 | CHPE3102 |
| PNGE3312 | Heat and Mass Transfer | 3 | CHPE3302, MATH4174 |
| PNGE3202 | Numerical Methods | 3 | MATH3171, ENGR2217 or COMP2002 |
| PNGE4101 | Statistics for Engineers | 3 | MATH2107 |
| PNGE5103 | Engineering Economy | 3 | MATH2107 |
| PNGE5203 | Management for PCE | 3 | PNGE5103 |
| CHPE3103 | Professional Practice | 2 | LANC2161 |
| Total | | 23 | |

LIST F: MAJOR REQUIREMENTS (54 credits)

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|--|-----------|--|
| ERSC2101 | Introduction to Geology I | 4 | |
| MEIE3203 | Introductory Applied Mechanics | 3 | PHYS2107 |
| PNGE3111 | Chemistry for Petroleum Engineering | 3 | CHEM1071 |
| PNGE3112 | Introduction to Petroleum and Natural Gas Eng. | 2 | |
| PNGE3212 | Rock and Fluid Properties | 3 | PNGE3112, PNGE3111 |
| ERSC3081 | Petroleum Geology for Engineers | 3 | ERSC2101, LANC2161 |
| PNGE4212 | Drilling Technology | 3 | MEIE3203, PNGE4312* |
| PNGE4312 | Drilling Technology Lab | 1 | PNGE4212* |
| PNGE4412 | Reservoir Engineering | 3 | PNGE3212, ERSC3081 |
| GEO3041 | General Geophysics | 3 | PHYS2107, MATH2107, ERSC2101, LANC2161 |
| PNGE4512 | Formation Evaluation | 3 | PNGE3212 |
| PNGE4612 | Well Testing | 3 | PHYS2108, PNGE4412 |
| PNGE4712 | Reservoir Simulation | 3 | PNGE4412, PNGE3202 |
| PNGE5112 | Production Engineering | 3 | PNGE4412 |
| PNGE5115 | Project I | 2 | PNGE4212, PNGE4512, PNGE4612, PNGE4712, CHPE3103 |
| PNGE5212 | Secondary & Enhanced Oil Recovery | 3 | PNGE4412, CHPE3402 |
| PNGE5102 | Health, Safety and Environment (HSE) | 3 | CHPE3103 |
| PNGE5412 | Field Processing of Natural Gas | 3 | PNGE5112 |
| PNGE5215 | Project II | 3 | PNGE5115 |
| Total | | 54 | |

LIST G: MAJOR ELECTIVES (12 Credits)

- Non-COOP students need to take **4** courses (12 Credits) from this list.
- COOP students need to take **2** courses (6 Credits) from this list, in addition to PNG5001 & PNGE5002.

| Course Code | Course Title | Credits | Pre-Requisite / Co-req. * |
|--------------|--|-----------|--------------------------------|
| PNGE5106 | Machine Learning for Petroleum and Chemical Engineers | 3 | PNGE4101, ENGR2217 or COMP2002 |
| PNGE5116 | Underground Gas Storage | 3 | PNGE4712 |
| PNGE5122 | Introduction to Rock Mechanics | 3 | MEIE3203 |
| PNGE5216 | Special Topics | 3 | PNGE4412 |
| PNGE5202 | Well Stimulation | 3 | MEIE3203, PNGE3212 |
| PNGE5302 | Well Control | 3 | PNGE 4212 |
| PNGE5402 | Petroleum Data Analytics | 3 | PNGE410, ENGR2217 or COMP2002 |
| GEOP4001 | Applied Geophysics I | 3 | GEOP3041, PHYS3100 |
| CHPE4102 | Polymers | 3 | CHEM3324 or PNGE3111 |
| CHPE4106 | Introduction to Colloids and Interface Science | 3 | CHEM3324 or PNGE3111 |
| CHPE4202 | Corrosion Engineering | 3 | CHEM1071 |
| CHPE4206 | Introduction to Nanotechnology | 3 | CHEM3324 or PNGE3111 |
| CHPE4302 | Desalination | 3 | CHPE3402 or PNGE3312 |
| CHPE4306 | Wastewater Treatment | 3 | CHEM3324 or PNGE3111 |
| CHPE4406 | Sustainable Energy | 3 | CHPE3402 or PNGE3312 |
| CHPE5106 | Carbon Capture Utilization and Storage | 3 | CHPE3402 or PNGE3312 |
| CHPE5206 | Hydrogen Technology | 3 | PNGE5103 |
| CHPE5207 | Petroleum Refining Processes | 3 | CHEM3324 or PNGE3111 |
| MEIE5288 | Innovation and Entrepreneurship | 3 | PNGE5103 |
| CHEM5537 | Surfactants: Principles & Applications in the Petroleum Industry | 3 | CHPE3102 |
| Total | | 12 | |