



Student guide for the academic year 2024 / 2025

February 2025

Faculty of Engineering

Dear student, we are pleased to welcome you to Al-Nahda University (the first private university in Upper Egypt), to study at the Faculty of Engineering, which is distinguished by its specializations, departments and capabilities, and we would like to dedicate to you this guide that we have prepared for you carefully. It includes at its beginning important definitions of the university, the administration of the college and those in charge of teaching in it, the vision and mission of the college, and then academic issues, and the definition of the preparatory year program, which is the first pillar of study in the college. This program aims to prepare new students and prepare them for university study at the College of Engineering in its various departments. It has basic objectives, including:

- 1- The student guide book is the means through which the student gets acquainted with the university, its regulations, programs, educational tools and services.*
- 2- The Student Handbook is a reference that helps students understand the rules and regulations that govern their activities, and provides a detailed explanation of how to conduct additional activities in a systematic and organized manner.*
- 3- Develop students' technical knowledge and basic skills for effective learning and access to a successful personal and academic lifestyle.*
- 4- In addition, the guide includes a definition of some departments and services that interest you, addresses, phone numbers and official procedures those college students may need, hoping that this will help you in your university life.*
- 5- The university student has rights and duties, included in the rules and regulations in force at the university.*

Speech of the Engineer / Chairman of the Board of Trustees of the University:



May God bless Egypt, our youth and the ambitious youth of expatriates from Arab and African countries who exert maximum effort for the development of our nation and the prosperity of our people. During my many years of experience and the various positions I have held and managed, i.e. in the fields of education, research, establishing universities, or organizing businesses, I have always been keen to support serious businesses and productive projects that add to Egypt's record of excellence and further raise its position among other countries. Al-Nahda University in Beni Suef is one of these projects that I am working on because it carries an innovative message in the teaching methods it adopts and the scientific research it targets. At Nahda University, we aspire to build a new generation capable of facing the challenges posed by the future. Therefore, we have committed to hard and effective work, and to provide specialized programs that develop the minds of our youth and enrich their educational experience.

Chairman of the Board of Trustees
Engineer / Mohammed Al-Rashidi

Speech of Prof. Dr. / President of the University:



Al-Nahda University in Beni Suef, an Egyptian private university, under Presidential Decree No. 2006/253, spared no effort to make its way towards the desired excellence at a steady pace, and thus it occupies a prominent position in Upper Egypt by overcoming all the difficulties and

challenges faced by the education sector at this stage in which we live. Al-Nahda University in Beni Suef has taken steps to obtain accreditation for all its diverse and comprehensive study programs, such as the university's programs in medicine, dentistry, pharmacy, engineering, computer science, media, marketing and business administration, which meet the needs of the local and regional community as well as the requirements of the labor market, while obtaining international accreditations for some programs and degrees granted by the university.

In addition, Al-Nahda University in Beni Suef has started contacting many universities in various scientific disciplines, believing that it is necessary to cooperate with local, regional and international universities in various fields of education in order to ensure the quality of education.

The university continued its endeavor to develop academic programs in various fields of knowledge, which formed a complete fertile ground and tributary to the university's seven faculties, in addition to the university's

keenness to develop the skills of the faculty in accordance with international standards, attract prominent teachers, and encourage teaching and scientific research while adhering to local, regional and international standards. In this context, the university has spared no effort to achieve this vision and mission in order to become a reality. It has provided advanced scientific laboratories and equipped them to suit the requirements of higher education and its institutions based on the latest technologies and educational systems, as well as enriching them with various educational databases to serve the learning and teaching process in addition to scientific research.

In addition, Al-Nahda University in Beni Suef encourages student activities such as paying attention to student clubs and sports facilities such as halls and playgrounds, holding training courses to enrich the educational experience, simulate talents and refinement as part of preparation for postgraduate studies. The university also provides community service of tangible importance by providing distinguished medical services to the surrounding local community, providing expertise and consultations in various medical, health and applied fields, as well as hosting many local and regional activities on campus. Indeed, these major achievements by Al-Nahda University in Beni Suef are confident steps towards universality.

Prof. Dr. Hossam Al-Mallahi
President of Al-Nahda University

Speech of Prof. Dr. / Dean of the Faculty of Engineering:



My sons and daughters, students of the Faculty of Engineering, I take the opportunity of the beginning of the academic year 2024/2025 to congratulate all the old and new students of the faculty on the new academic year, may God return to you and your families with goodness, health, happiness and more knowledge. To our new students, I am particularly pleased to congratulate you on the first academic year of your life, and I commend you for choosing the prestigious engineering profession to be the future engineers who bear the responsibility for the advancement of the country. You are the descendants of the builders of the pyramids and great Arab and African civilizations, and you are required to follow the path to bring our beloved Egypt and our Arab and African world to the forefront among the nations of modern civilizations.

As you move from the secondary stage in which you achieved honorable excellence to the university stage, in which we wish you continued excellence and advancement, you are going through more than one important transformation - first you are moving from a stage characterized by supervision, supervision and guidance at home and school in one way or another, to a stage in which you have more freedom. This freedom must be accompanied by a greater sense of responsibility on your part in order to achieve its desired - the development of your abilities to create and create, and not, God forbid, be a path to defect or loss. Also, in the transition from secondary to university, you will find that the role of the university is not to indoctrinate you with the available information, as this information is

currently changing rapidly, but the role of the university is to provide you with the skills to search for information and adapt it to benefit from it. The role of the university is not to provide you with information as much as to provide you with the ability, skills and thought necessary to acquire knowledge throughout your extended and successful working life, God willing.

The college has accredited six new credit hour programs (160 hours) that keep pace with the rapid development in all engineering fields. These departments are (Department of Civil Engineering - Department of Architecture Engineering - Department of Communications and Computer Engineering - Department of Electrical and Renewable Energy Engineering - Department of Mechatronics Engineering - Department of Mechanical Engineering. My sons and daughters, The preparatory year in which you set your feet on the first path to join the engineering family, provides you with the opportunity to study some basic sciences that you later learn their importance in engineering application. This year is also an opportunity for you to get to know the different engineering disciplines closely so that each of you can choose from these disciplines what It suits his inclinations and abilities. My sons and daughters, I pray to God that everyone's effort will be crowned with success, and that your studies at the college will be fruitful and successful and full of happy memories.

Good luck ,,,,,,

Prof. Dr. Salem Mahmoud Salem Al-Khodari
Dean of the Faculty

Speech of Prof. Dr. / Vice Dean for Education and Student Affairs:



First of all, I am pleased to welcome you my male and female students to the Faculty of Engineering at Al-Nahda University in Beni Suef, and I wish you a successful university life filled with seriousness, diligence and perseverance to obtain what you aspire to.

With the brightness of a new academic year, I am pleased to extend to you my sincere congratulations and best wishes for a successful academic year full of giving and crowned with success that carries with it hope for a bright future thanks to your efforts and keenness to work hard, and your regularity in attending lectures, and permanent access to the various sources for the collection of scientific material with my emphasis on the college's constant interest and keenness to provide everything that would achieve excellence and excellence for college students.

The Faculty of Engineering is honored by your affiliation to it and needs you to exert more effort to raise its status, as our dear college, which must be exploited by its scientific niche to refine your cognitive and applied skills in order to become useful graduates for the Egyptian, Arab and regional society in all institutions, companies and factories.

The Student Handbook is the means through which the student learns about the university and its regulations, programs, educational tools, and services. In this guide, you will find everything that interests

students about the college, the study system, the various engineering study programs it offers, in addition to the student services and activities that are indispensable for each student. The university student has rights and duties, included in the laws and regulations in force at the university, and the student can review these rights and duties in this guide. Your college, aware of the importance of the role of youth in society, is keen to provide young people with what is necessary to build a balanced personality that works to increase engineering sciences and seeks to participate in various other activities in accordance with the personal tendencies of each of you. Therefore, I invite you to familiarize yourself with the various activities in the college and university to choose from them what suits you. My sincere wishes to you, my sons and daughters, male and female students, to spend the period of study at the faculty with happiness and love, and that you remember after graduation those beautiful days that you spent in the Faculty of Engineering, Nahda University.

We are proud to see you as distinguished graduates who occupy the highest positions to benefit your country and raise its status, God willing.

Prof. Dr. Sayed Abdelkader
Vice Dean for Education and Student Affairs

Part One: Nahda University

About Nahda University

Nahda University was established by Presidential Decree No. 253 of 2006 - dated 15/7/2006 in the center of the city of East Beni Suef Jadida, on the Cairo-Beni Suef road. The moment we realized how much attention education needs, especially in Upper Egypt, is the same moment we realized that our dream of building Nahda University is achievable. The university is a place to care for young people and prepare educated generations on which we entrust the development of our beloved country. By adopting the most advanced education methodologies to build open generations that can compete in different labor markets, Nahda University truly provides a role model. Nahda University offers diverse studies covering the most important technical, academic and specialized sectors of work. Our academic staff are eminent scholars who apply modern scientific and academic teaching methods that enable students to fully understand their topics and apply their lessons effectively at work. Nahda University is not just a place for academic studies, it is a center of development where we develop students' intellectual skills and enable them to excel in research, academia and social work.

Nahda University provides its students with the latest education tools and prepares them for their mission as development leaders through programs that enhance their creativity, build on their skills and enrich their minds.

University Vision

To be a distinguished Arab and African university and to be characterized by creativity and innovation in providing educational services and scientific research with international standards and to be an initiative in community service in order to achieve local and national sustainable development plans.

University Mission

Nahda University is committed to providing contemporary academic programs that develop the cognitive, skill and behavioral aspects of students in a way that qualifies them for the national, Arab and African labor market, and in a way that devotes the thought of entrepreneurship to what matters, and to provide the appropriate climate as an intellectual, research and advisory center at the local, national and regional levels and to apply together the international quality in all its academic and service activities.

University Objective

Our mission is to contribute effectively to preparing young people scientifically and ethically to be able to compete in research and career fields, and to play leadership and enlightening roles in the renaissance of society by providing excellent educational, research and community services.

Why Nahda University?

Al-Nahda University was founded with ambition and great hopes in the desert region east of Beni Suef. Many did not imagine that we would establish the first pillar in the integrated city of East Beni Suef. We put Beni Suef on the map of growth and progress by renewing the city, creating jobs and changing the face of life.

Part Two

Faculty of Engineering

The study began at the college with Ministerial Resolution No. 4830 dated 4/11/2012 in the academic year 2012/2013, and the college began with three scientific departments: the Department of Civil Engineering, the Department of Architecture, the Department of Communications and Computer Engineering in addition to the Department of Basic Sciences. Due to the faculty's keeping pace with scientific and technological development in various fields of engineering internally and externally, the faculty has made great efforts to add new disciplines to keep pace with the latest engineering disciplines, and accordingly, the faculty has established three new and distinct departments: the Department of Mechatronics Engineering, the Department of Electrical and Renewable Energy Engineering, the Department of Mechanical Engineering and the Department of Mechanical Production, thus becoming the largest private engineering college in terms of the number of departments in Upper Egypt and achieving the diversity required to achieve the desires of students to choose between a large number of different engineering disciplines.

College Vision:

The Faculty of Engineering should be distinguished in the Arab world and Africa and be characterized by creativity and innovation in providing educational services and scientific research with international standards to serve the community in order to achieve sustainable development plans.

College Mission:

The College of Engineering is committed to preparing engineering cadres capable of creativity and innovation by providing contemporary academic programs that develop their knowledge and skills aspects to suit the local, regional and international labor market and meet the needs of society and giant national projects, encourage scientific research and apply quality standards in all its academic and service activities.

PART three

University Graduation and Graduation Scoring System

Student Evaluation System in the Course:

- 1. The final grade for each course is the total score of students in the semester including practical tests, mid-term exams, and end-of-semester exams, where student work is continuously evaluated during the semester.***
- 2. The final grade for each course consists of the student's assessment in the classroom, periodic tests, theoretical and practical exercises, and research, while the final semester exam score ranges from 40% to 60% of the final course mark.***
- 3. The student's grade can be evaluated in applied courses such as project and research courses without a written test at the end of the semester. An oral test will be conducted that includes the evaluation of the report submitted by the student and the scientific work carried out through a discussion committee consisting of two faculty members, at least one of whom is from outside the university in addition to the project supervisor.***
- 4. The student must obtain at least 60% of the total grades to pass the course, provided that he succeeds in the final exam by obtaining 40% of the final exam mark as a minimum to succeed in the course.***

GRADING SYSTEM: GRADING SYSTEM

- The system of calculating the percentage of courses and percentage points is calculated according to the following table:

GPA	Percentage	Grade	GPA	Percentage	Grade
2.3	73% to less than 76%	C +	4.0	97% and higher	A +
2.0	70% to less than 73%	C	4.0	93% to less than 97%	A
1.7	67% to less than 70%	C-	3.7	89% to less than 93%	A-
1.3	64% to less than 67%	D +	3.3	84% to less than 89%	B +
1.0	60% to less than 64%	D	3.0	80% to less than 84%	B
0.0	Less than 60%	F	2.7	76% to less than 80%	B-

Average Grade Score: GPA

A. The average GPA score for one semester is calculated by obtaining the product of the grade points by the number of credit hours for each course to produce the so-called qualitative points (quality points), then the total qualitative points are divided by the total number of credit hours for the courses whose points are included in the calculation of the cumulative average. Grade point average = total qualitative points ÷ total credit hours for courses whose points are included in the calculation of the cumulative GPA.

B. To obtain the cumulative grade point average (CGPA), the total qualitative points (quality points) are divided by the total credit hours for the courses whose points are included in the calculation of the cumulative grade point average for all semesters. The student's academic load in any semester (except the summer semester) is determined based on the value of the cumulative grade point average (CGPA) and not on the value of the average grade point GPA for the previous semester.

What are the implications of these estimates?

First of all:

- **The student's name is placed in the college honor list if he obtains a cumulative average of at least 3.3 and has recorded the maximum academic load without failing any course.**
- **The student receives a first class of honors if he graduates with a minimum cumulative average of 3.7 points and a second honors degree if he obtains a cumulative average of at least 3.3 points.**

Secondly:

- **If the student obtains a cumulative GPA of 3.3 or more, he may register three credit hours in excess of the maximum semester in exchange for additional fees. If the GPA exceeds 3.75, the student is allowed to register for an additional course without additional fees.**

Thirdly:

- **If the student's cumulative average is less than two points, he will be placed under academic probation and the student will be officially notified of this.**

PART4: Faculty of Engineering

Credit Hours:

- **160 Hours**
- **All courses are conducted in English**

Degree:

The faculty grants students a bachelor's degree in the following areas:

- **Civil Engineering.**
- **Architectural Engineering.**
- **Electrical Engineering (Communications and Computer Engineering).**
- **Mechatronics Engineering.**
- **Electrical and Renewable Energy Engineering.**
- **Mechanical Engineering (Mechanical Production Division).**

WHY JOIN THE FACULTY OF ENGINEERING?

The Faculty of Engineering at NUB provides outstanding engineering educational and research services that meet the highest quality standards by enhancing student creativity, teaching and learning through:

- *Strengthening the capabilities of our graduate engineers with scientific skills, professional knowledge and ethical values.*

- *Training our graduates to keep abreast of rapid technological changes to lead the development of society, as well as the surrounding environment.*
- *Providing technical laboratories with the latest equipment to support university students in conducting applied research and quality tests on national projects.*
- *Production workshops to train university students on various technical machinery and tools to produce market requirements.*
- *Hosting an Engineering advisory center that provides consultancy services, training and research in various engineering fields.*

Vision

Faculty of Engineering is aiming to be a premier engineering institute in the Arab world and Africa via promoting creativity and embracing innovation in education and research services with International Standards to serve the Community to reach sustainable development plans.

Mission

The Faculty of Engineering is committed to providing contemporary academic programs that develop the cognitive, affective, and psychomotor skills of our graduates to be qualified to instills entrepreneurship on local, Arabic and international market. The Faculty is also committed to apply the Quality Standards in all academic and services activities.

Strategic Objects

- **Attracting distinguished faculty members and researchers in various engineering fields.**
- **Development of skills and capabilities of faculty Staff.**
- **Improving the educational environment to encourage faculty members, researchers and students on innovation, respecting for the time and feeling Job satisfaction.**
- **Revaluing credibility and ethics where the faculty staff and teaching assistants being as a role model for students to follow noble human values.**
- **Continuous development of educational programs to meet the requirements of the labor market through various types of learning, teaching and evaluation for students.**
- **Graduating students to be high qualified engineers and good scientific researcher capable of leading and developing society for various engineering fields.**
- **Motivation of staff, researcher and students to do a research projects and linking it with industrial environment.**
- **Doing protocols with local and international universities for postgrads studies, research and student exchanging.**
- **Development of faculty management systems and academic departments**

PART 5: Service & Facilities

LABORATORIES AND WORKSHOPS

Faculty provides equipped Laboratories and Workshops in order to develop students learning skills in every scientific branch.

BASIC SCIENCES department LABS

Include the following laboratories:

Physics labs.

Computer labs.

Chemical Engineering lab.

Electrical Engineering Department (Communication and Computer engineering) Labs

Include the following laboratories:

Electrical circuits laboratory.

Electrical measurements & testing laboratory.

Analogue and digital circuits laboratory.

Integrated circuit design laboratory.

Digital signal processing laboratory.

Micro controllers & applications laboratory.

Microprocessors & applications laboratory.

Optical communication laboratory.

Digital communication laboratory.

Antennas and wave propagation laboratory.

Electrical communication laboratory.

Programming languages laboratory.

CIVIL ENGINEERING department Labs.

Include the following laboratories:

Material laboratory.

Surveying laboratory.

Concrete technology laboratory.

Hydraulic laboratory.

Sanitary engineering laboratory.

Soil mechanics & foundation laboratory.

Architectural ENGINEERING DEPARTMENT LabS.

Include the following laboratories:

Optical & visual training laboratory.

Building construction laboratory.

Building materials laboratory.

Tools and equipment are available in numbers by which enable each student does practical experiments individually.

EDUCATIONAL WORKSHOPS

Operating machines in the existing shops allow to divide the students into groups of five students and then each student has direct hands-on training to conduct exercises required.

- Workshop of Operating Machines located in the workshops Building at the Faculty of Engineering.
- Welding Workshop located in the workshops Building at the Faculty of Engineering.
- Workshop of Wood-working Machinery located in the workshops Building at the Faculty of Engineering.
- Floors and cladding workshop.

ACADEMIC ADVISING

By qualified Staff Members & Staff Members Assistants, Faculty gives academic and scientific instructions to all students who desire to develop their academic performance, all of this is done through a special program called “Big Brother”.

LIBRARY

Library includes many of the references and textbooks which help students developing their scientific knowledge and enhancing their scientific comprehension.

Student activities and other services:

Summer camps.

Scientific and recreational trips.

Inventors care center.

English language program.

Support Unit of e-learning.

E-mail to each student.

University Dental Hospital.

Indoor Minibus

PART 6: Programs and Courses

Course Codes

- **Method of Encoding the Scientific Sections of the Faculty Engineering**

No	Department	Code
1	Basic Sciences Department	BAS
2	Civil Engineering Department	CVE
3	Architectural Engineering Department	ARE
4	Communication and Computer Engineering Department	CCE
5	General Mechanical Engineering	GME
6	Mechatronics Engineering Department	MTE
7	Department of Mechanical Engineering (Mechanical Production Division)	MPE
8	Electrical and Renewable Energy Engineering Department	ERE

Method of Course Codes of the Faculty Engineering

E		R	E	2		2		1
Code of Department				Level		Term		No. in Term
BAS	Basic Sciences Department			0	Level 0	Odd	1 st Term	
CVE	Civil Engineering			1	Level 1	Even	2 nd Term	
CCE	Communication & Computer Engineering			2	Level 2	7	Elective	
ARE	Architectural Engineering			3	Level 3			
GME	General Mechanical Engineering			4	Level 4			
MTE	Mechatronics Engineering							
MPE	Mechanical Production Engineering							
ERE	Electrical and Renewable Energy Engineering							

The following abbreviations are the legend for the courses table

Specialization	Symbol
Credit Hour	CH
Lectures	Lec
Tutorials	Tut
Laboratory	Lab
Total	TT

1- Nahda University Requirements

2- Nahda University Requirements Courses

Type	Code	Course Title	Credits	Contact Hours				
			CH	Lec	Tut	Lab	TT	
Type 1	HUM101	Human Rights	3	3	0	0	3	
	REM101	Scientific Thinking	3	3	0	0	3	
	MGT101	Principles of General Management	3	3	0	0	3	
	ETS401	Professional Ethics	1	1	0	0	1	
Type 2	ENG111A	English (1)	1	1	0	0	1	
	ENG112A	English (2)	1	1	0	0	1	
	ENG113A	English (3)	2	2	0	0	2	
Type 3	CS-121	Aptech-Computer Skills (1)	0	2	0	0	2	
	CS-122	Aptech-Computer Skills (2)	0	2	0	0	2	
	CS-123	Aptech-Computer Skills (3)	0	2	0	0	2	
	Total		14	20	0	0	20	

The pass of these courses in the table above is a prerequisite for graduation and is divided into three types as follows:

Type 1: Calculated in the cumulative total and calculated in the number of graduation hours.

Type 2:

- English language courses are not counted in the cumulative total and are calculated in the number of graduation hours.
- If the student is exempted from one or more of the English language courses based on the placement test result, the student must choose a course from the university faculties or an alternative course from the general requirements of the faculty to complete the credit hours of the university requirements.

Type 3: Computer Skills courses are not counted in the cumulative total and are not counted in the number of graduation hours.

3. Faculty of Engineering Requirements Courses

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Le c	Tu t	La b	T T	
BAS011	Mathematics (1)	3	2	2	0	4	
BAS021	Mathematics (2)	3	2	2	0	4	BAS011
BAS112	Building Safety and Fire Protection	2	2	0	0	2	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS013	Statics	3	2	2	0	4	
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS122	Probability and Statistics	2	2	1	0	3	
MPE021	Production Engineering	2	2	0	2	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015
CCE011	Computing in Engineering	2	2	1	1	4	
BAS024	Fundamentals of Engineering	2	2	0	0	2	
-	Structures and Properties of Materials Elective	2	2	0	1	3	

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Le c	Tu t	La b	T T	
-	Engineering Economy Elective	2	2	1	0	3	
-	Project Management Elective	2	2	1	0	3	
T o t a l		41	32	18	11	61	
Pool of Structures and Properties of Materials Elective Courses (One Course)							
MPE171	Structures and Properties of Materials	2	2	0	1	3	BAS014
CCE172	Properties of Electrical Materials	2	2	0	1	3	
CVE173	Structures and Properties of Construction Materials	2	2	0	1	3	
Pool of Engineering Economy Elective Courses (One Course)							
MPE271	Engineering Economy	2	2	1	0	3	
ARE272	Feasibility Studies	2	2	1	0	3	
ERE273	Renewable Energy Systems and Economics	2	2	1	0	3	
ARE274	Society and Housing Economics	2	2	1	0	3	
ARE275	Urban Economics	2	2	1	0	3	
BAS276	Engineering Economics and Management	2	2	1	0	3	
BAS277	Engineering Economics and Finance	2	2	1	0	3	
Pool of Project Management Elective Courses (One Course)							
MPE371	Industrial Project Management	2	2	1	0	3	
ARE372	Architecture Project Management	2	2	1	0	3	
ERE373	Project Management for Electrical Engineering	2	2	1	0	3	
CCE374	Software Project Management	2	2	1	0	3	
ARE375	Construction Management	2	2	1	0	3	
CVE376	Project Management Essentials	2	2	1	0	3	

1- Civil Engineering Program

Program Description

Civil Engineering is a traditionally vital profession for the development, construction and maintenance of the society infrastructure, the growth of its resources, and the sustainability of a better and safer environment for future generations. It embraces various technical areas including structural engineering, materials engineering, construction engineering, geotechnical engineering, environmental engineering, water and irrigation engineering, highway and transportation engineering. Accordingly, civil engineering graduates can apply for diverse jobs in government, public and private practice.

Program Aims

Accordingly, the educational objectives of the Civil Engineering Program aim to prepare graduates who are able to:

1. Function effectively as a member of a multidisciplinary team in the work environment, and Apply standards of professional and ethical responsibility
2. Solve complex problems with uncertainties of loading, materials, and capacity in different technical areas of civil engineering by selecting and applying proper concepts, and techniques of mathematics and sciences, and modern technologies and tools
3. Design and Construct civil structures and sustainable systems using codes of practice to meet desired needs, and analyze their impact on the economy, environment, and society
4. Conduct experiments in several technical areas of civil engineering, Report and Analyze the resulting data
5. Organize and Manage engineering and construction projects, and Demonstrate the ability to evaluate different alternatives and systems
6. Deliver professional communications in an effective way, Illustrate leadership skills to direct the efforts of a group, and demonstrate the incorporation of humanities and social sciences knowledge into the professional practice of civil engineering
7. Identify the necessity for career development through life-long learning, professional seminars and licensure.

• **List of Civil Engineering Program Requirements Courses**

Course Title	Credits	Contact Hours			
	CH	Lec	Tut	Lab	TT
Nahda University Requirements	14	14	0	0	14
Faculty of Engineering Requirements	41	32	18	11	61
General Civil Engineering Requirements	61	47	33	7	87
Civil Engineering application and design Requirements	29	24	16	2	42
Elective of Structural Engineering application and design projects	15	9	12	3	24
Elective of Public work Engineering application and design projects					
Elective of Water resources Engineering application and design projects					
Total	160	126	79	23	228

General Civil Engineering Requirements

Civil Engineering General Requirements (**61**) credit hours distributed as follows

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
CVE111	Structural Analysis (1)	3	2	2	0	4	
CVE112	Engineering Surveying	3	2	1	1	4	
CVE113	Civil Drawing	3	1	4	0	5	BAS025
ARE116	Principle of Building Construction	3	2	2	0	4	
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
CVE121	Structural Analysis (2)	3	2	2	0	4	CVE111
CVE122	Properties of Materials	3	2	1	1	4	
CVE123	Geology	2	2	1	0	3	
CVE124	Environmental Engineering	2	2	1	0	3	
CVE211	Design of Concrete Structures (1)	3	2	2	0	4	CVE122,CVE121
CVE213	Concrete Technology	3	2	1	1	4	CVE122
CVE125	Fluid Mechanics	3	2	1	1	4	

CVE215	Topographic and Photogrammetric Surveying	2	2	1	0	3	CVE112
CVE216	Soil Mechanics (1)	2	2	1	1	4	CVE123
CVE221	Design of Concrete Structures (2)	3	2	2	0	4	CVE211
CVE222	Design of Steel Structures (1)	3	2	2	0	4	CVE121
CVE223	Soil Mechanics (2)	3	2	1	1	4	CVE216
CVE224	Irrigation and drainage Engineering	2	2	1	0	3	
CVE311	Transportation and Traffic Engineering	2	2	1	0	3	
CVE225	Hydraulics	3	2	1	1	4	CVE125
CVE315	Foundations Engineering (1)	2	2	1	0	3	CVE211,CVE 223
CVE323	Highway Engineering	2	2	1	0	3	CVE311
CVE324	Design of Irrigation Structures (1)	2	2	1	0	3	CVE125,CVE 223
Total		61	47	33	7	87	

Civil Engineering applications and design Requirements

Civil Engineering applications and design (29) credit hours distributed as follows

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
CVE212	Structural Analysis (3)	3	2	2	0	4	CVE121
CVE214	Field Training (1)	0	0	0	0	0	
CVE312	Design of Steel Structures (2)	3	2	2	0	4	CVE222
CVE313	Water Supply Engineering	2	2	1	1	4	CVE125
CVE314	Design of Concrete Structures (3)	3	2	2	0	4	CVE221
CVE321	Design of Concrete Structures (4)	3	2	2	0	4	CVE314
CVE415	Construction Engineering	2	2	1	0	3	CVE213,CVE221
CVE316	Field Training (2)	0	0	0	0	0	CVE214

CVE325	Wastewater Engineering	2	2	1	0	3	CVE313,CVE225
CVE414	Management of Construction Projects	2	2	1	0	3	
CVE411	Foundations Engineering (2)	2	2	1	0	3	CVE315
CVE412	Repair & Strengthening of Structures	2	2	0	1	3	CVE211,CVE213
CVE322	Design of Bridges	3	2	2	0	4	CVE312,CVE221
CVE413	Quantities and Specifications	2	2	1	0	3	CVE221,CVE315
Total		29	24	16	2	42	

Elective Courses of Civil Engineering is distributed in three Fields

1. **Structural engineering requirements** متطلبات تخصص الهندسة الانشائية
*Structural Engineering Requirements **(15)** credit hours from the following elective courses and it should include a graduation project (1) and (2).*

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
CVE371	Graduation Project (1) and Computer Applications - Structural Engineering	5	2	3	3	8	115 Hrs, CVE212,CVE221
CVE571	Graduation Project (2) - Structural Engineering	4	1	6	0	7	CVE371
CVE176	Structural Dynamics and Seismic analysis	2	2	1	0	3	CVE212
CVE177	Design of Wall Bearing Structures	2	2	1	0	3	CVE211
CVE272	Design of High Rise Buildings	2	2	1	0	3	CVE212,CVE221
CVE273	Quality Control in Construction Engineering	2	2	1	0	3	CVE211,CVE122
CVE473	Design of Special reinforced concrete structures	2	2	1	0	3	CVE314
CVE277	Advanced Materials	2	2	1	0	3	CVE213

CVE475	Tunnels and underground structures	2	2	1	0	3	CVE315
CVE276	Prestressed Concrete	2	2	1	0	3	CVE221

Public Works engineering requirements

متطلبات تخصص الأشغال العامة

*Public Works engineering requirements **(15)** credit hours from the following elective courses and must be including a graduation project (1) and (2).*

Code	Course Title	Credits CH	Contact Hours				Prerequisites
			Lec	Tut	Lab	TT	
CVE372	Graduation Project (1) and Computer Applications - Public Works	5	2	3	3	8	115 Hrs, CVE323
CVE572	Graduation Project (2) - Public Works	4	1	6	0	7	CVE372
CVE171	Railway Engineering	2	2	1	0	3	
CVE172	Maps, GIS & Remote Sensing	2	2	1	0	3	CVE112
CVE478	Airport Engineering	2	2	1	0	3	CVE323
CVE271	Plumbing Engineering	2	2	1	0	3	CVE125
CVE274	Geometric Geodesy and Geodetic Astronomy	2	2	1	0	3	CVE215
CVE474	Transportation Engineering and Planning	2	2	1	0	3	CVE311
CVE479	Construction of Water and Wastewater Infrastructure	2	2	1	0	3	CVE325
CVE471	Quality and chemistry of water	2	2	1	0	3	CVE325
CVE175	Solid wastes	2	2	1	0	3	CVE124

Water resources engineering requirements *متطلبات تخصص موارد المياه الهندسية*
Water resources engineering requirements (15) credit hours from the following
elective courses and must be include a graduation project (1) and (2).

Code	Course Title	Credits CH	Contact Hours				Prerequisites
			Lec	Tut	Lab	TT	
CVE373	Graduation Project (1) and Computer Applications - Water Resources	5	2	3	3	8	115 Hrs,CVE325
CVE573	Graduation Project (2) - water resources	4	1	6	0	7	CVE373
CVE174	Hydrology	2	2	1	0	3	
CVE470	Design of Irrigation Structures (2)	2	2	1	0	3	CVE324
CVE472	Harbor Engineering	2	2	1	0	3	CVE315
CVE275	Irrigation and Drainage Systems	2	2	1	0	3	CVE224
CVE476	Water Resources Management	2	2	1	0	3	CVE224
CVE477	Hydraulic Machines	2	2	1	0	3	CVE225

المقررات الاختيارية في الهندسة المدنية موزعة على خمس مجموعات اختيارية (عام)

Elective Courses of Civil Engineering is distributed in five electives (General)

Code	Course Title	Credits CH	Contact Hours				Prerequisites
			Lec	Tut	Lab	TT	
Elective 1 Select 2 Credit hrs (one course)							
CVE171	Railway Engineering	2	2	1	0	3	
CVE172	Maps, GIS & Remote Sensing	2	2	1	0	3	CVE112
CVE174	Hydrology	2	2	1	0	3	
CVE175	Solid wastes	2	2	1	0	3	CVE124
CVE176	Structural Dynamics and Seismic analysis	2	2	1	0	3	CVE212
CVE177	Design of Wall Bearing Structures	2	2	1	0	3	CVE211
Elective 2 Select 2 Credit hrs (one course)							
CVE271	Plumbing Engineering	2	2	1	0	3	CVE125
CVE272	Design of High Rise Buildings	2	2	1	0	3	CVE212,CVE221
CVE273	Quality Control in Construction	2	2	1	0	3	CVE211,CVE1

	Engineering						22
CVE274	Geometric Geodesy and Geodetic Astronomy	2	2	1	0	3	CVE215
CVE275	Irrigation and Drainage Systems	2	2	1	0	3	CVE224
CVE276	Prestressed Concrete	2	2	1	0	3	CVE221
CVE277	Advanced Materials	2	2	1	0	3	CVE213
Elective 3 Select 5 Credit hrs (one course)							
CVE371	Graduation Project (1) and Computer Applications - Structural Engineering	5	2	3	3	8	115 Hrs, CVE212,CVE221
CVE372	Graduation Project (1) and Computer Applications - Public Works	5	2	3	3	8	115 Hrs,CVE323
CVE373	Graduation Project (1) and Computer Applications - Water Resources	5	2	3	3	8	115Hrs,CVE325
Elective 4 Select 2 Credit hrs (one course)							
CVE470	Design of Irrigation Structures (2)	2	2	1	0	3	CVE324
CVE471	Quality and chemistry of water	2	2	1	0	3	CVE325
CVE472	Harbor Engineering	2	2	1	0	3	CVE315
CVE473	Design of Special reinforced concrete structures	2	2	1	0	3	CVE314
CVE474	Transportation Engineering and Planning	2	2	1	0	3	CVE311
CVE475	Tunnels and underground structures	2	2	1	0	3	CVE315
CVE476	Water Resources Management	2	2	1	0	3	CVE224
CVE477	Hydraulic Machines	2	2	1	0	3	CVE225
CVE478	Airport Engineering	2	2	1	0	3	CVE323
CVE479	Construction of Water and Wastewater Infrastructure	2	2	1	0	3	CVE325
Elective 5 Select 4 Credit hrs (one course)							
CVE571	Graduation Project (2) - Structural Engineering	4	1	6	0	7	CVE371
CVE572	Graduation Project (2) - Public Works	4	1	6	0	7	CVE372
CVE573	Graduation Project (2) - water resources	4	1	6	0	7	CVE373

• الخطة الدراسية لبرنامج الهندسة المدنية

• Study Plan of Civil Engineering Program

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
Semester 1							
BAS011	Mathematics (1)	3	2	2	0	4	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS013	Statics	3	2	2	0	4	
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
CCE011	Computing in Engineering	2	2	1	1	4	
NUB	Complete hours from NUB Compulsory	1	1	0	0	1	
Total		18	13	10	3	26	
Semester 2							
BAS021	Mathematics (2)	3	2	2	0	4	BAS011
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS024	Fundamentals of Engineering	2	2	0	0	2	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015
MPE021	Production Engineering	2	2	0	2	4	
ENG111	English (1)	1	1	0	0	1	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	14	5	7	26	
Semester 3							
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS112	Building Safety and Fire Protection	2	2	0	0	2	
ARE116	Principle of Building Construction	3	2	2	0	4	
CVE111	Structural Analysis (1)	3	2	2	0	4	
CVE112	Engineering Surveying	3	2	1	1	4	
CVE113	Civil Drawing	3	1	4	0	5	BAS025
	Structures and Properties of Materials Elective	2	2	0	1	3	
Total		18	13	10	2	25	
Semester 4							
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
BAS122	Probability and Statistics	2	2	1	0	3	

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
CVE121	Structural Analysis (2)	3	2	2	0	4	CVE111
CVE122	Properties of Materials	3	2	1	1	4	
CVE123	Geology	2	2	1	0	3	
CVE124	Environmental Engineering	2	2	1	0	3	
CVE125	Fluid Mechanics	3	2	1	1	4	
ENG112	English (2)	1	1	0	0	1	ENG111
Total		18	15	8	2	25	
Semester 5							
CVE211	Design of Concrete Structures (1)	3	2	2	0	4	CVE122,CVE121
CVE212	Structural Analysis (3)	3	2	2	0	4	CVE121
CVE213	Concrete Technology	3	2	1	1	4	CVE122
CVE214	Field Training (1)	0	0	0	0	0	
CVE215	Topographic and Photogrammetric Surveying	2	2	1	0	3	CVE112
CVE216	Soil Mechanics (1)	2	2	1	1	4	CVE123
	Project Management Elective	2	2	1	0	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	15	8	2	25	
Semester 6							
CVE221	Design of Concrete Structures (2)	3	2	2	0	4	CVE211
CVE222	Design of Steel Structures (1)	3	2	2	0	4	CVE121
CVE223	Soil Mechanics (2)	3	2	1	1	4	CVE216
CVE224	Irrigation and drainage Engineering	2	2	1	0	3	
CVE225	Hydraulics	3	2	1	1	4	CVE125
	Civil Elective (1)	2	2	1	0	3	-
ENG113	English (3)	2	2	0	0	2	ENG112
Total		18	14	8	2	24	
Semester 7							
CVE311	Transportation and Traffic Engineering	2	2	1	0	3	-
CVE312	Design of Steel Structures (2)	3	2	2	0	4	CVE222
CVE313	Water Supply Engineering	2	2	1	1	4	CVE125
CVE314	Design of Concrete Structures (3)	3	2	2	0	4	CVE221
CVE315	Foundations Engineering (1)	2	2	1	0	3	CVE211,CVE223
CVE316	Field Training (2)	0	0	0	0	0	CVE214
	Civil Elective (2)	2	2	1	0	3	

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		17	15	8	1	24	
Semester 8							
CVE321	Design of Concrete Structures (4)	3	2	2	0	4	CVE314
CVE322	Design of Bridges	3	2	2	0	4	CVE312,CVE21
CVE323	Highway Engineering	2	2	1	0	3	CVE311
CVE324	Design of Irrigation Structures (1)	2	2	1	0	3	CVE125,CVE223
CVE325	Wastewater Engineering	2	2	1	0	3	CVE313,CVE225
	Civil Elective (3)	5	2	3	3	8	
Total		17	12	10	3	25	
Semester 9							
CVE411	Foundations Engineering (2)	2	2	1	0	3	CVE315
CVE412	Repair & Strengthening of Structures	2	2	0	1	3	CVE211,CVE213
CVE413	Quantities and Specifications	2	2	1	0	3	CVE221,CVE315
CVE414	Management of Construction Projects	2	2	1	0	3	
CVE415	Construction Engineering	2	2	1	0	3	CVE213,CVE21
	Civil Elective (4)	2	2	1	0	3	
	Civil Elective (5)	4	1	6	0	7	
	Engineering Economy Elective	2	2	1	0	3	
Total		18	15	12	1	28	

2-Architectural Engineering Program

Program Description

Throughout history, architecture was witness to the most significant reflections of culture and civilization. In today's world, architects are compelled to challenge critical global issues through holding responsibility of the built environment, responding to societal needs and conserving natural resources. The program is committed to offering well-rounded future generations of skilled professional architects through an education that is rooted in culture, sustained with theory and progressive with technologically advanced methods. This program dedicated to sustain creativity with knowledge and practice.

Career Prospects

It is intended that graduates of the Architectural Engineering program will acquire critical thinking and enhance design creativity in order to take a leading role in the professional practice. Graduates will be eligible to work in architectural design firms; in design, tender documents, as well as urban design and detailed planning. Moreover, they will be qualified for working in construction industry, building technology, rehabilitation, conservation of buildings, urban context, and physical planning. Additionally, they can be enrolled in graduate studies in universities or research centers.

توزيع مقررات برنامج الهندسة المعمارية

• List of Architectural Engineering Program Requirements courses

Course Title	Credits	Contact Hours			
	CH	Lec	Tut	Lab	TT
Nahda University Requirements	14	14	0	0	14
Faculty of Engineering Requirements	39	30	17	11	59
General Architectural Engineering Requirements	62	13	81	8	102
Architectural Engineering Program Requirements	45	26	30	2	58
Total	160	82	128	21	232

General Architectural Engineering Requirements متطلبات الهندسة المعمارية العامة

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
ARE111	Principles of Architecture Design Studio	3	0	4	0	4	
ARE114	Architectural representation	2	0	3	0	3	BAS025
ARE121	Architectural Design (1)	3	0	6	0	6	ARE111,ARE114
ARE211	Architectural Design (2)	3	0	6	0	6	ARE121

ARE221	Architectural Design (3)	3	0	6	0	6	ARE211
ARE311	Architectural Design (4)	3	0	6	0	6	ARE221
ARE321	Architectural Design (5)	3	0	6	0	6	ARE311
ARE411	Architectural Design (6)	3	0	6	0	6	ARE321
ARE112	Building Construction (1): Conventional Construction Systems	3	1	4	0	5	
ARE122	Building Construction (2): Finishing Works	3	1	4	0	5	ARE112
ARE212	Building Construction (3): Advanced Construction and Finishing Works	3	1	4	0	5	ARE122
ARE222	Working Design (1): Execution Drawings Coordination, Annotation and Coding	3	0	6	0	6	ARE212
ARE312	Working Design (2): Blow- Ups Detailing, Items Specifications and BOQs	3	0	6	0	6	ARE222
ARE325	Architecture Graduation Project (1)	2	0	2	0	2	115 Cr. hrs., ARE311
ARE412	Architecture Graduation Project (2)	6	0	12	0	12	ARE325
ARE217	Field Training (1)	0	0	0	0	0	
ARE315	Field Training (2)	0	0	0	0	0	ARE217
ARE113	History of Arts and Architecture (1): Ancient Civilizations	2	2	0	0	2	
ARE124	History of Arts and Architecture (2): History of Islamic And Western Architecture	2	2	0	0	2	ARE113
ARE214	Design Methods	2	2	0	0	2	ARE124
ARE223	Theory and Philosophy of Contemporary Architecture	2	2	0	0	2	ARE214
ARE123	Computer Applications in Architecture (1)	3	0	0	4	4	ARE114
ARE213	Computer Applications in	3	0	0	4	4	ARE123

	Architecture (2)						
ARE215	History and Theory of Planning	2	2	0	0	2	
Total		62	13	81	8	102	

Minor Architectural Engineering Requirements متطلبات الهندسة المعمارية التخصصية

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
ARE115	Control of Thermal Environment	2	1	1	0	2	
CVE115	Properties of Construction Materials for Architecture Engineering	2	2	1	1	4	
CVE126	Structural Analysis for Architecture Engineering	2	2	0	0	2	
CVE127	Engineering Surveying for Architecture Engineering	2	1	1	1	3	
ARE313	Technical Installations	2	1	2	0	3	
CVE317	Steel structures	2	1	1	0	2	CVE126
ARE216	Urban Planning and Design	3	1	3	0	4	
CVE226	Reinforced Concrete and Foundation	2	1	1	0	2	CVE126
CCE325	Lighting and acoustics in architecture	2	1	2	0	3	
ARE224	Landscape Design	3	1	3	0	4	ARE216
ARE314	Building Information Modeling (BIM)	2	1	2	0	3	ARE213
ARE322	Housing Studies	3	1	3	0	4	ARE216
ARE323	Ergonomics (Designing Livable Spaces) and Interior Design Principles	3	1	3	0	4	ARE221
ARE414	Architectural & Urban Legislations	2	2	0	0	2	
ARE324	Principles of Parametric Design	2	1	1	0	2	ARE213
ARE413	Execution Documents	2	1	1	0	2	ARE312
	Minor Requirements (Elective A)	2	2	0	0	2	
	Minor Requirements (Elective A)	2	2	0	0	2	
	Minor Requirements (Elective B1)	2	1	3	0	4	
	Minor Requirements (Elective B2)	3	2	2	0	4	
Total		45	26	30	2	58	
Pool 1 of Architectural Engineering Elective Courses (Elective A)							
ARE171	Architectural Criticism & Projects Evaluation	2	2	0	0	2	

ARE172	Building Economics	2	2	0	0	2	
ARE173	Advanced Technical Installations In Buildings	2	2	0	0	2	
ARE174	Maintenance of Buildings	2	2	0	0	2	
ARE175	Feasibility Studies of Urban Projects	2	2	0	0	2	
Pool 2 of Architectural Engineering Elective Courses (Elective B)							
Elective B1							
ARE271	Sustainable Architecture	2	1	3	0	4	
ARE273	Urban Renewal	2	1	3	0	4	
Elective B2							
ARE371	Conservation of Urban Heritage	3	2	2	0	4	
ARE373	Human Behavior and the Built Environment	3	2	2	0	4	

الخطة الدراسية لبرنامج الهندسة المعمارية

• Study Plan of Architectural Engineering Program

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
Semester 1							
BAS011	Mathematics (1)	3	2	2	0	4	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS013	Statics	3	2	2	0	4	
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
CCE011	Computing in Engineering	2	2	1	1	4	
NUB	Complete hours from NUB Compulsory	1	1	0	0	1	
Total		18	13	10	3	26	
Semester 2							
BAS021	Mathematics (2)	3	2	2	0	4	BAS011
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS024	Fundamentals of Engineering	2	2	0	0	2	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
MPE021	Production Engineering	2	2	0	2	4	
ENG111	English (1)	1	1	0	0	1	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	14	5	7	26	
Semester 3							
ARE111	Principles of Architecture Design Studio	3	0	4	0	4	
ARE112	Building Construction (1): Conventional Construction Systems	3	1	4	0	5	
ARE113	History of Arts and Architecture (1): Ancient Civilizations	2	2	0	0	2	
ARE114	Architectural representation	2	0	3	0	3	BAS025
ARE115	Control of Thermal Environment	2	1	1	0	2	
CVE115	Properties of Construction Materials for Architecture Engineering	2	2	1	1	4	
BAS112	Building Safety and Fire Protection	2	2	0	0	2	
	Structures and Properties of Materials Elective	2	2	0	1	3	
Total		18	10	13	2	25	
Semester 4							
ARE121	Architectural Design (1)	3	0	6	0	6	ARE111,ARE114
ARE122	Building Construction (2): Finishing Works	3	1	4	0	5	ARE112
ARE123	Computer Applications in Architecture (1)	3	0	0	4	4	ARE114
ARE124	History of Arts and Architecture (2): History of Islamic And Western Architecture	2	2	0	0	2	ARE113

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
CVE126	Structural Analysis for Architecture Engineering	2	2	0	0	2	
CVE127	Engineering Surveying for Architecture Engineering	2	1	1	1	3	
ENG112	English (2)	1	1	0	0	1	ENG111
	Project Management Elective	2	2	1	0	3	
Total		18	9	12	5	26	
Semester 5							
ARE211	Architectural Design (2)	3	0	6	0	6	ARE121
ARE212	Building Construction (3): Advanced Construction and Finishing Works	3	1	4	0	5	ARE122
ARE213	Computer Applications in Architecture (2)	3	0	0	4	4	ARE123
ARE214	Design Methods	2	2	0	0	2	ARE124
ARE215	History and Theory of Planning	2	2	0	0	2	
ARE216	Urban Planning and Design	3	1	3	0	4	
ARE217	Field Training (1)	0	0	0	0	0	
	Engineering Economy Elective	2	2	1	0	3	
Total		18	8	14	4	26	
Semester 6							
ARE221	Architectural Design (3)	3	0	6	0	6	ARE211
ARE222	Working Design (1): Execution Drawings Coordination, Annotation and Coding	3	0	6	0	6	ARE212
ARE223	Theory and Philosophy of Contemporary Architecture	2	2	0	0	2	ARE214
ARE224	Landscape Design	3	1	3	0	4	ARE216
CVE226	Reinforced Concrete and foundation	2	1	1	0	2	CVE126
NUB	Complete hours from NUB	3	3	0	0	3	

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
	Compulsory						
ENG113	English (3)	2	2	0	0	2	ENG112
Total		18	9	16	0	25	
Semester 7							
ARE311	Architectural Design (4)	3	0	6	0	6	ARE221
ARE312	Working Design (2): Blow-Ups Detailing, Items Specifications and BOQs	3	0	6	0	6	ARE222
ARE313	Technical Installations	2	1	2	0	3	
ARE314	Building Information Modeling (BIM)	2	1	2	0	3	ARE213
ARE315	Field Training (2)	0	0	0	0	0	ARE217
CCE325	Lighting and acoustics in architecture	2	1	2	0	3	
CVE317	Steel structures	2	1	1	0	2	CVE126
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		17	7	19	0	26	
Semester 8							
ARE321	Architectural Design (5)	3	0	6	0	6	ARE311
ARE322	Housing Studies	3	1	3	0	4	ARE216
ARE323	Ergonomics (Designing Livable Spaces) and Interior Design Principles	3	1	3	0	4	ARE221
ARE324	Principles of Parametric Design	2	1	1	0	2	ARE213
ARE325	Architecture Graduation Project (1)	2	0	2	0	2	115 Cr. Hrs., ARE311
	Minor Requirements (Elective B1)	2	1	3	0	4	
	Minor Requirements (Elective B2)	3	2	2	0	4	
Total		18	6	20	0	26	
Semester 9							
ARE411	Architectural Design (6)	3	0	6	0	6	ARE321

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
ARE412	Architecture Graduation Project (2)	6	0	12	0	12	ARE325
ARE413	Execution Documents	2	1	1	0	2	ARE312
ARE414	Architectural & Urban Legislations	2	2	0	0	2	
	Minor Requirements (Elective A)	2	2	0	0	2	
	Minor Requirements (Elective A)	2	2	0	0	2	
Total		17	7	19	0	26	

3-Communications and Computers Engineering Program

Program Description

The Program Vision is to offer high quality, student-centered learning environment such that the programs becomes one of the primary selection for qualified undergraduate engineering students in Egypt. The mission of the Bachelor of Science in Communication and Computer engineering technology program is to prepare innovative graduates able to interact with the challenges in diverse domains of his specialty, locally and regionally. He should satisfy the requirements of the society in governmental authorities and public and private sectors. The Communication and Computer technology program aims at providing future engineers with appropriate theoretical knowledge and technical skills to respond to professional market demands in the fields of Communication and Computer engineering technology. The Communication and Computer Engineering Program is where computer programming, networks, and communication engineering merge together to prepare the Computer and Communication Engineer of the future.

Career Prospects

Students who earn their CCE BSc degree gain a profound understanding of communications and Computers engineering built on a thorough background of physical science, mathematics and technology. Coursework prepares students for careers in government agencies, all local and international industries – from communication systems and computer programing and network security-- or for future study in graduate schools.

• List of Communications and Computers Engineering Program Requirements courses

Course Title		Credits	Contact Hours			
		CH	Lec	Tut	Lab	TT
Nahda University Requirements		14	14	0	0	14
Faculty of Engineering Requirements		41	32	18	11	61
Major Requirements of Communications and Computers		60	44	16	26	86
Minor Requirements of Communications and Computers	Communications Engineering Division	45	29	17	22	68
	Total	160	119	51	59	229
	Computers Engineering Division	45	29	17	21	67
	Total	160	119	51	58	228

Major Requirements of Communications and Computers Engineering Program

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
CCE111	Electrical Circuits (1)	3	2	1	2	5	BAS022
CCE112	Computer Programming	3	2	0	2	4	CCE011
CCE121	Electrical Circuits (2)	3	2	0	2	4	CCE111
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
CCE122	Electronic Devices	3	2	1	2	5	CCE111
CCE123	Computer Organization and Architecture	3	2	1	1	4	CCE112
CCE211	Electromagnetic Fields	2	2	1	1	4	BAS111,CCE121
CCE212	Electrical Measurements and Instrumentation	3	2	0	2	4	CCE111
CCE213	Signal Analysis	3	2	1	1	4	CCE121,BAS121
CCE214	Electronics Engineering	3	2	1	1	4	CCE122
CCE215	Logic Circuits Design	3	2	1	1	4	CCE121,CCE122
CCE217	Field Training (1)	0	0	0	0	0	
CCE216	Industrial Electronics	2	2	0	1	3	CCE122
CCE223	Microprocessors and Applications	3	2	1	1	4	CCE123
CCE224	Advanced Logic Circuits Design	2	2	1	1	4	CCE215
CCE225	Electrical Communications	3	2	1	1	4	CCE213
CCE222	Digital Signal Processing	3	2	1	1	4	CCE213
BAS211	Mathematics (5)	2	2	1	0	3	BAS121
CCE312	Computer Networks	3	2	1	1	4	CCE223
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316

CCE311	Field Training (2)	0	0	0	0	0	CCE217
CCE323	Embedded Systems	3	2	1	1	4	CCE313
Total		60	44	16	26	86	

متطلبات برنامج هندسة الاتصالات والحاسبات التخصصية

Minor Requirements of Communications and Computers Engineering Program

i. Minor Requirements of Communications Engineering Division

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
CCE221	Data Structure and Algorithms	2	2	1	1	4	CCE112
CCE313	Digital Circuit design	3	2	2	0	4	CCE224
CCE314	Digital Communication Systems	3	2	1	2	5	CCE225
CCE315	Antenna and Wave Propagation	3	2	1	1	4	CCE211
CCE415	Satellite Communication	2	2	1	1	4	CCE225
CCE319	Communication Networks	3	2	1	2	5	CCE214
	Communications Engineering Elective (A)	3	2	1	1	4	
CCE321	Communications and Computers Graduation Project (1)	3	1	0	4	5	115 Cr Hrs.
CCE412	Computer and Network Security	2	2	1	0	3	CCE312
CCE326	Optical communication Systems	3	2	1	1	4	CCE225
CCE324	Microwave Devices and Circuits	3	2	1	1	4	CCE315,CCE214
	Communications Engineering Elective (B)	3	2	1	1	4	
CCE411	Communications and Computers Graduation Project (2)	3	0	0	6	6	CCE321
CCE322	Computer Vision	3	2	2	0	4	CCE112,CCE222

CCE413	Information and Coding Theory	3	2	2	0	4	CCE222
CCE414	Mobile communications	3	2	1	1	4	CCE314
Total		45	29	17	22	68	

ii. Minor Requirements of Computers Engineering Division

Minor Requirements of Communications and Computers Engineering (Computers Engineering Division)

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
CCE221	Data Structure and Algorithms	2	2	1	1	4	CCE112
CCE313	Digital Circuit design	3	2	2	0	4	CCE224
CCE316	Operating Systems	3	2	1	2	5	CCE223
CCE317	Data Base Systems	3	2	1	1	4	CCE221
CCE327	Cloud Computing	3	2	1	1	4	CCE312
CCE318	Software Engineering	3	2	2	0	4	CCE112
CCE321	Communications and Computers Graduation Project (1)	3	1	0	4	5	115 Cr Hrs.
CCE412	Computer and Network Security	2	2	1	0	3	CCE312
CCE328	Big-Data Analytics	3	2	1	1	4	CCE317
CCE417	Computational Intelligence	3	2	0	2	4	BAS122,CCE112
CCE418	Internet Of Things	3	2	1	1	4	CCE317,CCE327
CCE411	Communications and Computers Graduation Project (2)	3	0	0	6	6	CCE321
CCE322	Computer Vision	3	2	2	0	4	CCE112,CCE222
CCE416	Data Mining	2	2	1	1	4	CCE328
	Computers Engineering Elective (A)	3	2	1	1	4	
	Computers Engineering Elective (B)	3	2	2	0	4	
Total		45	29	17	21	67	

Elective Courses Requirements of Communications and Computers Engineering

Code	Course Title	Cre dits	Contact Hours				Pre- requisites
		CH	L e c	T u t	L a b	T T	
Pool of Communications Engineering Elective Courses							
Pool A							
CCE171	VLSI Technology	3	2	2	0	4	CCE214
CCE173	Acoustics	3	2	2	0	4	BAS022
ERE224	Power Electronics (1)	3	2	0	2	4	CCE122
MPE326	Quality Control	3	2	2	0	4	BAS122
ERE121	Energy Conversion	3	2	2	0	4	CCE111
Pool B							
CCE271	Telephony Systems	3	2	1	1	4	CCE225
CCE272	RADAR Systems	3	2	1	1	4	CCE211
CCE273	Integrated Circuits Design	3	2	1	1	4	CCE214
ERE221	Electrical Machines (1)	3	2	0	2	4	CCE211
ERE222	Electrical Power Engineering	3	2	1	1	4	CCE211
Pools of Computers Engineering Elective Courses							
Pool A							
CCE371	Object-Oriented Programming	3	2	1	1	4	CCE112
CCE372	Microcontrollers and Applications	3	2	1	1	4	CCE223
CCE373	Artificial Intelligence and its Applications	3	2	1	1	4	CCE318
Pool B							
CCE471	Selected Topics in Computer networks and Security	3	2	2	0	4	
CCE472	Selected Topics in Systems and Artificial Intelligence	3	2	2	0	4	
CCE473	Selected Topics in Data Bases	3	2	2	0	4	
CCE474	Selected Topics in Distributed and Mobile Computing	3	2	2	0	4	

• **Proposed Study Plan of Communications and Computers Engineering Program**

a) Proposed Study Plan of Communications Engineering Division

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
Semester 1							
BAS011	Mathematics (1)	3	2	2	0	4	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS013	Statics	3	2	2	0	4	
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
CCE011	Computing in Engineering	2	2	1	1	4	
NUB	Complete hours from NUB Compulsory	1	1	0	0	1	
Total		18	13	10	3	26	
Semester 2							
BAS021	Mathematics (2)	3	2	2	0	4	BAS011
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS024	Fundamentals of Engineering	2	2	0	0	2	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015
MPE021	Production Engineering	2	2	0	2	4	
ENG111	English (1)	1	1	0	0	1	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	14	5	7	26	
Semester 3							
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS112	Building Safety and Fire Protection	2	2	0	0	2	
CCE111	Electrical Circuits (1)	3	2	1	2	5	BAS022
CCE112	Computer Programming	3	2	0	2	4	CCE011
	Structures and Properties of Materials Elective	2	2	0	1	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	16	2	5	23	
Semester 4							
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
BAS122	Probability and Statistics	2	2	1	0	3	
CCE121	Electrical Circuits (2)	3	2	0	2	4	CCE111
CCE122	Electronic Devices	3	2	1	2	5	CCE111
CCE123	Computer Organization and Architecture	3	2	1	1	4	CCE112
ENG112	English (2)	1	1	0	0	1	ENG111
	Project Management Elective	2	2	1	0	3	
	Engineering Economy Elective	2	2	1	0	3	
Total		18	15	7	4	26	
Semester 5							
CCE211	Electromagnetic Fields	2	2	1	1	4	BAS111,CCE121
CCE212	Electrical Measurements and Instrumentation	3	2	0	2	4	CCE111
CCE213	Signal Analysis	3	2	1	1	4	CCE121,BAS121
CCE214	Electronics Engineering	3	2	1	1	4	CCE122
CCE215	Logic Circuits Design	3	2	1	1	4	CCE121,CCE122
CCE216	Industrial Electronics	2	2	0	1	3	CCE122
CCE217	Field Training (1)	0	0	0	0	0	
BAS211	Mathematics (5)	2	2	1	0	3	BAS121
Total		18	14	6	6	26	
Semester 6							
CCE221	Data Structure and Algorithms	2	2	1	1	4	CCE112
CCE222	Digital Signal Processing	3	2	1	1	4	CCE213
CCE223	Microprocessors and Applications	3	2	1	1	4	CCE123
CCE224	Advanced Logic Circuits Design	2	2	1	1	4	CCE215
CCE225	Electrical Communications	3	2	1	1	4	CCE213
ENG113	English (3)	2	2	0	0	2	ENG112
	Communications Engineering Elective (A)	3	2	1	1	4	

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
Total		18	14	6	6	26	
Semester 7							
CCE311	Field Training (2)	0	0	0	0	0	CCE217
CCE312	Computer Networks	3	2	1	1	4	CCE223
CCE313	Digital Circuit design	3	2	2	0	4	CCE224
CCE314	Digital Communication Systems	3	2	1	2	5	CCE225
CCE315	Antenna and Wave Propagation	3	2	1	1	4	CCE211
CCE319	Communication Networks	3	2	1	2	5	CCE214
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
Total		18	12	6	8	26	
Semester 8							
CCE321	Communications and Computers Graduation Project (1)	3	1	0	4	5	115 Cr Hrs.
CCE322	Computer Vision	3	2	2	0	4	CCE112,CCE222
CCE323	Embedded Systems	3	2	1	1	4	CCE313
CCE324	Microwave Devices and Circuits	3	2	1	1	4	CCE315,CCE214
CCE326	Optical communication Systems	3	2	1	1	4	CCE225
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
Total		18	11	5	9	25	
Semester 9							
CCE411	Communications and Computers Graduation Project (2)	3	0	0	6	6	CCE321
CCE412	Computer and Network Security	2	2	1	0	3	CCE312
CCE413	Information and Coding Theory	3	2	2	0	4	CCE222
CCE414	Mobile communications	3	2	1	1	4	CCE314
CCE415	Satellite Communication	2	2	1	1	4	CCE225
	Communications Engineering Elective (B)	3	2	1	1	4	
Total		16	10	6	9	25	

b) Proposed Study Plan of Computers Engineering Division

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
Semester 1							
BAS011	Mathematics (1)	3	2	2	0	4	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS013	Statics	3	2	2	0	4	
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
CCE011	Computing in Engineering	2	2	1	1	4	
NUB	Complete hours from NUB Compulsory	1	1	0	0	1	
Total		18	13	10	3	26	
Semester 2							
BAS021	Mathematics (2)	3	2	2	0	4	BAS011
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS024	Fundamentals of Engineering	2	2	0	0	2	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015
MPE021	Production Engineering	2	2	0	2	4	
ENG111	English (1)	1	1	0	0	1	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	14	5	7	26	
Semester 3							
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS112	Building Safety and Fire Protection	2	2	0	0	2	
CCE111	Electrical Circuits (1)	3	2	1	2	5	BAS022
CCE112	Computer Programming	3	2	0	2	4	CCE011
	Structures and Properties of Materials Elective	2	2	0	1	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	16	2	5	23	

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
Semester 4							
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
BAS122	Probability and Statistics	2	2	1	0	3	
CCE121	Electrical Circuits (2)	3	2	0	2	4	CCE111
CCE122	Electronic Devices	3	2	1	2	5	CCE111
CCE123	Computer Organization and Architecture	3	2	1	1	4	CCE112
ENG112	English (2)	1	1	0	0	1	ENG111
	Project Management Elective	2	2	1	0	3	
	Engineering Economy Elective	2	2	1	0	3	
Total		18	15	6	5	26	
Semester 5							
CCE211	Electromagnetic Fields	2	2	1	1	4	BAS111,CCE121
CCE212	Electrical Measurements and Instrumentation	3	2	0	2	4	CCE111
CCE213	Signal Analysis	3	2	1	1	4	CCE121,BAS121
CCE214	Electronics Engineering	3	2	1	1	4	CCE122
CCE215	Logic Circuits Design	3	2	1	1	4	CCE121,CCE122
CCE216	Industrial Electronics	2	2	0	1	3	CCE122
CCE217	Field Training (1)	0	0	0	0	0	
BAS211	Mathematics (5)	2	2	1	0	3	BAS121
Total		18	14	5	7	26	
Semester 6							
CCE221	Data Structure and Algorithms	2	2	1	1	4	CCE112
CCE222	Digital Signal Processing	3	2	1	1	4	CCE213
CCE223	Microprocessors and Applications	3	2	1	1	4	CCE123
CCE224	Advanced Logic Circuits Design	2	2	1	1	4	CCE215
CCE225	Electrical Communications	3	2	1	1	4	CCE213
ENG113	English (3)	2	2	0	0	2	ENG112
	Computers Engineering Elective (A)	3	2	1	1	4	
Total		18	14	6	6	26	
Semester 7							
CCE311	Field Training (2)	0	0	0	0	0	CCE217

Code	Course Title	Credits	Contact Hours				Pre-requisites
		CH	Lec	Tut	Lab	TT	
CCE312	Computer Networks	3	2	1	1	4	CCE223
CCE313	Digital Circuit design	3	2	2	0	4	CCE224
CCE316	Operating Systems	3	2	1	2	5	CCE223
CCE317	Data Base Systems	3	2	1	1	4	CCE221
CCE318	software Engineering	3	2	2	0	4	CCE112
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
Total		18	12	7	6	25	
Semester 8							
CCE321	Communications and Computers Graduation Project (1)	3	1	0	4	5	115 Cr Hrs.
CCE322	Computer Vision	3	2	2	0	4	CCE112,CCE222
CCE323	Embedded Systems	3	2	1	1	4	CCE313
CCE327	Cloud Computing	3	2	1	1	4	CCE312
CCE328	Big-Data Analytics	3	2	1	1	4	CCE317
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
Total		18	11	5	9	25	
Semester 9							
CCE411	Communications and Computers Graduation Project (2)	3	0	0	6	6	CCE321
CCE412	Computer and Network Security	2	2	1	0	3	CCE312
CCE416	Data Mining	2	2	1	1	4	CCE328
CCE417	Computational Intelligence	3	2	0	2	4	BAS122,CCE112
CCE418	Internet Of Things	3	2	1	1	4	CCE317,CCE327
	Computers Engineering Elective (B)	3	2	2	0	4	
Total		16	10	5	10	25	

4-Mechatronics Engineering Program

Program Description

Mechatronics is a multidisciplinary field of science that includes a combination of mechanical engineering, electronics, computer engineering, telecommunications engineering, systems engineering and control engineering. As technology advances, the subfields of engineering multiply and adapt. This program is capable to enrich the student's basic theoretical and practical knowledge of mechatronics system components, and design methodologies of mechatronics systems.

Career Prospects

The graduate of the program is expected to get a job in one of the following positions:

1. Embedded systems
2. Projects using Heavy earthmoving equipment and hydraulic and pneumatic machines
3. Sales engineer for robotics and automation
4. automated manufacturing and production systems,
5. Control engineer
6. Maintenance engineer
7. Robotics and automation industry

• List of Mechatronics Engineering Program Requirements courses

Course Title	Credits	Contact Hours			
	CH	Lec	Tut	Lab	TT
Nahda University Requirements	14	14	0	0	14
Faculty of Engineering Requirements	41	32	18	11	61
General Mechanical Engineering Requirements	60	42	21	27	90
Mechatronics Engineering Program Requirements	45	27	3	35	65
Total	160	115	42	73	230

General Mechanical Engineering Requirements Courses

Code	Course Title	Cred its	Contact Hours				Prerequisites
		CH	L e c	T u t	L a b	T T	
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
GME111	Rigid body dynamics	2	2	0	1	3	BAS023
GME113	Thermodynamics (1)	3	2	2	0	4	BAS014
GME122	Thermodynamics (2)	3	2	2	0	4	GME113
GME221	Heat Transfer	3	2	0	2	4	GME113
GME212	Fluid Mechanics and Turbo-Machinery	3	2	0	2	4	GME113
MTE212	Measurements and Instrumentation	2	1	0	3	4	GME113
GME112	Mechanical Engineering Drawing	3	0	4	2	6	BAS025
GME211	Machine Construction	3	2	2	0	4	GME112, BAS013
MPE314	Machine Elements Design	3	2	2	0	4	GME211
GME123	Mechanics of Machines	3	2	2	0	4	GME111
GME223	Mechanical Vibrations	3	2	2	0	4	GME111
GME213	Metallurgy and Material Testing	3	2	0	2	4	
GME222	Casting and Welding Technology (1)	2	1	0	3	4	GME213
GME121	Manufacturing Technology (1)	3	2	0	2	4	MPE021
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
MTE314	Hydraulics and Pneumatics Control	3	2	0	2	4	ERE324, GME212
CCE113	Electrical Circuits	2	2	1	1	4	BAS022
ERE122	Electrical Machines	2	2	1	1	4	CCE113
CCE218	Introduction to electronics	2	2	1	1	4	CCE113
	Mechanical Engineering Requirement Elective	2	2	0	1	3	
Total		60	42	21	27	90	
Pool of Mechanical Engineering Requirement Elective							
GME171	Maintenance Planning and Scheduling	2	2	1	0	3	
MTE171	Introduction to Automotive	2	2	0	1	3	
MTE172	Industrial Automation	2	2	0	1	3	

Mechatronics Engineering Program Requirements Courses

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
MTE213	Introduction to Mechatronics	3	2	0	2	4	CCE112
MTE313	Industrial Robotics	3	2	0	2	4	GME123
MTE323	Design of Autonomous systems	4	2	2	2	6	MTE313,CCE333
MTE312	Mechatronic Systems Design	3	2	0	2	4	ERE316,MTE213
MTE322	Sensors and Measurement Systems	3	2	0	2	4	MTE212
CCE112	Computer Programming	3	2	0	2	4	CCE011
CCE332	Digital & Logic Circuits Design	3	2	0	2	4	CCE113
CCE333	Computer Vision for Mechatronics	3	2	0	2	4	MTE213
CCE417	Computational Intelligence	3	2	0	2	4	BAS122,CCE112
CCE334	Introduction to Embedded Systems	3	2	0	2	4	CCE112
ERE327	Power Electronics and Motor Drives	3	2	0	2	4	ERE122
	Mechatronics Engineering Elective (1)	2	2	1	1	4	
	Mechatronics Engineering Elective (2)	3	2	0	2	4	
MTE321	Mechatronics Graduation Project (1)	3	1	0	4	5	MTE312
MTE411	Mechatronics Graduation Project (2)	3	0	0	6	6	MTE321
MTE211	Field training (1)	0	0	0	0	0	
MTE311	Field training (2)	0	0	0	0	0	MTE211
Total		45	27	3	35	65	
Pool 1 of Mechatronics Engineering Elective Courses							
MTE173	Embedded systems for Automotive	2	2	1	1	4	CCE334
MTE174	Advanced Manufacturing	2	2	1	1	4	GME121

	Technology and Prototyping						
MTE175	Motion Control	2	2	1	1	4	ERE324
CCE226	Industrial Electronics for Mechatronics	2	2	1	1	4	CCE218
CCE436	Advanced Computer Programming	2	2	1	1	4	CCE112
CCE437	Industrial Networks	2	2	0	2	4	
Pool 2 of Mechatronics Engineering Elective Courses							
BAS271	Engineering Optimization	3	2	2	0	4	BAS121
MTE271	Modeling and Control of Electrohydraulic Systems	3	2	0	2	4	ERE324, MTE314
MTE272	Selected topics in industrial mechatronics	3	2	2	0	4	
MTE273	MEMS Design	3	2	0	2	4	MTE322, CCE226
MTE274	Mechatronics in Rehabilitation Technology	3	2	0	2	4	MTE213
MTE275	Mechatronics in Automotive Application	3	2	0	2	4	MTE213

• **Study Plan of Mechatronics Engineering Program**

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
Semester 1							
BAS011	Mathematics (1)	3	2	2	0	4	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS013	Statics	3	2	2	0	4	
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
CCE011	Computing in Engineering	2	2	1	1	4	
NUB	Complete hours from NUB Compulsory	1	1	0	0	1	
Total		18	13	10	3	26	
Semester 2							
BAS021	Mathematics (2)	3	2	2	0	4	BAS011

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS024	Fundamentals of Engineering	2	2	0	0	2	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015
MPE021	Production Engineering	2	2	0	2	4	
ENG111	English (1)	1	1	0	0	1	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	14	5	7	26	
Semester 3							
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS112	Building Safety and Fire Protection	2	2	0	0	2	
GME111	Rigid Body Dynamics	2	2	0	1	3	BAS023
GME112	Mechanical Engineering Drawing	3	0	4	2	6	BAS025
GME113	Thermodynamics (1)	3	2	2	0	4	BAS014
CCE113	Electrical Circuits	2	2	1	1	4	BAS022
	Structures and Properties of Materials Elective	2	2	0	1	3	
	Mechanical Engineering Requirement Elective	2	2	1	0	3	
Total		18	14	9	5	28	
Semester 4							
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
BAS122	Probability and Statistics	2	2	1	0	3	
GME121	Manufacturing Technology (1)	3	2	0	2	4	MPE021
GME122	Thermodynamics (2)	3	2	2	0	4	GME113
GME123	Mechanics of Machines	3	2	2	0	4	GME111
ERE122	Electrical Machines	2	2	1	1	4	CCE113
ENG112	English (2)	1	1	0	0	1	ENG111
	Project Management Elective	2	2	1	0	3	

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
Total		18	15	8	3	26	
Semester 5							
GME211	Machine Construction	3	2	2	0	4	GME112,BAS013
GME212	Fluid Mechanics and Turbo-Machinery	3	2	0	2	4	GME113
GME213	Metallurgy and Material Testing	3	2	0	2	4	
MTE211	Field Training (1)	0	0	0	0	0	
MTE212	Measurement and Instrumentation	2	1	0	3	4	GME113
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
CCE218	Introduction to Electronics	2	2	1	1	4	CCE113
CCE112	Computer Programming	3	2	0	2	4	CCE011
Total		19	13	3	12	28	
Semester 6							
GME221	Heat Transfer	3	2	0	2	4	GME113
GME222	Casting and Welding Technology (1)	2	1	0	3	4	GME213
GME223	Mechanical Vibrations	3	2	2	0	4	GME111
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
MTE213	Introduction to Mechatronics	3	2	0	2	4	CCE112
ENG113	English (3)	2	2	0	0	2	ENG112
	Engineering Economy Elective	2	2	1	0	3	
Total		18	13	3	9	25	
Semester 7							
MTE311	Field Training (2)	0	0	0	0	0	MTE211
MTE312	Mechatronic Systems Design	3	2	0	2	4	ERE316,MTE213
MTE313	Industrial Robotics	3	2	0	2	4	GME123
MTE314	Hydraulics and Pneumatics Control	3	2	0	2	4	ERE324,GME212
MPE314	Machine Elements Design	3	2	2	0	4	GME211
CCE332	Digital & Logic Circuits	3	2	0	2	4	CCE113

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
	Design						
CCE333	Computer Vision for Mechatronics	3	2	0	2	4	MTE213
Total		18	12	2	10	24	
Semester 8							
MTE321	Mechatronics Graduation Project (1)	3	1	0	4	5	MTE312
MTE322	Sensors and Measurement Systems	3	2	0	2	4	MTE212
MTE323	Design of Autonomous systems	4	2	2	2	6	MTE313,CCE333
CCE334	Introduction to Embedded Systems	3	2	0	2	4	CCE112
ERE327	Power Electronics and Motor Drives	3	2	0	2	4	ERE122
	Mechatronics Engineering Elective (1)	2	2	1	1	4	
Total		18	11	3	13	27	
Semester 9							
MTE411	Mechatronics Graduation Project (2)	3	0	0	6	6	MTE321
CCE417	Computational Intelligence	3	2	0	2	4	BAS122,CCE112
	Mechatronics Engineering Elective (2)	3	2	0	2	4	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		15	10	0	10	20	

5- Mechanical Engineering Program

Program Description

The Department of Mechanical Engineering (Mechanical Production Division) program prepares students for entry level professional practice in mechanical design and production engineering, both locally and internationally.

The Department of Mechanical Engineering (Mechanical Production Division) program is one of the oldest engineering programs in Egyptian universities. The program flourished with the boom in Egyptian industry during the sixties of the twentieth century. Recently, there is an increasing need for the modernization of industry in Egypt to cope with the global challenges of designing and producing cost effective products that can compete with the international market. Consequently, the Department of Mechanical Engineering (Mechanical Production Division) program needs to be modernized as well. The program developed at Nahda University equips students with necessary competencies contemporary to the current industry. It also inspires graduates for self- learning to cope with the requirements of ever-changing career path after their graduation.

Career Prospects

Design and Production Engineering is one of the most recognized disciplines in Egyptian industry. Design and Production engineers are needed in many industries aiming to design and produce all kinds of products, machines and equipment. Graduates work in all industrial sectors including engineering, metallurgical, petrochemical, textiles, furniture, etc. They can work as engineers in research and development, operations management, quality control, tool design, work study, cost analysis, process control, heat treatment, etc., Graduates can be specialized in a specific field of the following concentrations: Manufacturing engineering, Mechanical design, Industrial engineering and operations management, or Materials engineering.

• **List of Production Engineering Program Requirements Courses**

Course Title	Credits	Contact Hours			
	CH	Lec	Tut	Lab	TT
Nahda University Requirements	14	14	0	0	14
Faculty of Engineering Requirements	41	32	18	11	61
General Mechanical Engineering Requirements	60	42	21	27	90
Production Engineering Program Requirements	45	28	16	24	68
Total	160	116	55	62	233

متطلبات عامة لبرنامج الهندسة الميكانيكية (هندسة الانتاج)

General Mechanical Engineering Requirements Courses

Code	Course Title	Cred its	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
GME111	Rigid body dynamics	2	2	0	1	3	BAS023
GME113	Thermodynamics (1)	3	2	2	0	4	BAS014
GME122	Thermodynamics (2)	3	2	2	0	4	GME113
GME221	Heat Transfer	3	2	0	2	4	GME113
GME212	Fluid Mechanics and Turbo-Machinery	3	2	0	2	4	GME113
MTE212	Measurement and Instrumentation	2	1	0	3	4	GME113
GME112	Mechanical Engineering Drawing	3	0	4	2	6	BAS025
GME211	Machine Construction	3	2	2	0	4	GME112, BAS013
MPE314	Machine Elements Design	3	2	2	0	4	GME211
GME123	Mechanics of Machines	3	2	2	0	4	GME111
GME223	Mechanical Vibrations	3	2	2	0	4	GME111
GME213	Metallurgy and Material Testing	3	2	0	2	4	
GME222	Casting and Welding Technology (1)	2	1	0	3	4	GME213
GME121	Manufacturing Technology (1)	3	2	0	2	4	MPE021
ERE31	Modelling and Simulation of Engineering	3	2	0	2	4	BAS121

6	Systems						
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
MTE314	Hydraulics and Pneumatics Control	3	2	0	2	4	ERE324,GME 212
CCE113	Electrical Circuits	2	2	1	1	4	BAS022
ERE122	Electrical Machines	2	2	1	1	4	CCE113
CCE218	Introduction to electronics	2	2	1	1	4	CCE113
	Mechanical Engineering Requirement Elective	2	2	0	1	3	
Total		60	42	21	27	90	
Pool of Mechanical Engineering Requirement Elective							
GME171	Maintenance Planning and Scheduling	2	2	1	0	3	
MTE171	Introduction to Automotive	2	2	0	1	3	
MTE172	Industrial Automation	2	2	0	1	3	

متطلبات تخصصية لبرنامج هندسة الإنتاج

Production Engineering Program Requirements Courses

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
MPE313	Casting and Welding Technology (2)	2	1	0	3	4	GME222
MPE322	Mechanical System Design	3	2	1	1	4	MPE314,MTE314
MPE323	Metal Forming Theory, Technology, Machines and Dies	3	2	1	2	5	GME121
MPE312	Metal Cutting Theory, Machines and Technology	4	2	2	2	6	GME121
MPE325	Design of Tools and Production Facilities	3	2	2	0	4	MPE312
MPE324	Metrology and Measuring Instruments	3	2	0	2	4	

MPE412	Computerized Numerical Control Machine Tools	2	2	1	1	4	MPE312
MPE413	Operations Research	3	2	2	0	4	BAS021,BAS122
MPE221	Operations Management	2	2	1	0	3	
MPE326	Quality Control	3	2	2	0	4	BAS122
	Mechanical Design Concertation Elective (1)	3	2	1	1	4	
	Manufacturing Concertation Elective (2)	6	4	2	2	8	
	Operation and management Concertation Elective (3)	2	2	1	0	3	
MPE321	Mechanical Design and Production Graduation Project (1)	3	1	0	4	5	Elective (1),(2)
MPE411	Mechanical Design and Production Graduation Project (2)	3	0	0	6	6	MPE321
MPE211	Field training (1)	0	0	0	0	0	
MPE311	Field training (2)	0	0	0	0	0	MPE211
Total		45	28	16	24	68	
Pool of Mechanical Design Concertation Elective (1)							
MPE172	Introduction to Finite Elements	3	2	2	0	4	BAS121,GME123
MPE173	Noise and Vibration Control	3	2	1	1	4	GME223
MPE174	Design Optimization	3	2	1	1	4	BAS121,MPE314
MPE175	Product Design and Development	3	2	1	1	4	
MPE176	Selected Topics in Mechanical Design	3	2	1	1	4	
Pool of Manufacturing Concertation Elective (2)							
MPE272	Product Life Cycle Management	3	2	1	1	4	

MPE273	Advanced Topics in CNC Machine Tools	3	2	1	1	4	
MPE274	Selected Topics in Manufacturing	3	2	1	1	4	
MPE275	Computer Integrated Manufacturing	3	2	1	1	4	
MPE276	Advanced Manufacturing Technology	3	2	1	1	4	
MPE277	Selected Topics in Metal Forming	3	2	1	1	4	
Pool of Operation and management Concertation Elective (3)							
MPE372	Work Study	2	2	1	0	3	BAS122
MPE373	Facilities Planning	2	2	1	0	3	BAS122
MPE374	Selected Topics in planning and management	2	2	1	0	3	

الخطة الدراسية لبرنامج هندسة الانتاج

• Study Plan of Production Engineering Program

Code	Course Title	Credits	Contact Hours				Pre- requisites
		CH	Lec	Tut	Lab	TT	
Semester 1							
BAS011	Mathematics (1)	3	2	2	0	4	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS013	Statics	3	2	2	0	4	
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
CCE011	Computing in Engineering	2	2	1	1	4	
NUB	Complete hours from NUB Compulsory	1	1	0	0	1	
Total		18	13	10	3	26	

Semester 2							
BAS021	Mathematics (2)	3	2	2	0	4	BAS011
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS024	Fundamentals of Engineering	2	2	0	0	2	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015
MPE021	Production Engineering	2	2	0	2	4	
ENG111	English (1)	1	1	0	0	1	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	14	5	7	26	
Semester 3							
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS112	Building Safety and Fire Protection	2	2	0	0	2	
GME111	Rigid body dynamics	2	2	0	1	3	BAS023
GME112	Mechanical Engineering Drawing	3	0	4	2	6	BAS025
GME113	Thermodynamics (1)	3	2	2	0	4	BAS014
CCE113	Electrical Circuits	2	2	1	1	4	BAS022
	Structures and Properties of Materials Elective	2	2	0	1	3	
	Mechanical Engineering Requirement Elective	2	2	1	0	3	
Total		18	14	9	5	28	
Semester 4							
BAS121	Mathematics (4)	2	2	1	0	3	BAS111

BAS122	Probability and Statistics	2	2	1	0	3	
GME121	Manufacturing Technology (1)	3	2	0	2	4	MPE021
GME122	Thermodynamics (2)	3	2	2	0	4	GME113
GME123	Mechanics of Machines	3	2	2	0	4	GME111
ERE122	Electrical Machines	2	2	1	1	4	CCE113
ENG112	English (2)	1	1	0	0	1	ENG111
-	Project Management Elective	2	2	1	0	3	
Total		18	15	8	3	26	
Semester 5							
GME211	Machine Construction	3	2	2	0	4	BAS013,GME112
GME212	Fluid Mechanics and Turbo-Machinery	3	2	0	2	4	GME113
GME213	Metallurgy and Material Testing	3	2	0	2	4	
MPE211	Field training (1)	0	0	0	0	0	
MTE212	Measurements and Instrumentation	2	1	0	3	4	GME113
CCE218	Introduction to Electronics	2	2	1	1	4	CCE113
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
	Engineering Economy Elective	2	2	1	0	3	
Total		18	13	4	10	27	
Semester 6							
GME221	Heat Transfer	3	2	0	2	4	GME113
GME222	Casting and Welding Technology (1)	2	1	0	3	4	GME213

GME223	Mechanical Vibrations	3	2	2	0	4	GME111
MPE221	Operations Management	2	2	1	0	3	
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
	Mechanical Design Concertation Elective (1)	3	2	1	1	4	
ENG113	English (3)	2	2	0	0	2	ENG112
Total		18	13	4	8	25	
Semester 7							
MPE311	Field training (2)	0	0	0	0	0	MPE211
MPE312	Metal Cutting Theory, Machines and Technology	4	2	2	2	6	GME121
MPE313	Casting and Welding Technology (2)	2	1	0	3	4	GME222
MPE314	Machine Elements Design	3	2	2	0	4	GME211
MTE314	Hydraulics and Pneumatics Control	3	2	0	2	4	ERE324,GME212
	Manufacturing Concertation Elective (2)	3	2	1	1	4	
	Manufacturing Concertation Elective (2)	3	2	1	1	4	
Total		18	11	6	9	26	
Semester 8							
MPE321	Mechanical Design and Production Graduation Project (1)	3	1	0	4	5	Elective (1),(2)
MPE322	Mechanical	3	2	1	1	4	MPE314,MTE314

	System Design						
MPE323	Metal Forming Theory, Technology, Machines and Dies	3	2	1	2	5	GME121
MPE324	Metrology and Measuring Instruments	3	2	0	2	4	
MPE325	Design of Tools and Production Facilities	3	2	2	0	4	MPE312
MPE326	Quality Control	3	2	2	0	4	BAS122
Total		18	11	6	9	26	
Semester 9							
MPE411	Mechanical Design and Production Graduation Project (2)	3	0	0	6	6	MPE321
MPE412	Computerized Numerical Control Machine Tools	2	2	1	1	4	MPE312
MPE413	Operations Research	3	2	2	0	4	BAS021,BAS122
	Operation and management Concertation Elective (3)	2	2	1	0	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		16	12	4	7	23	

6- Electrical and Renewable Energy Engineering Program

Program Description

The program aims to meet the needs of renewable sources based power plants in the Arab Republic of Egypt, such as solar thermal energy, photovoltaic energy, and wind energy through the preparation of engineers familiar with the various types of these sources and how they work. In addition, it defines the problems and finds appropriate solutions for the effective use of new energy and renewable sources in different industrial areas, thereby reducing the dependence on fossil fuels and reducing environmental pollution. Labor market in Egypt desperately needs engineers with this background, particularly in the framework of the national effort to provide energy at affordable prices to citizens. In addition, this area attracts global attention, which makes it important to include in the higher education system in Egypt.

This program will graduate students that are capable to deal with different renewable energy sources- based power plants such as Wind, Photovoltaic, Solar thermal, Hydro, Fuel cell, Energy storage systems and the modern related technologies.

Career Prospects

This program is an electrical program. A multi-disciplinary program covers different topics to serve future engineers to understand the renewable energy sources, how they work, and how to use them in different applications. Electricity is the main reason in technology progress in all aspects of life. All factories, companies and institutions need maintenance engineer. Energy engineer is responsible for operation, maintenance, control and protection of electrical network, which consists of generation, transmission and distribution. Energy engineer plays an important role in running the factories that use electricity in manufacturing.

• **List of Electrical & Renewable Energy Engineering Program Requirements courses**

Course Title	Credits	Contact Hours			
	CH	Lec	Tut	Lab	TT
Nahda University Requirements	14	14	0	0	14
Faculty of Engineering Requirements	41	32	18	11	61
Major Requirements of Electrical & Renewable Energy	60	44	17	26	87
Minor Requirements of Electrical & Renewable Energy	45	27	19	22	68
Total	160	117	54	59	230

المقررات العامة لبرنامج الطاقة الكهربائية والمتجددة

Major Requirements of Electrical & Renewable Energy

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
GME113	Thermodynamics (1)	3	2	2	0	4	BAS014
ERE111	Energy Resources and Renewable Energy	2	2	1	0	3	
CCE111	Electrical Circuits (1)	3	2	1	2	5	BAS022
CCE112	Computer Programming	3	2	0	2	4	CCE011
CCE121	Electrical Circuits (2)	3	2	0	2	4	CCE111
ERE121	Energy Conversion	3	2	2	0	4	CCE111
CCE122	Electronic Devices	3	2	1	2	5	CCE111
CCE212	Electrical Measurements and Instrumentation	3	2	0	2	4	CCE111
CCE211	Electromagnetic Fields	2	2	1	1	4	BAS111,CCE121
ERE222	Electrical Power Engineering	3	2	1	1	4	CCE211
ERE221	Electrical Machines	3	2	0	2	4	CCE211

	(1)						
ERE224	Power Electronics (1)	3	2	0	2	4	CCE122
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
GME221	Heat Transfer	3	2	0	2	4	GME113
GME212	Fluid Mechanics and Turbo-Machinery	3	2	0	2	4	GME113
ERE223	Sensors and Transducers Systems	2	2	1	1	4	CCE212
ERE412	Microprocessor-Based Automated Systems	2	2	1	1	4	ERE324,ERE312
ERE211	Field Training (1)	0	0	0	0	0	
ERE311	Field Training (2)	0	0	0	0	0	ERE211
ERE313	Fundamentals of Power System Analysis	3	2	2	0	4	ERE222
ERE325	Power System Protection	3	2	2	0	4	ERE222
Total		60	44	17	26	87	

Minor Requirements of Electrical & Renewable Energy

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
ERE212	Fundamentals of Photovoltaic	3	2	1	2	5	CCE122
ERE317	Electrical Machines (2)	3	2	0	2	4	ERE221
ERE322	Economics of Generation, Transmission, and Operation	3	2	2	0	4	ERE111,ERE222
ERE312	Power Electronics (2)	3	2	0	2	4	ERE224

GME214	Aerodynamics	3	2	2	0	4	BAS023
ERE326	Utilization and Management of Electrical Energy	3	2	2	1	5	ERE314,ERE315
ERE314	Solar Energy	3	2	1	2	5	GME221
ERE315	Wind Energy	3	2	1	2	5	GME214
ERE323	Biomass and waste Conversion Technology	3	2	2	1	5	GME221
	Energy Elective (A)	3	2	2	0	4	
	Energy Elective (A)	3	2	2	0	4	
	Energy Elective (B)	3	2	2	0	4	
	Energy Elective (B)	3	2	2	0	4	
ERE321	Energy Graduation Project (1)	3	1	0	4	5	115 Cr. hrs.
ERE411	Energy Graduation Project (2)	3	0	0	6	6	ERE321
Total		45	27	19	22	68	

Elective Courses Requirements of Electrical & Renewable Energy

Code	Course Title	Cre dits	Contact Hours				Prerequisites
		CH	L e c	T u t	L a b	T T	
Pool of Energy Generation Concentration Elective Courses							
Energy Elective (A)							
ERE1 71	Storage Energy Technologies	3	2	1	1	4	ERE321,ERE314
ERE1 72	Renewable Energy Resources Interfacing	3	2	2	0	4	ERE321,ERE314 , ERE315
ERE1 73	Computer Application in Electrical Power Systems	3	2	2	0	4	ERE313
ERE1 74	Thermal Power Plants	3	2	2	0	4	GME221,GME21 2
ERE1 75	Selected Topics in Renewable Energy	3	2	2	0	4	

Energy Elective (B)							
ERE271	Digital Control	3	2	2	0	4	ERE324
ERE272	Advanced Control on Power Systems	3	2	2	0	4	ERE222,ERE324
ERE274	Hydro-Tidal and Wave Energy	3	2	2	0	4	GME212
ERE275	Selected Topics in Renewable Energy	3	2	2	0	4	
Pool of Energy Management Concentration Elective Courses							
Energy Elective (A)							
ERE371	Electrical Distribution Systems Installations	3	2	2	0	4	CCE121
ERE372	Energy Management Essentials	3	2	2	0	4	CCE212
ERE374	Electric Drives	3	2	2	0	4	ERE312,ERE317
ERE375	Power Quality for Energy Applications	3	2	2	0	4	ERE222,ERE312
ERE376	Solar Energy in Buildings	3	2	2	0	4	ERE314
ERE377	Renewable Energy and Buildings	3	2	2	0	4	ERE314,ERE315,ERE323
ERE378	Selected Topics in Renewable Energy	3	2	2	0	4	
Energy Elective (B)							
ERE471	Renewable Energy Management	3	2	2	0	4	ERE314,ERE315
MPE326	Quality Control	3	2	2	0	4	BAS122
MPE472	Environmental Impact of Projects	3	2	2	0	4	
MPE473	Environmental Control	3	2	2	0	4	
MPE474	Quality Systems and Assurance	3	2	2	0	4	BAS122
ERE475	Selected Topics in Renewable Energy	3	2	2	0	4	

Study Plan of Electrical & Renewable Energy Engineering Program

Code	Course Title	Credits	Contact Hours				Prerequisites
		CH	Lec	Tut	Lab	TT	
Semester 1							
BAS011	Mathematics (1)	3	2	2	0	4	
BAS012	Vibration and Waves	3	2	1	1	4	
BAS013	Statics	3	2	2	0	4	
BAS014	Engineering Chemistry	3	2	1	1	4	
BAS015	Engineering Drawing (1)	3	2	3	0	5	
CCE011	Computing in Engineering	2	2	1	1	4	
NUB	Complete hours from NUB Compulsory	1	1	0	0	1	
Total		18	13	10	3	26	
Semester 2							
BAS021	Mathematics (2)	3	2	2	0	4	BAS011
BAS022	Electricity and Magnetism	3	2	1	2	5	BAS012
BAS023	Dynamics	3	2	2	0	4	BAS013
BAS024	Fundamentals of Engineering	2	2	0	0	2	
BAS025	Engineering Drawing (2)	1	0	0	3	3	BAS015
MPE021	Production Engineering	2	2	0	2	4	
ENG111	English (1)	1	1	0	0	1	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	14	5	7	26	
Semester 3							
BAS111	Mathematics (3)	2	2	1	0	3	BAS021
BAS112	Building Safety and	2	2	0	0	2	

	Fire Protection						
CCE111	Electrical Circuits (1)	3	2	1	2	5	BAS022
CCE112	Computer Programming	3	2	0	2	4	CCE011
GME113	Thermodynamics (1)	3	2	2	0	4	BAS014
ERE111	Energy Resources and Renewable Energy	2	2	1	0	3	
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		18	15	5	4	24	
Semester 4							
BAS121	Mathematics (4)	2	2	1	0	3	BAS111
BAS122	Probability and Statistics	2	2	1	0	3	
CCE121	Electrical Circuits (2)	3	2	0	2	4	CCE111
CCE122	Electronic Devices	3	2	1	2	5	CCE111
ERE121	Energy Conversion	3	2	2	0	4	CCE111
	Structures and Properties of Materials Elective	2	2	0	1	3	
	Project Management Elective	2	2	1	0	3	
ENG112	English (2)	1	1	0	0	1	ENG111
Total		18	15	6	5	26	
Semester 5							
ERE211	Field Training (1)	0	0	0	0	0	
ERE212	Fundamentals of Photovoltaic	3	2	1	2	5	CCE122
GME212	Fluid Mechanics and Turbo-Machinery	3	2	0	2	4	GME113
GME214	Aerodynamics	3	2	2	0	4	BAS023
CCE211	Electromagnetic Fields	2	2	1	1	4	BAS111,CCE121
CCE212	Electrical	3	2	0	2	4	CCE111


	Measurements and Instrumentation						
NUB	Complete hours from NUB Compulsory	3	3	0	0	3	
Total		17	13	4	7	24	
Semester 6							
ERE221	Electrical Machines (1)	3	2	0	2	4	CCE211
ERE222	Electrical Power Engineering	3	2	1	1	4	CCE211
ERE223	Sensors and Transducers Systems	2	2	1	1	4	CCE212
ERE224	Power Electronics (1)	3	2	0	2	4	CCE122
GME221	Heat Transfer	3	2	0	2	4	GME113
ENG113	English (3)	2	2	0	0	2	ENG112
	Engineering Economy Elective	2	2	1	0	3	
Total		18	14	3	8	26	
Semester 7							
ERE311	Field Training (2)	0	0	0	0	0	ERE211
ERE312	Power Electronics (2)	3	2	0	2	4	ERE224
ERE313	Fundamentals of Power System Analysis	3	2	2	0	4	ERE222
ERE314	Solar Energy	3	2	1	2	5	GME221
ERE315	Wind Energy	3	2	1	2	5	GME214
ERE316	Modelling and Simulation of Engineering Systems	3	2	0	2	4	BAS121
ERE317	Electrical Machines (2)	3	2	0	2	4	ERE221
Total		18	12	4	10	26	
Semester 8							

ERE321	Energy Graduation Project (1)	3	1	0	4	5	115 Cr. hrs.
ERE322	Economics of Generation, Transmission, and Operation	3	2	2	0	4	ERE111,ERE222
ERE323	Biomass and waste Conversion Technology	3	2	2	1	5	GME221
ERE324	Automatic Control Systems	3	2	0	2	4	ERE316
ERE325	Power System Protection	3	2	2	0	4	ERE222
ERE326	Utilization and Management of Electrical Energy	3	2	2	1	5	ERE314,ERE315
Total		18	11	8	8	27	
Semester 9							
ERE411	Energy Graduation Project (2)	3	0	0	6	6	ERE321
ERE412	Microprocessor-Based Automated Systems	2	2	1	1	4	ERE324,ERE312
	Energy Elective (A)	3	2	2	0	4	
	Energy Elective (A)	3	2	2	0	4	
	Energy Elective (B)	3	2	2	0	4	
	Energy Elective (B)	3	2	2	0	4	
Total		17	10	9	7	26	

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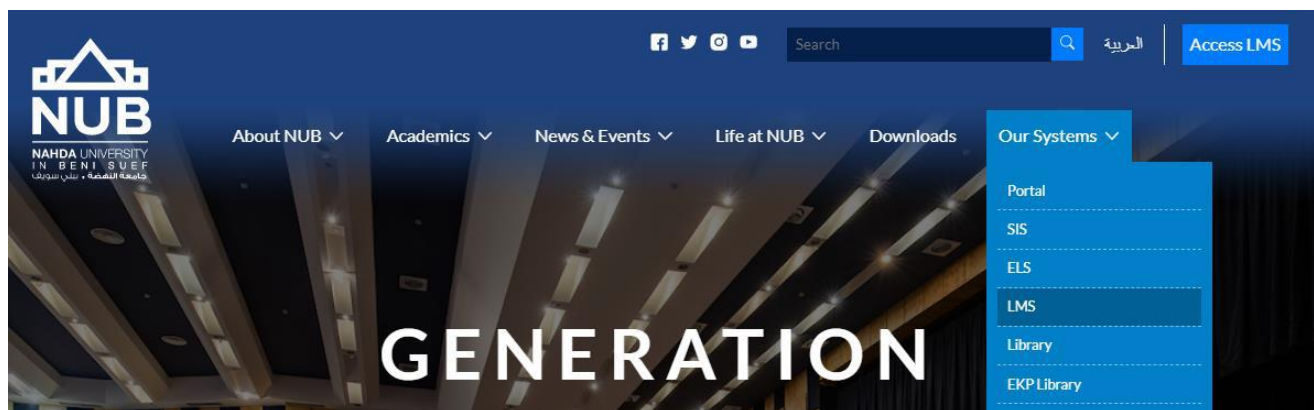
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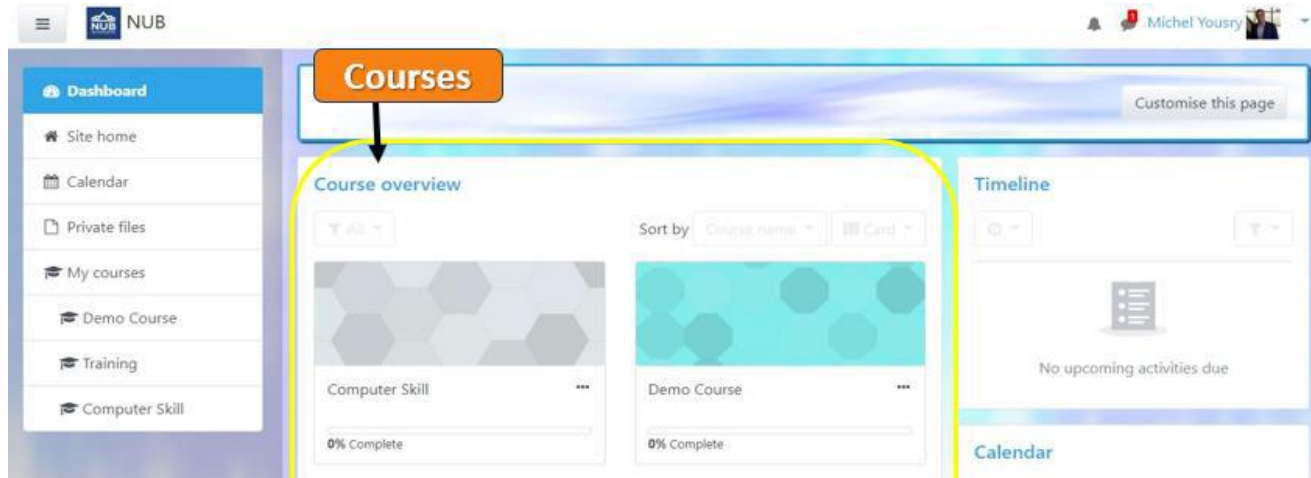
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Topic 2 Lectures

Topic 3 Meetings & Links

Topic 4 Assignments

Topic 5 Official Exams & Results

Topic 6 Practical (If needed in the course)

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