ASU-CHEP seeks to offer high quality, student-centered learning environment to graduate engineers equipped with skills, knowledge, and keen desire for life-long learning. The following eight established programs (except the Mechatronics Engineering) are already running with plans to add more programs in the future. The new non-traditional eight programs feature interdisciplinary cooperative education and research that are different from the traditional main stream. The curriculum is inspired by Engineer 2020 vision and the assessment of delivery is based on NARS criteria.

### CREDIT HOURS ENGINEERING PROGRAMS

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<th>Program</th>
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<td>Materials Engineering</td>
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### Building Engineers

Building Engineers are concerned with the planning, design, construction, operation, renovation, and maintenance of buildings, as well as with their impact on the surrounding environment. Building Engineers deal with the architectural, structural, environmental, mechanical, electrical, plumbing, and construction and management aspects of building structures.

- Structural design of buildings
- Construction and project management
- Environmental engineering

### Materials Engineers

Materials Engineers are concerned with the relationship between atomic structure of material and its performance with respect to design and processing conditions. Optimum material selection within the fields of mechanical, civil, electronic, and medical engineering targets the facilitation of daily activities.

- Metals and alloys
- Polymers and composites
- Glasses and ceramics
- Cementitious materials
- Electronic materials
- Nano materials

### Communication Systems Engineers

Communication Systems Engineers deal with the wide areas of communication and telecommunication networks, multimedia systems (video and voice), wireless communication, cellular and satellite networks, microwave communication systems, and optical communication systems.

- Telecommunications
- Data communications
- Optical communications
- Signal processing
- Photonics
- Microwaves

### Manufacturing Engineers

Manufacturing Engineers design, construct, and improve engineering products; they convert raw materials into useful products with the required specifications and minimum cost.

- Metal cutting and material forming
- Mechanical measurement and metrology
- Robotics and computer numerical controlled machines

### Energy and Renewable Energy Engineers

Energy and Renewable Energy Engineers deal with the different renewable energy resources such as wind, photovoltaic, solar, hydro, fuel cells, and new technologies. It is a multi-disciplinary program that covers different topics to make future engineers understand the renewable energy resources; how they work and how to use them in applications.

- Wind energy power plants
- Solar and photovoltaic energy
- Energy conversion
- Interfacing technology
- Water desalination

### Computer and Software Systems Engineers

Computer and Software Systems Engineers are concerned with software engineering with a strong emphasis on computer engineering. The program opens a whole world of career opportunities to its graduates in software product lines, mobile and pervasive computing, cloud computing, embedded systems, multimedia, 3D graphics, game design, etc.

- Software development life cycles
- Analysis, modeling, design, and quality assurance of software systems
- Embedded systems
- Computer graphics and multimedia
- Cloud computing and big-data analytics
- Mobile computing
- Computer networking and security

### Landscape Architects

Landscape Architects are specialized in landscape design. Landscape architecture program provides the students with the specialization courses of landscape in an integrated framework with scientific courses of architecture, urban design and planning, in addition to basic scientific and engineering courses.
Graduates of this program can be specialized in:

- The harmony between building design and open and green spaces
- The aesthetical and functional dimensions for landscape elements
- Dealing with different environments and levels as urban areas, coastal facades, and desert and mountainous sites
- Creating designs that fulfill human needs, preserve the environment, save energy, and realize sustainability

Mechatronics Engineers (Under approval) are concerned with Mechatronics Engineering with a strong emphasis on one of the fields: Industrial Automation, Autotronics, Bio-Mechatronics, or Nano-Mechatronics.

Graduates of this program can be specialized in:

- Mechatronics systems
- Industrial automation systems
- Micro/Nano Electro-Mechanical Systems
- Automotive systems
- Bio-medical systems
- Embedded systems, robotics, etc.

Unique Features of the ASU-CHEP

- Enhanced enjoyable education.
- Dynamic and strong interdisciplinary curriculum.
- Adequate delivery, based on interactive and critical teaching and engineering reasoning.
- Strong link between teaching and research.
- Effective university-industry collaborative research enterprise.
- Acquired experience through a mandatory co-op program with local and foreign industry.
- Strong emphasis on communication skills and English language proficiency.
- Adapted international textbooks.
- Accredited certificate sought according to NARS criteria.

Curriculum

ASU-CHEP is a credit hours system leading to the Bachelor Degree (B.Sc.) after completing 180 Credit Hours. Evaluation is based not only on final exams but also on midterm exams, quizzes, assignments, course projects, presentations, papers, essays, in/out of class participation, and many other innovative activities.

Co-Operative Education

It is an educational strategy integrating classroom learning and progressive work experience. Three summer co-op periods (4 weeks each), which start at the end of the Sophomore year, should be accomplished by the student before graduation. The co-op education in these programs is the first of its kind in Egypt.

Collaboration with Foreign Universities

According to the agreement signed in 2010 with Clausthal University of Technology in Germany, students of the Materials Engineering program can obtain a bilateral B.Sc. Degree from both Ain Shams and Clausthal Universities, on condition of spending two successful semesters at Clausthal, in addition to proving German language proficiency through passing a German language examination of DSH1 level or above.

Fees

The curriculum is 180 credit hours over 4.5–10 years (18 Credit Hours per semester on average). For new registered students in the academic year 2013/2014, the cost of the credit hour is 500 L.E., in addition to 1000 L.E. annual administrative fees. The average tuition fees are 19000 L.E. per year. There is also a mandatory additional cost of textbooks.

Teaching Faculty Members

Course instructors in the ASU-CHEP are carefully selected from the distinct full-time faculty members of the Faculty of Engineering at Ain Shams University. Students also have the opportunity to evaluate the course delivery at the end of the course.

Administration

Faculty Administration

Dean: Prof. Dr. Sherif Hammad
Vice-Dean: Prof. Dr. Taher Abulyazid
(Students' Affairs)
Prof. Dr. Mostafa Sabry
(Environmental Affairs)
Prof. Dr. Ayman Ashour
(Postgraduate Studies Affairs)

Programs Administration

Director: Prof. Dr. Abdel Wahab El-Ghandour
Vice-Director: Dr. Mahmoud Khalil

Unit Heads:

Building: Dr. Bahaa Tork
Materials: Dr. Iman Taha
Communication Sys.: Dr. Sameh Ibrahim
Manufacturing: Dr. Mohamed Abdel Aziz
Energy & Ren. Energy: Dr. Adel Taha
Comp. Eng. & Soft. Sys.: Dr. Gamal A. Ebrahim
Landscape Arch.: Dr. Mohamed El-Fayoumi

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