مركز الاستشارات الهندسية والتطوير

بكلية الهندسة والتكنولوجيا – جامعة المستقبل

أولا: دليل المركز

الدليل مكتوب باللغة الإنجليزية وفيه تعريف بالمركز والوحدات التخصصية التابعة له وهم:

1- وحدة الهندسة المعمارية

2- وحدة الهندسة المدنية

3- وحدة الهندسة الميكانيكية

4- وحدة الهندسة الكهربية

5- وحدة هندسة البترول

6- وحدة التعليم المستمر

دليل مركز الاستشارات

FUTURE UNIVERSITY
ENGINEERING CONSULTANCY CENTER
(FUE-ECDC)
Website: www.fue.edu.eg

FUTURE UNIVERSITY IN EGYPT
جـــامعـــة المســتقبـــل

(FUE-ECDC)

Introduction:

To enhance its essential role in serving the community and developing the environment through the most advanced scientific and technological education, Future University in Egypt has established the Engineering Consultancy & Development Center (FUE-ECDC). This center is based at the University, Faculty of Engineering and Technology (FET) and supported with its highly qualified staff members along with a group of outstanding professional consultants from other reputable Universities and industrial firms.

The main goal of the FUE-ECDC is to offer engineering consultations, technical analysis, feasibility studies, and continuing education activities in the different fields of engineering profession.

Address:

FUTURE UNIVERSITYERSITY ENGINEERING CONSULTANCY & DEVELOPMENT CENTER: 90TH STREET، FIFTH SETTLEMENT, NEW CAIRO, EGYPT.

Telephones and Fax :

Telephone no.:	Hotline 16383 (16 FUE) +202 2618 6100 (10 Lines) +202 2618 6110 (10 Lines)

Objectives and Activities of the Center:

The FUE-ECDC has the goal of offering comprehensive engineering consultancies and technical studies in different engineering fields with the objective of finding innovative, economic, and untraditional solutions for the problems which may face the development of the Egyptian industry sector. Also, the center is keen to offer training sessions for the engineers and technicians of the profession with the objective of providing the trainees with the advanced up to date engineering theories and technologies. These objectives can be achieved through strengthening the cultural and scientific relations between the center and the different local and international Universities, research centers, public and private organizations and associations. The center performance depends on the experience of the staff members and Technicians of the Faculty of Engineering and Technology at FUE, as well as on the strong infrastructure of the faculty (well organized laboratories provided with up to date equipment). In addition, the Center utilizes the wide experience of highly recognized experts from other local and international universities and consultancy centers and has access to their highly equipped specialized facilities, which enhances its technical capabilities.

The activities of the center include :

1. Offering scientific consultancies in different engineering fields based on the academic and practical experience of its members .

2. Offering training programs for the engineers in different engineering fields to provide them with the advanced theoretical and practical principles necessary for competing internationally in different engineering and technological specializations .
3. Carrying out the necessary technical studies and applied scientific researches that contribute to the total and sustainable development of the Egyptian Society .
4. Offering continued engineering education services for technical staff in governmental and private associations and companies to develop their qualifications and capabilities and to provide them with the new techniques in different engineering sectors .
5. Cooperating with other local and international colleges of engineering and technology in organizing scientific conferences, meetings, and workshops for the purpose of information exchange, enhancing the engineering profession and protecting the environment from inconvenient technological applications .
6. Signing up MOUs for scientific cooperation, and for staff members and students exchange with local as well as international universities and scientific associations in different engineering and technological aspects .
7. Serving the Egyptian community through the awareness of individuals and organizations with the correct technological engineering behaviors .
8. Offering the possibilities for both local and international scientific publication in different fields of engineering specialties .
9. The application of the engineering principles in studying engineering projects and to offer the optimum technical as well as economic solutions .
10. Application of quality control principles in every step of analysis, design, executing and management of the projects submitted to the consultancy center or one of its specialized unit.
11. Constituting comprehensive computerized data base of engineering information and mathematical models to offer alternative solutions and to support the decision making .
12. Adopting high level of quality control during the supervision of the projects execution through the strict application of the regulations of the considered national or international specifications and codes of practice.

The Engineering Consultancy & Development Center of the FUE can be considered as the core of the Renewable Energy and Energy Conservation Research center which is being now developed at the faculty of engineering and technology with the cooperation of other local and international Universities .

Equipment and Setup of the Center:

Several well-equipped Laboratories are available at the faculty of engineering and technology of FUE which enable the Consultancy & Development Center to be

one of the centers of high Engineering capabilities in consultancy and research. The following laboratories are available :

1. Electrical circuits and measurements laboratory
2. Advanced electronics laboratory (electronic circuits and communications)
3. Microprocessor and automatic control laboratory
4. Electrical machines Laboratory.
5. Power Electronics Laboratory.
6. Power System Simulator.
7. Antennas and finite waves' laboratory
8. Laser and electro optical laboratory
9. Practical training and projects laboratory
10. Thermal dynamics laboratory
11. Fluid mechanics laboratory
12. Mechatronic laboratory
13. Robotics laboratory
14. Surveying laboratory

15. Properties and testing of materials and soil mechanics laboratory
16. Environmental studies laboratory
17. Technological and production engineering workshop
18. Chemistry laboratory
19. Physics laboratories (4)
20. Computer laboratories (4)

Technical Engineering Consultancy Units:

1. Architectural Engineering Consultancy Unit

Unit Objectives and Activities :

1. Offering consultancies in the fields of architectural design, urban planning, and site arrangement
2. Preparation of execution drawings and technical reports for architectural projects
3. Preparation of technical and economic feasibility studies for engineering projects
4. Technical and economic evaluation of different engineering projects
5. Preparation of advertising and marketing objects for engineering projects (Flyers, Brochures, Photos, Films....)
6. Evaluation of environmental impact of different engineering projects
7. Site supervision of the execution of different engineering projects
8. Development of old, deteriorated and random districts
9. Planning and design of touristic villages
10. Preparation of theoretical and practical studies and researches

2. Civil Engineering Consultancy Unit

Unit Objectives and Activities :

1. Analysis and design of reinforced concrete and steel structures
2. Revision and modification of structural drawings
3. Repair and strengthening the reinforced concrete structures
4. Site supervision on the execution of different types of structures
5. Preparing technical reports indicating the structural evaluation of existing reinforced concrete and steel structures
6. Carrying out different load tests on existing structures and bridges
7. Executing soil investigation and preparing technical reports on soil profile and foundation
8. Executing all works related to Surveying
9. Transport Planning and Traffic Engineering studies
10. Highway and Airport engineering design
11. Water and Sanitary engineering network design
12. Environmental impact and management studies
13. Quality control and project evaluation techniques
14. Applications of the principles of value engineering

3-Mechanical Engineering Consultancy Unit

Unit Objectives and Activities :

1. Measurement of air-conditioning units performance
2. Measurement of axial as well as centrifugal pumps performance
3. Calibration of measurement and control apparatuses according to standard specifications.
4. Performing different mechanical tests (tension, compression, bending, and fatigue).
5. Measurement of hardness and determining the impact strength.
6. Determination of the internal hydrostatic pressure for pipes, valves, and related accessories.

4- Electrical Engineering Consultancy Unit

Director of the Unit: Dr. Moneer M. Aboelnaga
Associate Prof. Faculty of Eng.
Future University.

Unit Objectives and Activities :

1. Design, development, and supervision of the transmission and distribution electrical energy networks
2. Preparing studies and researches concerning with the development of the control systems in industrial processes
3. Feasibility studies for future electrical energy projects.
4. Evaluation and development of performance for existing electrical projects
5. Studies on the environmental impact of new and existing electrical power stations
6. Studies and consultancies in the field of solar and wind energies
7. Testing, calibration, and repair of electrical equipment and materials
8. Measurement of performance and heat transfer factors for metallic as well as isolating materials
9. Design, development, and maintenance of electronic systems, circuits, and programs

10. Advanced researches in the fields of electronics, communications, and signal processes

5-Petroleum Engineering Consultancy Unit

Unit Objectives and Activities :

1. Conducting experiments on drilling fluids and their additives.
2. Evaluation of the early petroleum – discovery areas and preparing site – development plans, as well as predicting reserves quantities.
3. Setting management plans of petroleum tanks to maximize economical and financial benefits.
4. Analyzing and suggesting solutions for the accidental problems which appear during well drilling, e.g. appearance of water or increased emerging gas quantities.
5. Analysis and proposing solutions to alleviate problems which may appear at the well bottom or with the surface equipment.
6. Studying and selecting the best industrial methods to modify oil wells so that they will be ready after the production stage.
7. Execution of technical studies related to production processes and associated problems and proposing solutions based on the available petroleum technologies for petroleum industry.
8. Carrying out specialized studies to predict principal stock of oil and reservoir capacity.
9. Devising and conducting short courses and training programs in areas of inspection and production.
10. Holding workshops to enhance qualifications of petroleum engineers.

6-Continuous Engineering education Unit

Unit Objectives and Activities:

1. Arrangement of training programs for engineers and technicians in different engineering fields to develop and enhance their professional performance and to keep them up to date with the advancement in their career
2. Arrangement of workshops concerning specialized engineering topics of high
3. value and importance for the development of the national industry and society

4. Establishing links between the governmental associations in different sectors and the higher educational institutions to offer the technical solutions necessary to overcome the problems which may obstruct the growing of the national economy

5. Cooperation with other similar national and international units in offering educational programs compatible with the unit objectives and the Egyptian community requirements

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LABORATORIES AVAILABLE AT THE FACULTY OF ENGINEERING AND TECHNOLOGY OF FUE

Chemistry Lab.

Physics Lab.

Electrical Engineering Basics Lab.

Computer Lab.

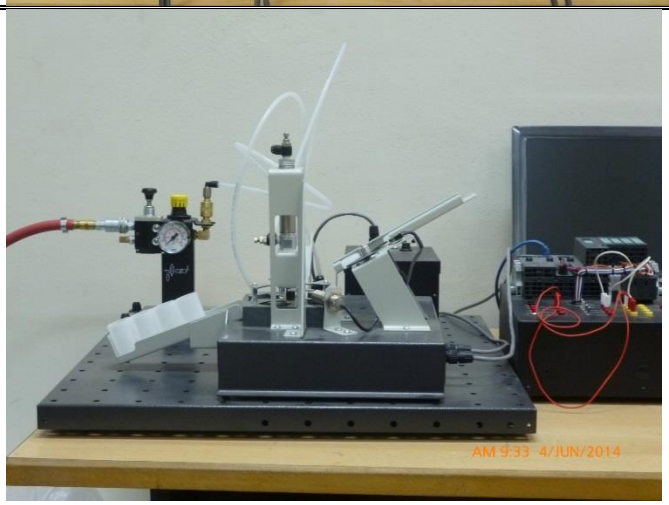
Mechanical Work Shop

Mechanical Work Shop : Turning Machine	
Mechanical Work Shop: Milling Machine	
Surveying Lab.	

Soil and Foundation Mechanics Lab.

Servo Motor Device

Programmable Logic Controller "PLC" Lab. : Bottling Process Module

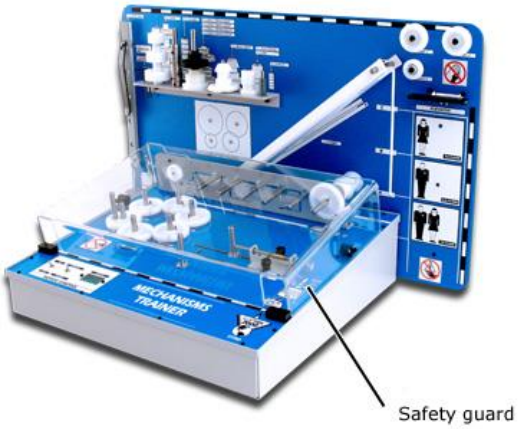


Programmable Logic Controller "PLC" Lab.

AMATROL LAB
Amatrol: Complete Training System (7 modules) for Training on Mechatronics Techniques

Mechatronics Lab.
PNEUMATICS – Electro-pneumatics training system

Mechatronics Lab. (Mechanisms)



Mechatronics Lab. : Hydraulics and electro hydraulics training system

Impact Testing Machine

Fatigue Testing Machine

Rockwell -Testing Hardness Machine

Vickers- Cum- Brinell hardness Tester

Universal Testing Machine for Tensile Strength

Digital Torsion Testing Machine

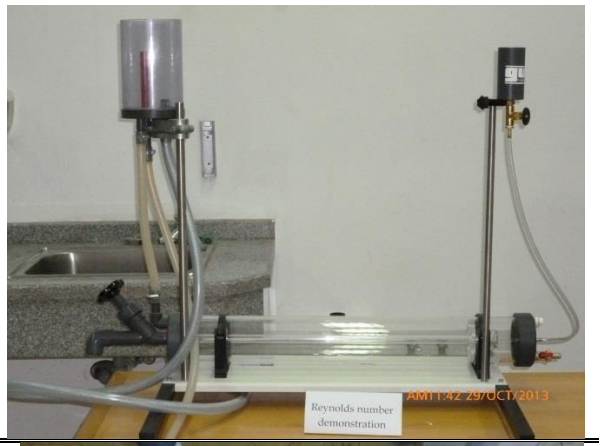
Fluid Mechanics Lab.: Pelton Turbine

Fluid Mechanics Lab.:
Centrifugal Compressor

Fluid Mechanics Lab.:
Gear Pump

Fluid Mechanics Lab.:
Pump Testing

Fluid Mechanics Lab.:
Horizontal Osborne Reynolds Demonstrator



Fluid Mechanics Lab.
Flow Visualization Apparatus

Fluid Mechanics Lab.:
Impact of a Jet

Fluid Mechanics Lab.:
Bernoulli's Theorem Demonstration

Thermal Energy Lab.:
Free and Forced Convection Unit

Thermal Energy Lab.:
Thermal Radiation Unit

Thermal Energy Lab.:
Heat Exchanger Trainer

Thermal Energy Lab.:
Hot Water Bench

Thermal Energy Lab.:
Cold Water Bench

Thermal Energy Lab.:
Vapor Compression Refrigeration Cycle Kit

Thermal Energy Lab.:
Air Conditioning Kit

Examples of Graduation Projects

The Quadcopter

Smart Chair

Wind Tunnel

Smart Car

Color Mixer

Follow me robot