Ministry of Higher Education
High Institute of Electronic Engineering
Ministerial Resolution 5053 - 12/10/2016
K 10, Bilbies – 10th of Ramadan

وزارة التعليم العالي
المعهد العالي للهندسة الإلكترونية
قرار وزاري 5053 – 2016/10/12
ك 10 طريق بلبيس العاشر من رمضان

Course Specification

1- Basic Information

Course Title	**Mathematics (1)**	
Course Code	**BAS 011**	
Academic Year	2022-2023	
Coordinator	Dr. Gamal El-Anani	
Teaching Staff	Dr. Gamal El-Anani	
Level	Level (0)	
Semester	First Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	2
	Lab	0
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Basic Science	

2- Aim of the course

1. To introduce students to concepts of Functions, Limits, and Continuity.
2. To teach students differential calculus, higher derivatives, and Leibnitz theorem.
3. To provide students with derivatives applications.
4. To provide students with the basics of Theory of equations.
5. To equip students with Matrices and its applications.
6. To teach students the principles of linear algebraic equations

3- Course related program competencies

Level A – General	**A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.** **A.2. Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions** **A.3. Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.** **A.5. Practice research techniques and methods of investigation as an inherent part of learning.**
Level B - Speciality	
4- Course Contents	**Vector Algebra - Binomial theorem - Partial fractions - Theory of equations - Numerical methods - Matrices - system of algebraic equations and applications - Gauss elimination method.** **Differential Calculus - Function - Basic functions - Limits - Continuity - Derivatives - Indefinite forms - Taylor and Maclaurine theorems - Application - Expansions - Curve fitting - Some mathematical and engineering applications - Approximation - Introduction to partial differentiation**

# Topic	Lecture	Tutorial/Practical	No of hours
Functions, Limits, and Continuity	4	4	8
Differential Calculus	6	6	12

Trigonometric Functions - Exponential and Logarithmic Functions- Hyperbolic Functions	8	8	16
Higher Derivatives , Leibnitz Theorem	6	6	12
Applications of the Derivatives	4	4	8
Total sum	28	28	56

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Tutorial 4. Problem solving 5. Brain storming 6. Projects 7. Self-learning 8. Research and Reporting 9. Computer Simulation 10. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8

	- Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 10 % - Mid-term examination: 20 % - Final – term examination: 70 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	▪ Swokowski, E, Olinick ,M and Pence, D., Calculus, PWS Publishing Company - Boston, 1994. ▪ Mary Attenborough, Engineering Mathematics, McGraw - HILL Book Company Europe, 1994. ▪ Anthony croft,Robert Davison, Engineering Mathematics A modern Foundation for Electrical, Electronic & Control Engineering, Addison - Wesley - Publishing Company, 1992.
c- Periodicals, Web sites .....etc	Web Sites related to Mathematics and Mathematical engineering as: **www.math.hmc.edu**, **www.tutorial.math.lamar.edu**, **www.web.mit.edu**

11-Course contents – Course related program competencies

	Level A			
	A.1	**A.2**	**A.3**	**A.5**
Functions, Limits, and Continuity	√			
Differential Calculus	√	√		√
Trigonometric Functions - Exponential and Logarithmic Functions- Hyperbolic Functions		√	√	
Higher Derivatives , Leibnitz Theorem	√	√	√	
Applications of the Derivatives			√	

12-Teaching and learning methods - Course related program competencies				
	Level A			
	A.1	A.2	A.3	A.5
Lecture (online/in class)	√	√	√	√
Discussion	√	√	√	√
Tutorial	√	√	√	√
Problem solving	√	√	√	√
Brain storming	√	√	√	√
Projects	√	√	√	√
Self-learning		√		
Research and Reporting			√	
Computer Simulation				
Teamwork				

13- Assessment methods - Course related program competencies				
Assessment methods	**Course related program comptencies**			
	Level A			
	A.1	A.2	A.3	A.5
1. Mid Term Examination (written/ online)	√	√	√	√
2. Practical Examination				
3. Oral Examination				
4. Formative (quizzes- presentation -reports)	√	√	√	√
5. Final Term Examination (written	√	√	√	√

Authorized from board of the department at 1/9/2022

Course coordinator:

Dr. Gamal El-Anany

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Course Specification

1- Basic Information

Course Title	**Physics (1)**	
Course Code	**BAS 012**	
Academic Year	2022-2023	
Coordinator	Dr. Somia Ahmed Desoky	
Teaching Staff	Dr. Somia Ahmed Desoky	
Level	Level (0)	
Semester	First Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	1
	Lab	2
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Basic sciences	

2- Aim of the course

1. To provide students with unit's systems and dimensions
2. To provide students with the concepts of fluid statics and dynamics.
3. To introduce students to definitions of viscosity, and elasticity.
4. To teach the principles of sound waves and propagation of sound waves in elastic media.
5. To teach different methods of heat transfer and heat flow and their applications.
6. To introduce students to Kinetic theory of gases and thermodynamics.

3- Course related program competencies

Level A – General	A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics. A.2 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions. A.3 Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development
Level B - Speciality	
4- Course Contents	Measurements: Physics and measurements - (length, mass, time, the international system of unite SI) Elastic properties of solid (stress, strain, elastic modules…) - Dynamic of ideal fluid (static and dynamic) - oscillatory motion: wave motion, sound waves, thermodynamics, temperature, heat and first law of thermo dynamics, kinetic theory of gases, heat engines, entropy and the second law of thermodynamics, Newton's law of gravitation and applications - Potential - Energy - Continuity equation - Oscillations - simple harmonic motion.

# Topic	**Lecture**	**Tutorial/Practical**	**No of hours**
Physical quantities – Units and dimensions	2	3	5
Field of gravitational force	2	3	5
Fluid statics and dynamics – Viscosity – Elasticity	6	6	12
Sound waves – Waves in elastic media	4	6	10
Heat transfer	4	6	10
Kinetic theory of gases	**2**	**2**	**4**
First and second laws of thermodynamics – entropy	**4**	**6**	**10**
Total sum	**24**	**32**	**56**

5- Teaching and learning	1. Lecture (online/in class) 2. Discussion

methods	3. Tutorial 4. Problem solving 5. Brain storming 6. Projects 7. Self-learning 8. Research and Reporting 9. Computer Simulation 10. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. Provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial , Practical work and quizzes : %20 - Mid-term examination: % 20 - Final – term examination: %60 Total 100 %
10- List of text books and references:	

a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	[1 Raymond A. Serway and John W. Jewett, Jr., "Physics for Scientists and Engineers with Modern Physics", 8E, Brooks Cole, 2009. [2] Shipman, Wilson,Todd, An introduction to Physical Science, D.C. Heath and and Company, Toronto, 1990. ▪ [3] Richard T.Weidner, Physics - Revised Version, Allyn and Bacon, Boston, USA, 1989. [4] Serway - Beicher, Physics for Scientists and Engineering with Modern, Saunders Collage publishing, USA, 1989.
c- Periodicals, Web sites ……etc	**http://hyperphysics.phy-astr.gsu.edu/hbase/hph.html**

11-Course contents – Course related program competencies

	Level A			Level B			
	A.1	**A.2**	**A.3**				
Physical quantities – Units and dimensions	√						
Field of gravitational force	√	√					
Fluid statics and dynamics –Viscosity – Elasticity	√	√	√				
Sound waves – Waves in elastic media	√	√	√				
Heat transfer	√		√				
Kinetic theory of gases	√		√				
First and second laws of thermodynamics – entropy	√						

12-Teaching and learning methods - Course related program competencies

	Level A			Level B			
	A.1	**A.2**	**A.3**				
Lecture (online/in class)	√						
Discussion	√		√				
Tutorial	√	√	√				

Problem solving	√						
Brain storming			√				
Projects							
Self-learning							
Research and Reporting							
Computer Simulation							
Teamwork		√					

13- Assessment methods - Course related program competencies							
Assessment methods	**Course related program comptencies**						
	Level A			**Level B**			
	A.1	**A.2**	**A.3**				
1. Mid Term Examination (written/ online)	√		√				
2. Practical Examination		√					
3. Oral Examination							
4. Formative (quizzes- presentation -reports)	√	√	√				
5. Final Term Examination (written	√		√				

Authorized from board of the department at 1/9/2022

Course coordinator:

Dr. Somaia Desouky

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Course Specification

1- Basic Information

Course Title	**Mechanics**	
Course Code	**BAS 013**	
Academic Year	2022-2023	
Coordinator	Dr. Gamal El-Anani	
Teaching Staff	Dr. Gamal El-Anani	
Level	Level (0)	
Semester	First Term	
Number of Weekly Contact Hours	Lecture	3
	Tutorial	2
	Lab	0
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Basic Science	

2- Aim of the course

1. To provide students with the concepts of moments, and equilibrium of bodies in space.
2. To equip students with trusses analysis.
3. To provide students with the concepts of virtual work, center of mass, and moment of inertia.
4. To teach students linear and planer motion of particles in Cartesian coordinates.
5. To teach students motion of particles in a resistive medium.
6. To teach students batch movement and collision of particles.
7. To provide students with the concepts of dynamics of charged particles in magnetic and electric fields.
8. To provide students with the concepts of dynamics of rigid body

3- Course related program competencies

Level A – General	**A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.** **A.2. Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions** **A.3. Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.** **A.5. Practice research techniques and methods of investigation as an inherent part of learning.**
Level B - Speciality	
4- Course Contents	**Syllabus:** Application on space vectors: Resultant of forces - Moment of forces - Equivalent of Couples - Equivalent of systems - Equation of equilibrium of rigid body - - - types of supports - Equilibrium of plane systems - - Equilibrium of space systems of forces and couples acting on rigid body - The mass center of a system of particles - The mass moment of inertia of a system of particles. Dynamic: Displacement - velocity and acceleration of particle - Trajectory equations - Projectile particle motion on a straight path - Newton's law of motion - Simple harmonic motion of a particle - motion on circular path - work and kinetic energy - vibration of rigid body.

# Topic	Lecture	Tutorial/Practical	No of hours
Application on space vectors: Resultant of forces - Moment of forces - Equivalent of Couples	4	4	8
Equivalent of systems - Equation of equilibrium of rigid body - - - types of supports - Equilibrium of plane systems -	6	6	12

- Equilibrium of space systems of forces and couples acting on rigid body			
- The mass center of a system of particles - The mass moment of inertia of a system of particles.	8	8	16
Dynamic: Displacement -velocity and acceleration of particle - Trajectory equations - Projectile particle motion on a straight path - Newton's law of motion	6	6	12
- Simple harmonic motion of a particle - motion on circular path - work and kinetic energy - vibration of rigid body.	4	4	8
Total sum	28	28	56
5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Tutorial 4. Problem solving 5. Brain storming 6. Projects 7. Self-learning 8. Research and Reporting 9. Computer Simulation 10. Teamwork		
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice		
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance		
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.		
9- Students assessment			

a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 10 % - Mid-term examination: 20 % - Final – term examination: 70 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	▪ Ferdinand P.Beer,E.Russell Johanston, Vector Mechanics for Engineers, McGraw - Hill , A Business Unit of M.H. Company Inc., 1987 ▪ Bichara B., John W., Static For Engineers, Springer Verlag, New York, 1997. ▪ Bichara B., John W., Dynamic for Engineers, Springer Verlag, New York, 1997
c- Periodicals, Web sites .....etc	Web Sites related to engineering mathematics •http://emntserver.unl.edu/NEGAHBAN/EM373/Intro.htm •Hibbeler OneKEY,A complete system for mechanics courses. •www.prenhall.com/onekey

11-Course contents – Course related program competencies				
	Level A			
	A.1	**A.2**	**A.3**	**A.5**
Application on space vectors: Resultant of forces - Moment of forces - Equivalent of Couples	√			

Equivalent of systems - Equation of equilibrium of rigid body - - - types of supports - Equilibrium of plane systems - - Equilibrium of space systems of forces and couples acting on rigid body	√	√		√
- The mass center of a system of particles - The mass moment of inertia of a system of particles. series solution of differential equations		√	√	
Dynamic: Displacement -velocity and acceleration of particle - Trajectory equations - Projectile particle motion on a straight path - Newton's law of motion	√	√	√	
- Simple harmonic motion of a particle - motion on circular path - work and kinetic energy - vibration of rigid body.			√	

12-Teaching and learning methods - Course related program competencies

	Level A			
	A.1	**A.2**	**A.3**	**A.5**
Lecture (online/in class)	√	√	√	√
Discussion	√	√	√	√
Tutorial	√	√	√	√
Problem solving	√	√	√	√
Brain storming	√	√	√	√
Projects	√	√	√	√
Self-learning		√		
Research and Reporting			√	
Computer Simulation				
Teamwork				

13- Assessment methods - Course related program competencies

Assessment methods	**Course related program comptencies**
	Level A

	A.1	A.2	A.3	A.5
1. Mid Term Examination (written/ online)	√	√	√	√
2. Practical Examination				
3. Oral Examination				
4. Formative (quizzes- presentation -reports)	√	√	√	√
5. Final Term Examination (written	√	√	√	√

Authorized from board of the department at 1/9/2022
Course coordinator:

Dr. Gamal El-Anany

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Course Specification

1- Basic Information

Course Title	**Engineering Drawing and Projection**	
Course Code	MED 014	
Academic Year	2022-2023	
Coordinator	Dr. Essam A. Alim Gomah Elaraby	
Teaching Staff	Dr. Essam A. Alim Gomah Elaraby	
Level	Level (0)	
Semester	First Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	3
	Lab	0
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Electronics Engineering and Electrical Communication	

2- Aim of the course

1. To teach students different types of engineering lines and operations.
2. To equip student with isometric and view, and deduction of the third view.
3. To provide students with different methods of projection.
4. To teach students the projections of the point, the line, and the plane.
5. To teach students position problems.
6. To acquire students some skills for prisms presentation, and circle projection.
7. To teach students the cylindrical, and conical sections.
8. To teach students intersection of different rotational surfaces, and applications

3- Course related program competencies

Level A – General	A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics. A.6 Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements. A.9 Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
Level B - Speciality	B.2 Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design. B.3 Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.
4- Course Contents	**Syllabus:** Techniques and skills of engineering drawing, normal and auxiliary projections. Solid geometry. Intersections between planes and solids. Development. Sectioning. Drawing and joining steel frames. Assembly drawing of some mechanical parts, Reading drawings. تقنيات ومهارات الرسم الهندسي, العمليات الهندسية –الاسقاط العمودي – المجسمات, التقاطع (القطاعات المستوية للمجسمات), المقاطع, رسم ووصل قطاعات هياكل الصلب, وسائل الوصل والتثبيت, الرسم التجميعي لبعض الاجزاء الميكانيكية, قراءة الرسومات

# Topic	Lecture	Tutorial/Practical	No of hours
Different types of engineering lines.	2	3	5
The point- The line- The plane.	2	3	5
Geometrical constructions and drawing operations.	4	6	10
Introduction to projection- different methods of projection- normal projection.	4	6	10
Isometric and view- deduction of third view.	4	6	10
Assembly drawings of 3D isometric parts and projection of assembly drawings.	4	6	10

introduction to sheets and sheet layout engineering drawing.	4	6	10
introduction to using computer software design tools in engineering drawing and projection.	4	6	10
Total sum	28	42	70

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Tutorial 4. Problem solving 5. Brain storming 6. Projects
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Formative (quizzes- presentation -reports) 3. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 10 % - Mid-term examination: 20 %

	- Final – term examination: 70 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	[1] Ken Morling, Geometric and Engineering Drawing, 3rd edition, Routledge, ISBN-10: 0415536197, July 2012. [2] Richard Shelton Kirby, The Fundamentals of Mechanical Drawing, Nabu Press, 2009. [3] Cecil Jensen, Jay Helsel و Dennis Short, Engineering Drawing and Design, McGraw Hill, 7th. Ed., 2007.
c- Periodicals, Web sites .....etc	Web Sites related to **Drawing Engineering and Projection.** **https://www.mygreatlearning.com/academy/learn-for-free/courses/engineering-graphics-drawing**

11-Course contents – Course related program competencies

	Level A			Level B	
	A.1	**A.6**	**A.9**	**B.2**	**B.3**
Different types of engineering lines.	√				√
The point- The line- The plane.	√	√		√	
Geometrical constructions and drawing operations.	√	√	√	√	√
Introduction to projection- different methods of projection- normal projection.	√	√			√
Isometric and view- deduction of third view.		√	√	√	
Assembly drawings of 3D isometric parts and projection of assembly drawings.	√	√	√		√
introduction to sheets and sheet layout engineering drawing.	√	√		√	
introduction to using computer software design tools in engineering drawing and projection.		√	√	√	

12-Teaching and learning methods - Course related program competencies

	Level A			Level B	
	A.1	A.6	A.9	B.2	B.3
Lecture (online/in class)	√	√	√	√	√
Discussion			√	√	
Tutorial	√	√		√	
Problem solving			√		√
Brain storming	√	√		√	
Projects		√		√	√

13- Assessment methods - Course related program competencies					
Assessment methods	**Course related program comptencies**				
	Level A			**Level B**	
	A.1	**A.6**	**A.9**	**B.2**	**B.3**
1. Mid Term Examination (written/ online)	√	√		√	√
2. Formative (quizzes- presentation -reports)	√			√	
3. Final Term Examination (written	√	√	√	√	√

Authorized from board of the department at 1/9/2022
Course coordinator:

Dr. Essam Abdel Alim Gomah

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Course Specification

1- Basic Information

Course Title	**History of Engineering and Technology**	
Course Code	**MED 015**	
Academic Year	2022-2023	
Coordinator	Dr/ aya salem	
Teaching Staff	Dr/ aya salem	
Level	Level (0)	
Semester	First Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	0
	Lab	0
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Basic sciences	

2- Aim of the course

1. To provide students with overview the engineering roll in developing countries and the engineering activities and ethics of engineers.
2. To inform students technology transfer and society required and decision-making elements and ideal solution.
3. To inform students development of teaching process.
4. To Provide students with NVQ Levels and skills in each level and skill and levels measurements.
5. To give students the basics of defining the 'why' and the 'what'.
6. To give students an overview for project plan and how tocomplete a project.

3- Course related program competencies

Level A – General	A.5 Practice research techniques and methods of investigation as an inherent part of learning. A.7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. A.8 Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools A.9 Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
Level B - Speciality	
4- Course Contents	Syllabus: History of Civilization and Technology Development, Humanities and social sciences, Engineering Education and its Disciplines, Scientific thinking and analysis, Technology and Training, Different work methodologies and ethics, Application examples, Course Project. تاريخ الحضارة وتطور التكنولوجيا الانسانيات والعلوم الاجتماعية , التعليم الهندسي وتخصصاته المختلفة, التفكير العلمي والتحليلي , التدريب والتكنولوجيا منهجيات العمل الهندسي وسلوكياته, امثلة تطبيقية, مشروع مقرر

# Topic	Lecture	Tutorial/Practical	No of hours
Engineering Roll in Developing Countries	4	0	4
Engineering activities and ethics of Engineers	6	0	6
Technology transfer and society required	4	0	4
Decision making elements and ideal solution –Assessment1	4	0	4
Development of teaching process	4	0	4
skills in each level and skill and levels measurements	2	0	2
Application examples, Course Project	4		4
Total sum	28	0	28
5- Teaching and learning	1. Lecture (online/in class)		

methods	2. Discussion 3. Brain storming 4. Projects 5. Self-learning 6. Research and Reporting 7. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 15% - Mid-term examination: 15 % - Final – term examination: 70 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/	Richard Newton “Project Management Step by Step: How to Plan

References	and Manage a Highly Successful Project", Pearson Education Canada, 2007. Revised edition, 2007
c- Periodicals, Web sites ……etc	Web sites related to history of engineering sciences

11-Course contents – Course related program competencies				
	Level A			
	A.5	**A.7**	**A.8**	**A.9**
Engineering Roll in Developing Countries	√	√		
Engineering activities and ethics of Engineers	√	√		
Technology transfer and society required		√	√	
Decision making elements and ideal solution –Assessment1		√	√	
Development of teaching process		√	√	
skills in each level and skill and levels measurements			√	√
Application examples, Course Project			√	√

12-Teaching and learning methods - Course related program competencies				
	Level A			
	A.5	**A.7**	**A.8**	**A.9**
Lecture (online/in class)	√	√		
Discussion	√	√		
Tutorial		√	√	
Problem solving		√	√	
Brain storming			√	
Projects			√	√
Self-learning			√	
Research and Reporting			√	√
Computer Simulation			√	√
Teamwork				√

13- Assessment methods - Course related program competencies				
Assessment methods	**Course related program comptencies**			
	Level A			
	A.5	**A.7**	**A.8**	**A.9**
1. Mid Term Examination (written/ online)	√	√		
2. Practical Examination		√		
3. Oral Examination		√	√	
4. Formative (quizzes- presentation -reports)			√	√
5. Final Term Examination (written				√

Authorized from board of the department at 1/9/2022

Course coordinator:

Dr./ aya .m. salem

Ministry of Higher Education
High Institute of Electronic Engineering
Ministerial Resolution 5053 - 12/10/2016
K 10, Bilbies – 10th of Ramadan

وزارة التعليم العالي
المعهد العالي للهندسة الإلكترونية
قرار وزاري 5053 – 2016/10/12
ك 10 طريق بلبيس العاشر من رمضان

Course Specification

1- Basic Information

Course Title	**Digital and Logic Circuits**	
Course Code	**CSE 016**	
Academic Year	2022-2023	
Coordinator	Doctor. Soheir metwaly afifi	
Teaching Staff	Doctor. Soheir metwaly afifi	
Level	Level (0)	
Semester	First Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	1
	Lab	2
Department offering the program	• Communications and Computer Engineering	
Department offering the course	• Communications and Computer Engineering	

2- Aim of the course

1. Learn the principles of computer hardware,Presents various binary systems suitable forrepresentation of information in digital systems and illustrates binary arithmetic.Learn the simplification methods of combinational logic circuit.
2. Provides the basic postulates and theorems related to Boolean algebra.The various logic operations and the correlation between the Boolean expression and its implementation with logic gates
3. The various methods of minimization andsimplification of Boolean expressions, Karnaugh maps, tabulation method, etc. are explained
4. Design and analysis procedures for combinational circuits are provided

3- Course related program competencies

Level A – General	A.1. **Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.** A.2. Demonstrate principles of design including elements design, process and/or a system related to specific disciplines. A.2. **Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions**. **A4. Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles.** A.5 **Practice research techniques and methods of investigation as an inherent part of learning.**
Level B - Speciality	**B3.Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.** **B4.Estimate and measure the performance of an electrical/electronic/digital system and circuit under specific input excitation, and evaluate its suitability for a specific application.** **B5. Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.**
4- Course Contents	**:** Introduction to computer hardware, Number systems and digital waveforms - Basic gates and logic functions with a discussion of the available ICs that represent these gates - Boolean algebra, Boolean expressions and truth tables - Sum of products and product of sum forms. Simplifying expressions - K-maps up to fourth degree - Combinational logic, decoders, encoders, multiplexers,

demultiplexers, magnitude logic comparators -Digital arithmetic, adders, subtractions, Simple arithmetic and logic unit. Basic PLD architectures.

مقدمة لعتاد الحاسب الآلي. نظم العد والاشكال الموجبة الرقمية- البوابات الاساسية والدوال المنطقية مع شرح للدوائر المنطقية المتاحة لهذه البوبات – الجبر البوليني والتعبيرات البولينية وجداول الحقيقة – صور مجموع المضروب ومضروب المجموع – تبسيط التعبيرات المنطقية – خرائط كارنوف حتي الدرجة الرابعة – المنطق التراكبي – المكودات وفاكك الشفرة – الانتقاء – وعكسه – المقارنات المنطقية – الحاسبات الرقمية –المجمعات – والطارحات – وحدة الحساب والمنطق البسيطة –اجهزة المنطق المبرمج PLD–شرح للدوائر التكاملية المتاحة في كل واحد من الانظمة السابقة

Practical Laboratory:

- Satisfy the truth table for all basic logic gates.
- Implement decoder and encoder using logic gates, and then using the decoder and encoder chips available.
- Implementing and driving 7 segment display.
- Building the half and full adder using logic gates, and using full adder chips.
- Implement an ALU that can perform addition, subtraction, AND, OR, operations using control lines.

# Topic	Lecture	Tutorial/Practical	No of hours
Number Systems	4	4	8
Computer Arithmetic	6	6	12
Logic gates	4	4	8
Basics of digital circuits and the simple combined logic elements	6	6	12
Boolean Algebra Logic Simplification	8	8	16
Total sum	28	28	56
5- Teaching and learning methods	1. Lectures 2. Labs 3. Research assignments Discussion 4. Tutorial 5. Problem solving		

	6. Brain storming 7. Projects 8. Self-learning 9. Research and Reporting 10. Computer Simulation 11. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 20 % - Mid-term examination: 20 % - Final – term examination: 60 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.

b- Text books/ References	1.Digital Electronics, A. D. Godse, D. A. Godse, Technical Publication Pune, 2nd. Ed., 2008 2.Digital logic design, Brian Holdsworth, Clive Woods. British Library Cataloguing, 4th. Ed., 2002.
c- Periodicals, Web sites .....etc	http://www.tutorialspoint.com/computer_fundamentals/

11-Course contents – Course related program competencies

	Level A				Level B		
	A.1	**A.2**	**A.4**	**A.5**	**B.3**	**B.4**	**B.5**
Number Systems	√		√				
Computer Arithmetic	√	√		√	√	√	√
Logic gates		√	√			√	√
Basics of digital circuits and the simple combined logic elements	√	√	√		√	√	
Boolean Algebra Logic Simplification	√	√	√	√		√	√

12-Teaching and learning methods - Course related program competencies

	Level A				Level B		
	A.1	**A.3**	**A.4**	**A.5**	**B.3**	**B.4**	**B.5**
Lecture (online/in class)	√						
Discussion	√	√	√	√	√	√	√
Tutorial	√	√	√	√	√		
Problem solving			√	√	√		
Brain storming				√	√	√	√
Projects				√	√	√	√
Self-learning							√
Research and Reporting						√	
Computer Simulation						√	√

Teamwork							

13- Assessment methods - Course related program competencies							
Assessment methods	**Course related program comptencies**						
	Level A			**Level B**			
	A.1	**A.3**	**A.4**	**B.2**	**B.3**	**B.4**	**B.5**
1. Mid Term Examination (written/ online)	√	√	√	√	√		
2. Practical Examination							
3. Oral Examination							
4. Formative (quizzes- presentation -reports)	√	√	√	√	√		
5. Final Term Examination (written	√	√	√	√	√		

Authorized from board of the department at 1/9/2022

Course coordinator:

Doctor. Soheir afifi

Course Specification

1- Basic Information

Course Title	Human Rights	
Course Code	HUM 017	
Academic Year	2022-2023	
Coordinator	Dr / Somia Ahmed	
Teaching Staff	Dr/ Somia Ahmed	
Level	Level (0)	
Semester	First Term	
Number of Weekly Contact Hours	Lecture	1
	Tutorial	0
	Lab	0
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Basic sciences	

2- Aim of the course

- توعية الطالب بثقافة حقوق الانسان والحريات العامة .
- اكساب الطالب المعارف والمهارات اللازمة المتعلقة بمفهوم حقوق الانسان على الصعيدين الدولي والوطني .
- المام الطالب بالمافهيم الاساسية حول قانون حقوقالانسان ومصادره.
- ان يميز الطالب بين انواع حقوق الانسان والقيود التي ترد عليه .
- تعريف الطالب بحقوق الانسان ومدى اتساقها مع المفاهيم الدولية .

3- Course related program competencies

Level A – General	**A.5 Practice research techniques and methods of investigation as an inherent part of learning** A.7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. A.8 Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools A.9 Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations. A.10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.
Level B - Speciality	
4- Course Contents	الالمام باهمية حقوق الانسان والنشأة التاريخية لتلك الحقوق والمدارس الفقهية لتأصيل تلك الحقوق واحكام الاتفاقيات الدولية الخاصة بحقوق الانسان, والمنظمات الدولية العالمية والاقليمية القائمة علي حماية تلك الحقوق وموقف الدستور المصري من حقوق الانسان والحماية القانونية لها علي الصعيد الوطني والصعيد الدولي, بالاضافة الي حقوق الانسان في الشريعة الاسلامية. الاصول التارخية الفلسفية لحقوق الانسان – المصادر الدولية لحقوق الانسان (العالمية والاقليمية) – المصادر الوطنية لحقوق الانسان – الاجهزة العالمية القائمة علي حماية حقوق الانسان (اجهزة الامم المتحدة) – الحماية الوطنية لحقوق الانسان – حقوق الانسان في الشريعة الاسلامية – عرض لبعض طوائف حقوق الانسان – مراجعة عامة. .

# Topic	Lecture	Tutorial/Practical	No of hours
أهمية حقوق الانسان تعريف حقوق الانسان	2	0	2
تطورفكرة حقوق الانسان حقوق الانسان فى عصر النهضة	2	0	2
حقوق الانسان فى الاديان السماوية	2	0	2
معوقات حقوق الانسان	2	0	2
اساليب المناداة بحقوق الانسان	2	0	2
اليات حقوق الانسان	2	0	2
نطبيقات فى حقوق الانسان	2	0	2
Total sum	14	0	14
5- Teaching and learning	1. Lecture (online/in class) 2. Discussion		

methods	3. Tutorial 4. Brain storming 5. Projects 6. Self-learning 7. Research and Reporting 8. Computer Simulation 9. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 15 % - Mid-term examination: 15 % - Final – term examination: 70 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.

b- Text books/ References	• **عصام محمد احمد زناتي , قانون حقوق الانسان , دار النهضة العربية , 2010** • **عبد الواحد الفار , قانون حقوق الانسان في الفكر الوضعي والشريعة الاسلامية , دار النهضة العربية , 1987.**
c- Periodicals, Web sites .....etc	• **المجلة المصرية للقانون الدولي .** **اصدارات المجلس القومي لحقوق الانسان.**

11-Course contents – Course related program competencies					
	Level A				
	A.5	**A.7**	**A.8**	**A.9**	**A.10**
أهمية حقوق الانسان تعريف حقوق الانسان	√				
تطورفكرة حقوق الانسان حقوق الانسان فى عصر النهضة	√	√			
حقوق الانسان فى الاديان السماوية	√	√			
معوقات حقوق الانسان		√		√	
اساليب المناداة بحقوق الانسان		√	√		
اليات حقوق الانسان			√		√
نطبيقات فى حقوق الانسان			√		√

12-Teaching and learning methods - Course related program competencies					
	Level A				
	A.5	**A.7**	**A.8**	**A.9**	**A.10**
Lecture (online/in class)	√				
Discussion	√	√			
Tutorial	√	√		√	
Problem solving		√		√	
Brain storming			√		

Projects			√	√	
Self-learning					√
Research and Reporting			√		√
Computer Simulation				√	
Teamwork					√

13- Assessment methods - Course related program competencies				
Assessment methods	**Course related program competencies**			
	Level A			
	A.5	**A.8**	**A.9**	**A.10**
1. Mid Term Examination (written/ online)	√			
2. Practical Examination	√	√		
3. Oral Examination	√	√		
4. Formative (quizzes- presentation -reports)		√	√	
5. Final Term Examination (written			√	√

Authorized from board of the department at 1/9/2022

Course coordinator:

Dr. Somaia Desouky

Ministry of Higher Education
High Institute of Electronic Engineering
Ministerial Resolution 5053 - 12/10/2016
K 10, Bilbies – 10th of Ramadan

وزارة التعليم العالي
المعهد العالي للهندسة الإلكترونية
قرار وزاري 5053 – 2016/10/12
ك 10 طريق بلبيس العاشر من رمضان

Course Specification

1- Basic Information

Course Title	**Mathematics (2)**	
Course Code	**BAS 021**	
Academic Year	2022-2023	
Coordinator	Dr. Gamal El-Anani	
Teaching Staff	Dr. Gamal El-Anani	
Level	Level (0)	
Semester	Second Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	2
	Lab	0
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Basic Science	

2- Aim of the course

1. To teach student integral calculus, and integration of transcendental functions.
2. To equip students with methods of Integration, the definite integral, numerical Integration, and Improper Integrals to solve engineering problems..
3. To acquire students a good idea to use iterative methods.
4. To teach students the concepts and applications of infinite series.
5. To provide students with the arithmetic operations on conical sections.

3- Course related program competencies

Level A – General	**A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.** **A.2. Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions** **A.3. Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.** **A.5. Practice research techniques and methods of investigation as an inherent part of learning.**
Level B - Speciality	
4- Course Contents	Analytic geometry: Equation of second degree - Equation of pair of straight lines - Translation and rotation of axes - Conic sections - Cartesian, Cylindrical and Polar spherical coordinates - Method of representing a vector in space - Equation of sphere and surface of revolutions -Plain equation in space - Equation of second order - Translation, Rotation of axis in space. Integral Calculus: Indefinite integral Method of integration (theory and functions) - Definite integral (direct and indirect) - Application on definite integral (areas and volumes) - Numerical Integration - Numerical integration.

# Topic	Lecture	Tutorial/Practical	No of hours
Indefinite integral Method of integration (theory and functions)	4	4	8
Definite integral (direct and indirect) - Application on definite integral (areas and volumes)	6	6	12

Numerical integration	8	8	16
Equation of second degree - Equation of pair of straight lines - Translation and rotation of axes - Conic sections - Cartesian, Cylindrical and Polar spherical coordinates	6	6	12
Method of representing a vector in space - Equation of sphere and surface of revolutions -Plain equation in space - Equation of second order - Translation, Rotation of axis in space.	4	4	8
Total sum	28	28	56

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Tutorial 4. Problem solving 5. Brain storming 6. Projects 7. Self-learning 8. Research and Reporting 9. Computer Simulation 10. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination

	4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 10 % - Mid-term examination: 20 % - Final – term examination: 70 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	▪ Swokowski, E, Olinick ,M and Pence, D., Calculus, PWS Publishing Company - Boston, 1994. ▪ Mary Attenborough, Engineering Mathematics, McGraw - HILL Book Company Europe, 1994. ▪ Anthony croft,Robert Davison, Engineering Mathematics A modern Foundation for Electrical, Electronic & Control Engineering, Addison - Wesley - Publishing Company, 1992.
c- Periodicals, Web sites .....etc	Web Sites related to Mathematics and Mathematical engineering as: **www.math.hmc.edu**, **www.tutorial.math.lamar.edu**, **www.web.mit.edu**

11-Course contents – Course related program competencies				
	Level A			
	A.1	**A.2**	**A.3**	**A.5**
Indefinite integral Method of integration (theory and functions)	√			
Definite integral (direct and indirect) - Application on definite integral (areas and volumes)	√	√		√
Numerical integration		√	√	

Equation of second degree - Equation of pair of straight lines - Translation and rotation of axes - Conic sections - Cartesian, Cylindrical and Polar spherical coordinates	√	√	√	
Method of representing a vector in space - Equation of sphere and surface of revolutions -Plain equation in space - Equation of second order - Translation, Rotation of axis in space.			√	

12-Teaching and learning methods - Course related program competencies

	Level A			
	A.1	**A.2**	**A.3**	**A.5**
Lecture (online/in class)	√	√	√	√
Discussion	√	√	√	√
Tutorial	√	√	√	√
Problem solving	√	√	√	√
Brain storming	√	√	√	√
Projects	√	√	√	√
Self-learning		√		
Research and Reporting			√	
Computer Simulation				
Teamwork				

13- Assessment methods - Course related program competencies

Assessment methods	**Course related program comptencies**			
	Level A			
	A.1	**A.2**	**A.3**	**A.5**
1. Mid Term Examination (written/ online)	√	√	√	√
2. Practical Examination				
3. Oral Examination				
4. Formative (quizzes- presentation -reports)	√	√	√	√

5. Final Term Examination (written	√	√	√	√

Authorized from board of the department at 4/2/2023
Course coordinator:

Dr. Gamal El-Anany

Ministry of Higher Education
High Institute of Electronic Engineering
Ministerial Resolution 5053 - 12/10/2016
K 10, Bilbies – 10th of Ramadan

وزارة التعليم العالي
المعهد العالي للهندسة الإلكترونية
قرار وزاري 5053 – 2016/10/12
ك 10 طريق بلبيس العاشر من رمضان

Course Specification

1- Basic Information

Course Title	**Physics (2)**	
Course Code	**BAS 022**	
Academic Year	2022-2023	
Coordinator	Dr. Somia Ahmed Desoky	
Teaching Staff	Dr. Somia Ahmed Desoky	
Level	Level (0)	
Semester	**2nd** Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	1
	Lab	2
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Basic sciences	

2- Aim of the course

1. To teach students the fundamentals of electrostatic fields due to static charges.
2. To provide students with basic laws and theories in electrostatics.
3. To introduce the concepts of electric potential and Capacitance.
4. To identify the definition of resistance, the units of resistance, and the factors effecting the amount of resistance in a circuit.
5. To predict the effect of varying voltage and resistance upon the current in a circuit .
6. The student should be able to solve simple computational problems which relate the voltage, resistance and current for a simple circuit.
7. To teach students the concepts of steady magnetic field due to dc currents and the motion of charged particles in uniform magnetic fields.
8. To provide students with basic laws and theories in steady magnetic fields.
9. To introduce the concept of inductance.

3- Course related program competencies

Level A – General	A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics. A.2 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions. A.3 Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development A.5 Practice research techniques and methods of investigation as an inherent part of learning
Level B - Speciality	
4- Course Contents	Electricity and Magnetism: Electrostatic Coulomb's Law and Electric Field Gauss's Law Electric Potential ,Electrical current and resistance - Ohm's law - electric power - semiconductors - electromotive force - Kirchhoff's rules - Magnetic fields - Maxwell equations - Ampere's law, Maxwell s equations - Faraday's law - Gauss's law.

# Topic	Lecture	Tutorial/Practical	No of hours
Coulomb's Law and Electric Field	2	3	5
Gauss's Law	2	3	5
Electric Potential	6	6	12
Capacitance, Electric Energy. and Properties of Insulators	4	6	10
Current(In Dc Circuits) and Resistance	4	6	10
The Magnetic Field	2	2	4
Sources of the Magnetic Field	2	2	4
Faradays Law and Inductance and Magnetic Fields in Matter	2	2	4
Total sum	24	32	56

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Tutorial 4. Problem solving 5. Brain storming 6. Projects 7. Self-learning 8. Research and Reporting 9. Computer Simulation 10. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. Provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial , Practical work and quizzes : %20 - Mid-term examination: % 20 - Final – term examination: %60 Total 100 %

10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	▪ Shipman, Wilson, Todd, An introduction to Physical Science, D.C. Heath and Company, Toronto, 1990. ▪ Richard T.Weidner, Physics - Revised Version, Allyn and Bacon, Boston, USA, 1989. Serway - Beicher, Physics for Scientists and Engineering with Modern, Saunders Collage Publishing, USA, 1989.
c- Periodicals, Web sites ……etc	**http://hyperphysics.phy-astr.gsu.edu/hbase/hph.html**

11-Course contents – Course related program competencies

	Level A			
	A.1	**A.2**	**A.3**	**A5**
Coulomb's Law and Electric Field	√			√
Gauss's Law	√	√		
Electric Potential	√	√	√	
Capacitance, Electric Energy. and Properties of Insulators	√	√		√
Current(In Dc Circuits) and Resistance	√		√	
The Magnetic Field	√		√	
Sources of the Magnetic Field	√			

12-Teaching and learning methods - Course related program competencies

	Level A			
	A.1	**A.2**	**A.3**	**A.5**
Lecture (online/in class)	√			
Discussion	√		√	
Tutorial	√		√	√

Problem solving	√			√
Brain storming		√	√	
Projects		√		√
Self-learning				
Research and Reporting				
Computer Simulation				
Teamwork	√			

13- Assessment methods - Course related program competencies							
Assessment methods	**Course related program comptencies**						
	Level A						
	A.1	**A.2**	**A.3**	**A.5**			
1. Mid Term Examination (written/ online)	√		√				
2. Practical Examination		√		√			
3. Oral Examination							
4. Formative (quizzes- presentation -reports)	√	√	√				
5. Final Term Examination (written	√		√	√			

Authorized from board of the department at 2023

Course coordinator:

Dr. Somaia Desouky

Ministry of Higher Education
High Institute of Electronic Engineering
Ministerial Resolution 5053 - 12/10/2016
K 10, Bilbies – 10th of Ramadan

وزارة التعليم العالي
المعهد العالي للهندسة الإلكترونية
قرار وزاري 5053 – 2016/10/12
ك 10 طريق بلبيس العاشر من رمضان

Course Specification

1- Basic Information

Course Title	**Engineering chemistry**	
Course Code	**– BAS 023**	
Academic Year	2022-2023	
Coordinator	Dr/ aya salem	
Teaching Staff	Dr/ aya salem	
Level	Level (0)	
Semester	second Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	1
	Lab	2
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Electronics Engineering and Electrical Communication Computers and Systems Engineering	

2- Aim of the course

1. introduce the concepts, procedures and methodology Equations of State - Introduction to Chemical Thermodynamics -
2. develop the Material & Energy Balance in Fuel Combustion and Chemical Processes -
3. introduce the General Properties of Solutions - Dynamic Equilibrium in Physical and Chemical Processes -
4. Expose the Principles in Electrochemistry - Introduction to Corrosion Engineering
5. management some topics in process Chemical Industries (Industry & Chemistry of Cement – Chemical Fertilizer Industries - Sugar Industry - Dyes & Dyeing Industry – Petrochemical Industries - Sulfuric acid Industry).

3- Course related program competencies

Level A – General	A.5 Practice research techniques and methods of investigation as an inherent part of learning. A.7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. A.8 Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools A.9 Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations. A.10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.
Level B - Speciality	
4- Course Contents	BAS 023: Engineering Chemistry 5 Hrs. = [2 Lect. + 1 Tut + 2 Lab] Equations of State - Introduction to Chemical Thermodynamics - Material & Energy Balance in Fuel Combustion and Chemical Processes - General Properties of Solutions - Dynamic Equilibrium in Physical and Chemical Processes - Basic Principles in Electrochemistry - Introduction to Corrosion Engineering - Selected topics in process Chemical Industries (Industry & Chemistry of Cement - Chemical Fertilizer Industries - Sugar Industry - Dyes & Dyeing Industry - Petrochemical Industries - Sulfuric acid Industry). معادلات الحالة. مقدمة في الديناميكا الحرارية الكيميائية. الميزان المادي والحراري في احتراق الوقود والعمليات الكيميائية. الخواص العامة للمحاليل.

	الاتزان الديناميكي في العمليات الفيزيائية والكيميائية. اساسيات الكيمياء الكهربية. مقدمة في هندسة التاكل. موضوعات مختارة في العمليات الصناعية الكيميائية (كيمياء وصناعة الاسمنت . الأسمدة الكيميائية. صناعة السكر. الصباغة ومواد الصباغة. الصناعات البتروكيميائية. صناعة حمض الكبريتيك) .

# Topic	Lecture	Tutorial/Practical	No of hours
Equations of State	2	1	2
Introduction to Chemical Thermodynamics	2	1	2
Material & Energy Balance in Fuel Combustion and Chemical Processes	6	3	6
General Properties of Solutions	4	2	4
Dynamic Equilibrium in Physical and Chemical Processes	2	1	2
Basic Principles in Electrochemistry	4	2	4
Introduction to Corrosion Engineering	4	2	4
Selected topics in process Chemical Industries (Industry & Chemistry of Cement - Chemical Fertilizer Industries - Sugar Industry - Dyes & Dyeing Industry - Petrochemical Industries - Sulfuric acid Industry).	4	2	4

Total sum	28	14	28

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. brain storming 4. Projects 5. Self-learning 6. Research and Reporting 7. Computer Simulation 8. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- quizzes : 15 % - Mid-term examination: 15 % - Final – term examination: 70 % Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book

	authorized by the department.
b- Text books/ References	▪ Theodore L. Brown, et al, Chemistry the Central Science, Prentice Hall Int. (Pearson International latest edition), 2009.
c- Periodicals, Web sites ……etc	

11-Course contents – Course related program competencies					
	Level A				
	A.5	**A.7**	**A.8**	**A.9**	**A.10**
Equations of State	√	√			
Introduction to Chemical Thermodynamics	√	√			
Material & Energy Balance in Fuel Combustion and Chemical Processes		√	√		
General Properties of Solutions		√	√		
Dynamic Equilibrium in Physical and Chemical Processes Basic Principles in Electrochemistry			√	√	
Introduction to Corrosion Engineering			√	√	
Selected topics in process Chemical Industries (Industry & Chemistry of Cement - Chemical Fertilizer Industries - Sugar Industry - Dyes & Dyeing Industry - Petrochemical Industries - Sulfuric acid Industry).				√	√

12-Teaching and learning methods - Course related program competencies					
	Level A				
	A.5	A.7	A.8	A.9	A.10
Lecture (online/in class)	√				
Discussion	√	√			
Tutorial	√	√	√	√	
Problem solving		√		√	
Brain storming			√		
Projects			√	√	
Self-learning					√
Research and Reporting			√		√
Computer Simulation				√	
Teamwork					√

13- Assessment methods - Course related program competencies					
Assessment methods	Course related program comptencies				
	Level A				
	A.5	A.7	A.8	A.9	A.10
1. Mid Term Examination (written/ online)	√	√			
2. Practical Examination		√			
3. Oral Examination		√	√		
4. Formative (quizzes- presentation -reports)			√	√	
5. Final Term Examination (written				√	√

Authorized from board of the department at 11/2/2023

Course coordinator:

Dr./ aya .m. salem

Ministry of Higher Education
High Institute of Electronic Engineering
Ministerial Resolution 5053 - 12/10/2016
K 10, Bilbies – 10th of Ramadan

وزارة التعليم العالي
المعهد العالي للهندسة الإلكترونية
قرار وزاري 5053 – 2016/10/12
ك 10 طريق بلبيس العاشر من رمضان

Course Specification

1- Basic Information

Course Title	**Principals of Manufacturing Engineering**	
Course Code	MED 024	
Academic Year	2022-2023	
Coordinator	Dr. Abdel Salam Malek	
Teaching Staff	Dr. Abdel Salam Malek	
Level	Level (0)	
Semester	Second Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	1
	Lab	2
Department offering the program	Electronics and Communications Engineering , Computers and Systems Engineering , Communications and Computer Engineering	
Department offering the course	Department of Design & Manufacturing Engineering	

2- Aim of the course

1. To provide student with the nature of engineering materials.
2. To introduce students to engineering Instruments.
3. To acquire students the practical skills in metal forming and machining.
4. To teach students different methods of joining metals.
5. To introduce students to non-conventional machining.

3- Course related program competencies

Level A – General	A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics. A.2 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions A.3 Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical, and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development A.4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles. A.6 Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements. A.7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. A.9 Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations. A.10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.
Level B - Speciality	
4- Course Contents	**Syllabus:** Engineering Materials, Manufacturing Processes: Casting and molding processes, metal forming, forming of plastics, powder metallurgy; Material Joining processes: welding, soldering, brazing, riveting, joining by mechanical elements; Material removal processes, metal cutting and finishing processes; Practical training المواد الهندسية وخصائصها, عمليات التصنيع: المسبوكات وقوالب الصب, تشكيل المعادن, تشكيل المواد البلاستيكية, ميتالورجيا المساحيق, عمليات وصل المعادن: طرق اللحام والقصدرة والبرشمة والتجميع بعناصر ميكانيكية وغيرها, عمليات ازالة وقطع المعادن, تدريب عملي **Practical Laboratory:** • 01 Practice on standard machining operations. • 02 Practice on standard welding operations. • 03 Practice on standard Soldering operations.

	• 04 Practice on standard Brazing operations. • 05 Practice on standard riveting operations. • تمارين ونماذج عملية على تشكيل الخشب بورشة النجارة • تمارين ونماذج عملية على تشكيل المعادن بورش الخراطة والبرادة واللحام

# Topic	Lecture	Tutorial/Practical	No of hours
Engineering materials; Ferrous and non-ferrous metals.	3	2	12
Introduction to engineering Instruments.	2	2	10
Metal forming and machining.	3	4	16
Different methods of joining metals.	3	4	16
Introduction to non-conventional machining.	3	2	12
Total sum	14	14	56

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Tutorial 4. Problem solving 5. Brain storming 6. Projects 7. Self-learning 8. Research and Reporting 9. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. Provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	

a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 05 - Mid-Term exam: Week no. 08 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : % - Mid-term examination: % - Final – term examination: % Total 100 %
10- List of text books and references:	
a- Course notes	Lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	1. M. Eissa: Production Engineering. 3th edition. Eitrac for publishing books (2005). 2. H. El-Houfy: Nontraditional machining techniques. Taylor & Francis (2007).
c- Periodicals, Web sites .....etc	All Web sites related to the course.

11-Course contents – Course related program competencies

	Level A								Level B
	A.1	**A.2**	**A.3**	**A.4**	**A.6**	**A.7**	**A.9**	**A.10**	
Engineering Materials	√			√		√	√	√	
Manufacturing Processes: Casting and molding processes, metal forming, forming of plastics, powder metallurgy		√		√			√	√	
Material Joining processes: welding, soldering, brazing, riveting, joining by mechanical elements		√		√			√	√	

Material removal processes, metal cutting and finishing processes	√	√		√			√	√	
Practical training	√	√	√	√	√	√	√	√	

12-Teaching and learning methods - Course related program competencies									
	Level A								**Level B**
	A.1	**A.2**	**A.3**	**A.4**	**A.6**	**A.7**	**A.9**	**A.10**	
Lecture (online/in class)	√	√	√	√	√	√	√	√	
Discussion	√	√	√	√	√	√	√	√	
Tutorial	√		√		√				
Problem solving	√		√		√				
Brain storming	√	√	√	√	√	√	√	√	
Projects					√	√			
Self-learning				√	√				
Research and Reporting									
Computer Simulation									
Teamwork					√	√			

13- Assessment methods - Course related program competencies									
Assessment methods	**Course related program competencies**								
	Level A								**Level B**
	A.1	**A.2**	**A.3**	**A.4**	**A.6**	**A.7**	**A.9**	**A.10**	
1. Mid Term Examination (written/ online)	√	√	√	√	√	√	√	√	
2. Practical Examination		√		√			√	√	
3. Oral Examination									
4. Formative (quizzes- presentation - reports)	√	√	√	√	√	√	√	√	
5. Final Term Examination (written)	√	√	√	√	√	√	√	√	

Course coordinator:

Dr. Abdel Salam MALEK

Course Specification

1- Basic Information

Course Title	Computer Programming	
Course Code	**CSE025**	
Academic Year	2022-2023	
Coordinator	Dr. Soheir Afifi	
Teaching Staff	Dr. Soheir Afifi	
Level	Level (0)	
Semester	Second Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	0
	Lab	2
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	• Computers and Systems Engineering,	
2- Aim of the course		

The main objective of this course is to learn the basics of C++ programming language. :

1. Program structure
2. Variable declarations
3. Data types and operators
4. C++program statements like **input/output** statements ,the flow control statements include
   if statement, **for** statement and **while** statement.functions, arrays, pointers and classes
5. Explain the concept of a variable and declare, initialize and modify variables of data types int, double and char
6. Create and comment simple C-programs that may print text, special characters and variables to the screen with controlled formatting
7. Create simple C-programs that utilize for-loops to repeat blocks of instructions
8.

3- Course related program competencies

Level A – General	**A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.** **A.2. Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions** **A.3. Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.** **A.5. Practice research techniques and methods of investigation as an inherent part of learning.**
Level B - Speciality	

4- Course Contents	**Syllabus:** Introduction to computer software, evolution of programming languages, machine code, assembly language, high level languages, types and characteristics of translators. Basics of C++ programming language including C++ program structure, variables, data types, constants, expressions, and arithmetic and logic operators. C++ program statements including: input/output statements, flow control statements (if statement, if else statement, nested if and switch case statement), iterative statements (for loop, while loop and do while loop). Introduction to functions including function declaration, calling function, passing parameters to function, macros and recursion. Introduction to pointers and arrays.

# Topic	Lecture	Tutorial/Practical	No of hours
Introduction to computer software, evolution of programming languages, machine code, assembly language, high level languages .	4	4	8
Basics of C++ programming language including C++ program structure, variables, data types, constants	6	6	12
expressions, and arithmetic and logic operators. C++ program statements including: input/output statements, flow control statements (if statement, if else statement, nested if and switch case statement),	4	4	8
iterative statements (for loop)	8	8	16
while loop and do while loop Introduction to functions including function declaration, calling function, passing parameters to function, macros and recursion. Introduction to pointers and arrays.	8	8	16

Total sum	30	30	60
5- Teaching and learning methods	1. Lectures 2. Tutorials. 3. Homework Exercises 4. Reports 5. Projects		
6- Teaching and learning methods for disable students	1. Assign a portion of the office hours for those students. 2. Give them specific tasks and evaluate them in it. 3. Repeat the explanation of some of the course material and tutorials. 4. Assign a teaching assistance to follow up the performance of this group of students.		
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance		
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.		
9- Students assessment			
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)		
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 5 - Mid-Term exam: Week no . 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16		
c- Weighting of assessment	▪ Class tutorial and quizzes: 10 % ▪ Mid-term examination: 10 % ▪ Lab/practical exam: 20 % ▪ Final – term examination: 60 % Total 100 %		

10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book
b- Text books/ References	Peter Van-Roy, Seif Haridi, Concepts, techniques, and models of computer programming, MIT Press USA, 2004.
c- Periodicals, Web sites .....etc	http://www.learnalgorithms.in/ https://www.coursera.org/course/algo

11-Course contents – Course related program competencies				
	Level A			
	A.1	A.2	A.3	A.5
Introduction to computer software, evolution of programming languages, machine code, assembly language, high level languages	√	√		
Basics of C++ programming language including C++ program structure, variables, data types, constants?	√	√	√	
expressions, and arithmetic and logic operators. C++ program statements including: input/output statements, flow control statements (if statement, if else statement, nested if and switch case statement),	√	√	√	
iterative statements (for loop)	√	√	√	
while loop and do while loop Introduction to functions including function declaration, calling function, passing parameters to function, macros and recursion. Introduction to pointers and arrays.	√	√	√	

12-Teaching and learning methods - Course related program competencies

	Level A			
	A.1	**A.2**	**A.3**	**A.5**
Lecture (online/in class)	√	√	√	
Discussion	√	√	√	
Tutorial	√	√	√	
Problem solving	√	√	√	
Brain storming	√	√	√	
Projects	√	√	√	
Self-learning		√		
Research and Reporting			√	
Computer Simulation	√	√	√	
Teamwork				

13- Assessment methods - Course related program competencies				
Assessment methods	**Course related program comptencies**			
	Level A			
	A.1	**A.2**	**A.3**	**A.5**
1. Mid Term Examination (written/ online)	√	√	√	√
2. Practical Examination				
3. Oral Examination				
4. Formative (quizzes- presentation -reports)	√	√	√	√
5. Final Term Examination (written	√	√	√	√

Authorized from board of the department at 16/2/2023

Course coordinator:

Doctor. Soheir afifi

Course Specification

1- Basic Information

Course Title	**Arabic Language**	
Course Code	**HUM 026**	
Academic Year	2022-2023	
Coordinator	**أ.د امين سعيد**	
Teaching Staff	**أ.د امين سعيد**	
Level	Level (0)	
Semester	Second Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	0
	Lab	0
Department offering the program	• Electronics and Communications Engineering, • Computers and Systems Engineering, • Communications and Computer Engineering	
Department offering the course	Humanities & Social Sciences	

2- Aim of the course

1. حالات الاعراب والبناء للاسماء والافعال
2. تقدير حركة الاعراب وانابة بعض علاماته عن بعض -
3. – نواسخ الجملة العربية وتغيرات الجملة
4. – الافعال الخمسة والاسماء الخمسة وصور اعرابها – اللزوم والتعدي وصوره في اعراب الافعال – حالات المنع من الصرف
1. – صور تمييز العدد – صور الاضافة والمشتقات – الكشف في المعجم العربي قواعد الاملاء العربية وعلامات الترقيم الواجبة

3- Course related program competencies

Level A – General	A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics. A.2 Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions. A.4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.
Level B - Specialist	
4- Course Contents	**Syllabus:** الجملة العربية بين الإسمية والخبرية – حالات الاعراب والبناء للاسماء والافعال - تقدير حركة الاعراب وانابة بعض علاماته عن بعض – نواسخ الجملة العربية وتغيرات الجملة – الافعال الخمسة والاسماء الخمسة وصور اعرابها – اللزوم والتعدي وصوره في اعراب الافعال – حالات المنع من الصرف – صور تمييز العدد – صور الاضافة والمشتقات – الكشف في المعجم العربي قواعد الاملاء العربية وعلامات الترقيم الواجبة

# Topic	Lecture	Tutorial/Practical	No of hours
الجملة العربية بين الإسمية والخبرية – حالات الاعراب والبناء للاسماء والافعال - تقدير حركة الاعراب وانابة بعض علاماته عن بعض	4	0	0
نواسخ الجملة العربية وتغيرات الجملة – الافعال الخمسة والاسماء الخمسة وصور اعرابها	6	0	0
اللزوم والتعدي وصوره في اعراب الافعال – حالات المنع من الصرف	8	0	0
صور تمييز العدد – صور الاضافة والمشتقات	6	0	0

الكشف في المعجم العربي قواعد الاملاء العربية وعلامات الترقيم الواجبة	4	0	0
Total sum	28	0	0

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Tutorial 4. Problem solving 5. Brain storming 6. Projects 7. Self-learning 8. Research and Reporting 9. Computer Simulation 10. Teamwork
6- Teaching and learning methods for disable students	1. Additional Tutorials 2. Online lectures and assignments 3. Using as many audio/visual aids as possible. 4. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and provide them with specific tailored tasks. 2. Repeat the explanation of some of the material and tutorials. 3. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.

9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written/ online) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)
b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 4 - Mid-Term exam: Week no. 8 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : 10% - Mid-term examination: 20 %

	- Final – term examination: 70% Total 100 %
10- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department.
b- Text books/ References	There are lectures notes prepared in the form of a book
2c- Periodicals, Web sites .....etc.	

11-Course contents – Course related program competencies

	Level A		
	A.1	**A.2**	**A.4**
الجملة العربية بين الإسمية والخبرية – حالات الاعراب والبناء للاسماء والافعال - تقدير حركة الاعراب وانابة بعض علاماته عن بعض	√		
نواسخ الجملة العربية وتغيرات الجملة – الافعال الخمسة والاسماء الخمسة وصور اعرابها	√	√	
اللزوم والتعدي وصوره في اعراب الافعال – حالات المنع من الصرف		√	√
صور تمييز العدد – صور الاضافة والمشتقات	√	√	√
الكشف في المعجم العربي قواعد الاملاء العربية وعلامات الترقيم الواجبة			√

12-Teaching and learning methods - Course related program competencies	**Level A**		
Problem solving	√	√	√
Brain storming		√	√
Projects		√	√
Self-learning			
Research and Reporting			
Computer Simulation		√	√
Teamwork			

13- Assessment methods - Course related program competencies			
Assessment methods	**Course related program comptencies**		
	Level A		
	A.1	**A.2**	**A.4**
1. Mid Term Examination (written/ online)	√	√	√
2. Practical Examination			
3. Oral Examination	√	√	√
4. Formative (quizzes- presentation -reports)	√	√	√
5. Final Term Examination (written	√	√	√

Authorized from board of the department at 1/9/2022

Course coordinator:

Prof. Amin Said Abd-Elghany

Ministry of Higher Education
High Institute of Electronic Engineering
Ministerial Resolution 5053 - 12/10/2016
K 10, Bilbies – 10th of Ramadan

وزارة التعليم العالي
المعهد العالي للهندسة الإلكترونية
قرار وزاري 5053 – 2016/10/12
ك 10 طريق بلبيس العاشر من رمضان

Course Specification

1- Basic Information

Course Title	**English Language**	
Course Code	HUM 027	
Academic Year	2022-2023	
Coordinator	Dr. Abdel Salam Malek	
Teaching Staff	Dr. Abdel Salam Malek	
Level	Level (0)	
Semester	Second Term	
Number of Weekly Contact Hours	Lecture	2
	Tutorial	0
	Lab	0
Department offering the program	Electronics and Communications Engineering , Computers and Systems Engineering , Communications and Computer Engineering	
Department offering the course	Department of Basic Science	

2- Aim of the course

1. To improve the ability of students to listen, speak and write English.
2. To enhance vocabulary.
3. To enable students to compose freely and independently in speech and writing.
4. To enable the students for the use of grammar correctly,
5. To diagnose and treat the various English skills.
6. To enhance the imagination and creativity of the students.
7. To motivate the students.

3- Course related program competencies

Level A – General	A.5 Practice research techniques and methods of investigation as an inherent part of learning. A.7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. A.8 Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools. A.9 Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations. A.10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.
Level B - Speciality	
4- Course Contents	**Syllabus:** How to talk about the people in your life - how to talk about greeting customs - how to explain who people are - how to correct a misunderstanding - writing a self – introduction - how to talk about your background - how to talk about tourism - how to describe objects - how to tell an anecdote - writing an intercultural experience - how to talk about your schooldays. - How to talk about your achievements - how to offer hospitality - how to talk about your education and career - writing a CV - how to say how you feel about things - how to talk about music - how to compare and discuss preference. how to explain what a film is about - writing a description of a film or book - how to talk about countries and governments - how to talk about rules and laws - how to talk about stories in the news - how to talk about past events - writing narrating a story - how to express strong feelings - how to tell How to talk about the people in your life – how to talk about greeting customs - how to explain who people are - how to correct a misunderstanding – writing a self - introduction – how to talk about your background - how to talk about tourism - how to describe objects - how to tell an anecdote - writing an intercultural experience - how to talk about your schooldays - how to talk about your achievements – how to offer hospitality - how to talk about your education and career - writing a CV - how to say how you feel about things - how to talk about music - how to compare and discuss preference - comparing with as – how to explain what a film is about – writing a description of a film or book - how to talk about countries and governments - how to talk about rules and laws - how to talk about stories in the news - how to talk about past events - writing narrating a story - how to express strong feelings – how to tell and show interest in an anecdote - how to talk about people in your neighborhood (pronouns in reported speech) - how to report what people said - writing exchanging news in a personal letter - how to say how people look – how to talk about fashion - how to talk about plans and intentions - how to express guesses - writing a letter of application - how to talk on the phone - how to talk about ability - how to report an interview - how to report a conversation - writing a report – how to make small talk - how to talk about your future - how to give advice - how to talk about unreal situations - writing an opinion - how to exchange opinion - how to talk about your shopping habits - how to talk about recent activities - how to ask about products in a shop - writing a letter of complaint - how to give and ask about directions - how to talk about holiday

	accommodation - how to give health advice - how to give extra information - writing a website recommendation – how to explain your point of view - how to talk about hopes and wishes - how to describe the plot of a story - how to talk about important decisions - writing a story with a moral**.**

# Topic	**Lecture**	**Tutorial/Practical**	**No of hours**
How to talk to and about people.	2	0	4
How to talk about things.	2	0	4
How to talk about yourself.	2	0	4
How to avoid misunderstandings.	3	0	6
How to have a good job interview.	3	0	6
Resume writing.	2	0	4
Total sum	14	0	28

5- Teaching and learning methods	1. Lecture (online/in class) 2. Discussion 3. Brain storming 4. Projects 5. Self-learning 6. Research and Reporting 7. Teamwork
6- Teaching and learning methods for disable students	1. Online lectures and assignments 2. Using as many audio/visual aids as possible. 3. Providing extra opportunities for practice
7- Teaching and learning methods for low capacity students	1. Assign a portion of the office hours for those students and 2. Provide them with specific tailored tasks. 3. Repeat the explanation of some of the material and tutorials. 4. Assign a teaching assistance to follow up their performance
8- Teaching and learning methods for outstanding students	1. Assign course project tasks to those students. 2. Give them advanced extra-curriculum topics. 3. Encourage them to take part in a pilot research and case studies.
9- Students assessment	
a- Assessment methods	1. Mid Term Examination (written) 2. Practical Examination 3. Oral Examination 4. Formative (quizzes- presentation -reports) 5. Final Term Examination (written)

b- Assessment schedule	- Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week no. 05 - Mid-Term exam: Week no. 08 - Quizz-2: Week no. 12 - Final – term examination: Week no. 16
c- Weighting of assessment	- Class tutorial and quizzes : % - Mid-term examination: % - Final – term examination: % Total 100 %
10- List of text books and references:	
a- Course notes	Lectures prepared notes authorized by the department.
b- Text books/ References	Mark Hancock & Annie McDonald, English Result – International Level, Oxford University press, Last Edition.
c- Periodicals, Web sites ……etc	All Web sites related to the course.

11-Course contents – Course related program competencies

	Level A					Level B
	A.5	**A.7**	**A.8**	**A.9**	**A.10**	
How to talk to and about people.	√	√	√	√	√	
How to talk about things.	√	√	√	√	√	
How to talk about yourself.	√	√	√	√	√	
How to avoid misunderstandings.	√	√	√	√	√	
How to have a good job interview.	√	√	√	√	√	
Resume writing	√	√	√	√	√	

12-Teaching and learning methods - Course related program competencies

	Level A					Level B
	A.5	A.7	A.8	A.9	A.10	
Lecture (online/in class)	√	√	√	√	√	
Discussion	√	√	√	√	√	
Tutorial						
Problem solving						
Brain storming	√	√	√	√	√	
Projects	√	√	√	√	√	
Self-learning	√	√	√	√	√	
Research and Reporting	√	√	√	√	√	
Computer Simulation						
Teamwork	√	√	√	√	√	

13- Assessment methods - Course related program competencies

Assessment methods	Course related program competencies					
	Level A					Level B
	A.5	A.7	A.8	A.9	A.10	
1. Mid Term Examination (written/ online)	√	√	√	√	√	
2. Practical Examination	√	√	√	√	√	
3. Oral Examination						
4. Formative (quizzes- presentation - reports)	√	√	√	√	√	
5. Final Term Examination (written)	√	√	√	√	√	

Authorized from board of the department at / /

Course coordinator:

Dr. Abdel Salam MALEK