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 (3)   |                                |  |
|-------------------------|---|--------------------------------|--|
| Course Code             | BAS 111   |                                |  |
| Academic Year           | 2022-2023   |                                |  |
| Coordinator             | Dr. Gamal El-Anani  |                                |  |
| Teaching Staff          | Dr. Gamal El-Anani  |                                |  |
| Level                   | Level (1)   |                                |  |
| Semester                | First Term  |                                |  |
| Number of Weekly        | Lecture   | 2                              |  |
| Contact Hours           | Tutorial  | 2                              |  |
|                         | Lab   | 0                              |  |
| Department offering the | <ul> <li>Electronics ar</li> </ul>                          | nd Communications Engineering, |  |
| program                 | Computers a   | nd Systems Engineering,        |  |
|                         | <ul> <li>Communications and Computer Engineering</li> </ul> |                                |  |
|                         |   |                                |  |
| Department offering the | Basic Science   |                                |  |
| course                  |   |                                |  |
| 2 Aim of the course     |   |                                |  |

#### 2- Aim of the course

- 1. Understand the classification of differential equations.
- 2. Understand the methods to solve the differential equations.
- 3. Understand using matrices to solve systems of linear differential equations.
- 4. Be familiar with Laplace transformations, and its applications

|                         | problems by ap   | A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics. |                         |                    |  |  |  |  |  |  |
|-------------------------|--|---|-------------------------|--------------------|--|--|--|--|--|--|
| neral                   | A.2. Develop and conduct appropriate experimentation and/simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineerin judgment to draw conclusions  |   |                         |                    |  |  |  |  |  |  |
| Level A – General       | A.3. Apply engineering design processes to produce cost-<br>effective solutions that meet specified needs with<br>consideration for global, cultural, social, economic,<br>environmental, ethical and other aspects as appropriate to the<br>discipline and within the principles and contexts of sustainable<br>design and development. |   |                         |                    |  |  |  |  |  |  |
|                         | A.5. Practice reas an inherent   |   | iques and method<br>ng. | s of investigation |  |  |  |  |  |  |
| Level B -<br>Speciality |  |   |                         |                    |  |  |  |  |  |  |
| 4- Course<br>Contents   | <b>Synabus.</b> This - Order Differential Equations - Landar Differentiation   |   |                         |                    |  |  |  |  |  |  |
| # Topic                 |  | Lecture   | Tutorial/Practical      | No of hours        |  |  |  |  |  |  |
| equations, or           | ifferential equations,   | 4   | 4                       | 8                  |  |  |  |  |  |  |
|                         | us Functions and<br>us equations, Exact  | 6   | 6                       | 12                 |  |  |  |  |  |  |

| equation                      |         |   |                 |                                |     |  |  |
|-------------------------------|---------|---|-----------------|--------------------------------|-----|--|--|
| Second order differential     |         |   |                 |                                |     |  |  |
| equations                     |         | 8   | 8               | 16                             |     |  |  |
|                               |         |   |                 |                                |     |  |  |
| Partial derivative and Applic | ations  | s   |                 |                                |     |  |  |
| of Partial Derivatives        |         | 6 6 12  |                 |                                |     |  |  |
| Double integrals –line integr | als     |   |                 |                                |     |  |  |
| Fourier series and transform  | S       | 4   | 4               | 8                              |     |  |  |
| Total sum                     |         | 28  | 28              | 56                             |     |  |  |
| 5- Teaching and learning      |         | ·   | line/in class)  | l                              |     |  |  |
| methods                       |         | 2. Discussion   |                 |                                |     |  |  |
|                               |         | <ul><li>3. Tutorial</li><li>4. Problem sol</li></ul>                              | lvina           |                                |     |  |  |
|                               |         | 5. Brain storm  | •               |                                |     |  |  |
|                               |         | 6. Projects   | 8               |                                |     |  |  |
|                               |         | 7. Self-learnin   |                 |                                |     |  |  |
|                               |         |   | nd Reporting    |                                |     |  |  |
|                               |         | 9. Computer S   | Simulation      |                                |     |  |  |
| 6- Teaching and learning      |         | 10. Teamwork  1. Additional 3   | Futorials       |                                |     |  |  |
| methods for disable studen    | tc      | <ol> <li>Additional Tutorials</li> <li>Online lectures and assignments</li> </ol> |                 |                                |     |  |  |
| methous for disable studen    | LS      | 3. Using as many audio/visual aids as possible.                                   |                 |                                |     |  |  |
|                               |         | _   | •               | ies for practice               |     |  |  |
| 7- Teaching and learning      |         | 1. Assign a portion of the office hours for those students                        |                 |                                |     |  |  |
| methods for low capacity      |         | and   |                 |                                |     |  |  |
| students                      |         | •   | m with specific |                                |     |  |  |
|                               |         | -   | explanation of  | some of the material and       |     |  |  |
|                               |         | tutorials.  | ahing assistans | o to fallow up their           |     |  |  |
|                               |         | 4. Assign a tea   | •               | e to follow up their           |     |  |  |
| 8- Teaching and learning      |         | •   |                 | to those students.             |     |  |  |
| methods for outstanding       |         | _   |                 | -curriculum topics.            |     |  |  |
| students                      |         | 3. Encourage t  | them to take pa | ort in a pilot research and ca | ase |  |  |
|                               |         | studies.  |                 |                                |     |  |  |
| 9- Students assessment        |         |   |                 |                                |     |  |  |
| a- Assessment                 |         | Mid Term Examination (written/ online)  |                 |                                |     |  |  |
| methods                       |         | Practical Examination   |                 |                                |     |  |  |
|                               |         | Oral Examination  |                 |                                |     |  |  |
|                               |         | Formative (quizzes- presentation -reports)  |                 |                                |     |  |  |
| b- Assessment schedule        |         | inal Term Examination (written) rcise sheet/ Lab assignment : Weekly              |                 |                                |     |  |  |
| 7-33C33HICHUSUICUUIC          | LVCI    | cise sheet/ Lab assignment : Weekly   |                 |                                |     |  |  |
|                               | - Quizz | z-1:  |                 | Week no. 5                     |     |  |  |
|                               |         |   |                 |                                |     |  |  |

|  | - Mid-Term exam: Week no . 8   |  |  |  |  |  |
|--|--|--|--|--|--|--|
|  | - Quizz-2: Week no. 12   |  |  |  |  |  |
|  | - Final – term examination: Week no. 16                                      |  |  |  |  |  |
| c- Weighting of                        | - Class tutorial and quizzes : 10 %  |  |  |  |  |  |
| assessment                             | - 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              | <ul> <li>Swokowski, E, Olinick, M and Pence, D., Calculus, PWS</li> </ul>    |  |  |  |  |  |
| b reactions, hererenees                | Publishing Company - Boston, 1994.   |  |  |  |  |  |
|  | Mary Attenborough, Engineering Mathematics, McGraw - HILL                    |  |  |  |  |  |
|  | Book Company Europe, 1994.   |  |  |  |  |  |
|  | <ul> <li>Anthony croft, Robert Davison, Engineering Mathematics A</li> </ul> |  |  |  |  |  |
|  | modern Foundation for Electrical, Electronic & Control                       |  |  |  |  |  |
|  |  |  |  |  |  |  |
| . B. C. P. I. Male No.                 | Engineering, Addison - Wesley - Publishing Company, 1992.                    |  |  |  |  |  |
| c- Periodicals, Web sites              | Web Sites related to Mathematics and Mathematical engineering as:            |  |  |  |  |  |
| etc                                    | 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 |  |  |  |
| The concept of differential equations, order, degree. First order differential equations, Separable equations | <b>V</b> |          |          |     |  |  |  |
| Homogeneous Functions and Homogeneous equations, Exact equation   | 1        | 1        |          | 7   |  |  |  |
| Second order differential equations   |          | 1        | <b>V</b> |     |  |  |  |
| Partial derivative and Applications of Partial Derivatives Double integrals –line integrals                   | √        | <b>V</b> | 1        |     |  |  |  |
| Fourier series and transforms   |          |          | 1        |     |  |  |  |

| 12-Teaching and learning methods - Course related program competencies |         |  |
|--|---------|--|
|  | Level A |  |

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

| 13- Assessment methods - Course related program competencies |                                    |     |      |      |     |  |  |  |
|--|------------------------------------|-----|------|------|-----|--|--|--|
| Assessment methods   | Course related program comptencies |     |      |      |     |  |  |  |
|  |                                    |     | Leve | el A |     |  |  |  |
|  |                                    | A.1 | A.2  | A.3  | A.5 |  |  |  |
| Mid Term Examination (written/ online)                       |                                    | 1   | 1    | 1    | 1   |  |  |  |
| 2. Practical Examination                                     |                                    |     |      |      |     |  |  |  |
| 3. Oral Examination  |                                    |     |      |      |     |  |  |  |
| 4. Formative (quizzes- presentation -repor                   | ts)                                | 1   | 1    | 1    | 1   |  |  |  |
| 5. Final Term Examination (written                           |                                    | 1   | 1    | 1    | 1   |  |  |  |

**Course coordinator:** 

Dr. Gamal El-Anany





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## Course Specification

## 1- Basic Information

| Course Title            | Electrical Circuits 1                  |                                |  |  |  |
|-------------------------|--|--------------------------------|--|--|--|
| Course Code             | ELP 112                                |                                |  |  |  |
| Academic Year           | 2022-2023                              |                                |  |  |  |
| Coordinator             | Dr. Mohammed Elkho                     | amry                           |  |  |  |
| Teaching Staff          | Dr. Mohammed Elkho                     | amry                           |  |  |  |
| Level                   | Level (1)                              |                                |  |  |  |
| Semester                | First Term                             |                                |  |  |  |
| Number of Weekly        | Lecture                                | 2                              |  |  |  |
| Contact Hours           | Tutorial                               | 1                              |  |  |  |
|                         | Lab                                    | 1                              |  |  |  |
| Department offering the | <ul> <li>Electronics ar</li> </ul>     | nd Communications Engineering, |  |  |  |
| program                 | Computers as                           | nd Systems Engineering,        |  |  |  |
|                         | <ul> <li>Communication</li> </ul>      | ions and Computer Engineering  |  |  |  |
|                         |  |                                |  |  |  |
| Department offering the | Electronics Engineering and Electrical |                                |  |  |  |
| course                  | Communication                          |                                |  |  |  |
| 2 Aims of the course    |  |                                |  |  |  |

### 2- Aim of the course

- 1. Learn the principles of current, voltage, power and energy
- 2. Learn the constant and controlled current/voltage sources.
- 3. Learn the principles of DC and AC circuits.
- 4. Learn the analysis of AC circuits using vectors
- 5. Demonstrate the circuit theorems, loop/mesh and nodal methods
- 6. Demonstrate the resonance circuits, magnetic circuits

## Identify, formulate, and solve complex engineering problems by applying A.1 engineering fundamentals, basic science and mathematics. Level A – General 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. 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 Level B - Speciality in electrical/electronic/digital engineering using technological and .professional tools B.4 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 B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services. 4- Course Current, Voltage, Power and energy, Constant and controlled current/voltage sources, Series and Parallel Circuit Analysis, DC circuits (Loop/mesh and Nodal methods), Circuit **Contents** Theorems, Capacitance and inductance, Alternating current, Analysis of AC circuits using Vectors, Computation of power, Resonance Circuits, Magnetic circuits. تعريف التيار والجهد والقدرة والطاقة مصادر الجهد الثابت والمتحكم فبها - دوائر التو الي و التو ازى و الدو ائر المتسلسلة - تحليل الدو ائر لمصادر الجهد الثابت ( تيار ات الخيار ات جهود العقد)- نظريات الدوائر - المكثفات والملفات الحثية - التيار المتردد -استخدام المتجهات في تحليل الدوائر الكهربية- تحليل الدوائر ذات مصادر الجهد المتر دد - حساب القدر ة- دو ائر الرنبن الدو ائر المغناطبسية **Tutorial/Practical** No of hours # Topic Lecture Current, Voltage, Power and energy, Constant and 4 4 8 controlled current/voltage ,sources

Series and Parallel Circuit

6

6

12

| Analysis, ,  |  |   |    |  |  |  |
|--|--|---|----|--|--|--|
| DC Circuit Theorems (Loop/mesh and Nodal ,methods)                       | 8  | 8   | 16 |  |  |  |
| Capacitance. inductance, and<br>Alternating current Computation<br>power | of 6   | 6 6 12  |    |  |  |  |
| Analysis of AC circuits using ,Vectors .Resonance Circuits               | 4  | 4   | 8  |  |  |  |
| Total sum  | 28   | 28  | 56 |  |  |  |
| 5- Teaching and learning methods   | <ol> <li>Discussio</li> <li>Tutorial</li> <li>Problem s</li> <li>Brain stor</li> <li>Projects</li> <li>Self-learn</li> <li>Research</li> <li>Computer</li> <li>Teamwork</li> </ol>   | <ol> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> </ol>   |    |  |  |  |
| 6- Teaching and learning methods for disable students                    | <ol> <li>Online led</li> <li>Using as r</li> </ol>   | <ol> <li>Online lectures and assignments</li> <li>Using as many audio/visual aids as possible.</li> </ol>   |    |  |  |  |
| 7- Teaching and learning methods for low capacity students               | <ol> <li>provide the second of the secon</li></ol> | <ol> <li>Assign a portion of the office hours for those students</li> <li>provide them with specific tailored tasks.</li> <li>Repeat the explanation of some of the material and tutorials.</li> <li>Assign a teaching assistance to follow up their</li> </ol> |    |  |  |  |
| 8- Teaching and learning methods for outstanding students                | 2. Give them   | <ol> <li>Assign course project tasks to those students.</li> <li>Give them advanced extra-curriculum topics.</li> <li>Encourage them to take part in a pilot research and case</li> </ol>   |    |  |  |  |
| 9- Students assessment   |  |   |    |  |  |  |
| a- Assessment 1 2 3 4 5  | Practical Examina<br>Oral Examination<br>Formative (quizz  | fid Term Examination (written) ractical Examination ral Examination ormative (quizzes- presentation -reports) inal 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                  | Class tutorial and quizzes:  | 10 %                        |  |  |  |  |  |
| assessment                       | • Mid-term examination:  | 20 %                        |  |  |  |  |  |
|                                  | Lab/practical exam:  | 10 %                        |  |  |  |  |  |
|                                  | ■ Final – term examination: 60 %   |                             |  |  |  |  |  |
|                                  | Total 100 %  |                             |  |  |  |  |  |
| 10- List of text books and re    | references:  |                             |  |  |  |  |  |
| a- Course notes                  | There are lectures notes prepare authorized by the department.   | ed in the form of a book    |  |  |  |  |  |
| b- Text books/ References        | [1] Robert L Boylston, Introductory Circuit Analysis, Pearson Education Limited Twelfth Edition, 2014 [2] F. E. VPerez, R. PAreny, Microcontrollers: Fundamentals and Applications with PIC, CRC Press, Feb., 2009. [2] J. W. Nilsson and S. A. Riedel, Electric Circuits, Prentice - Hall, 8th. Ed., 2008 |                             |  |  |  |  |  |
| c- Periodicals, Web sites<br>etc | https://www.khanacademy.org/scie   | ence/electrical-engineering |  |  |  |  |  |

| 11-Course ccontents – Course related program competencies                            |         |     |     |         |     |     |     |
|--|---------|-----|-----|---------|-----|-----|-----|
|  | Level A |     |     | Level B |     |     |     |
|  | A.1     | A.2 | A.4 | B.2     | B.3 | B.4 | B.5 |
| Current, Voltage, Power and energy, Constant and controlled current/voltage sources, | 1       |     |     |         |     |     |     |
| Series and Parallel Circuit Analysis   | 1       | 1   |     | 1       | 1   | 1   | 1   |
| DC circuits Theorems, (Loop/mesh and Nodal methods),                                 |         | 1   | 1   |         |     | 1   | 1   |
| Capacitance and inductance, Alternating current                                      | 1       | 1   | 1   |         |     |     |     |

| Analysis of AC circuits using Vectors Resonance Circuits, |  | , |  |  |
|---|--|---|--|--|
| and Computation of power,                                 |  | ٧ |  |  |

| 12-Teaching and learning methods - Course related pr | ogram | comp | etenc | es       |     |     |     |
|--|-------|------|-------|----------|-----|-----|-----|
|  | Level | Α    |       | Level    |     |     |     |
|  | A.1   | A.2  | A.4   | B.2      | B.3 | B.4 | B.5 |
| Lecture (in class)                                   | 1     |      |       |          |     |     |     |
| Discussion   | 1     | 1    | 1     | 1        | 1   | 1   | 1   |
| Tutorial   | 1     | 1    | 1     | 1        | 1   |     |     |
| Problem solving                                      |       |      | 1     | <b>V</b> | 1   |     |     |
| Brain storming                                       |       |      |       | 1        | 1   | 1   | 1   |
| Projects   |       |      |       | 1        | 1   | 1   | 1   |
| Self-learning  |       |      |       |          |     |     | 1   |
| Research and Reporting                               |       |      |       |          |     | 1   |     |
| Computer Simulation                                  |       |      |       |          |     | 1   | 1   |
| Teamwork   |       |      |       |          |     |     |     |

| 13- Assessment methods - Course related program competencies |                                    |     |     |     |         |     |     |     |
|--|------------------------------------|-----|-----|-----|---------|-----|-----|-----|
| Assessment methods   | Course related program comptencies |     |     |     |         |     |     |     |
|  | Level A                            |     |     |     | Level B |     |     |     |
|  |                                    | A.1 | A.2 | A.4 | B.2     | B.3 | B.4 | B.5 |
| 1. Mid Term Examination (written)                            |                                    | 1   | 1   | 1   | 1       | 1   |     |     |
| 2. Practical Examination                                     |                                    | 1   | 1   | 1   | 1       | 1   | 1   | 1   |
| 3. Oral Examination  |                                    | 1   | 1   | 1   | 1       |     |     |     |
| 4. Formative (quizzes- presentation -report                  | ts)                                | 1   | 1   | 1   | 1       | 1   |     |     |
| 5. Final Term Examination (written)                          |                                    | 1   | 1   | 1   | 1       | 1   | 1   | 1   |

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







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## Course Specification

## 1- Basic Information

| Course Title            | Principles of Elect                       | trical Engineering             |  |  |  |  |
|-------------------------|---|--------------------------------|--|--|--|--|
| Course Code             | ELP 113                                   |                                |  |  |  |  |
| Academic Year           | 2022-2023                                 |                                |  |  |  |  |
| Coordinator             | Assoc. Prof. Saad Av                      | vad Mohamed Abdelwahab         |  |  |  |  |
| Teaching Staff          | Assoc. Prof. Saad Awad Mohamed Abdelwahab |                                |  |  |  |  |
| Level                   | Level (1)                                 |                                |  |  |  |  |
| Semester                | First Term                                |                                |  |  |  |  |
| Number of Weekly        | Lecture                                   | 2                              |  |  |  |  |
| Contact Hours           | Tutorial                                  | 1                              |  |  |  |  |
|                         | Lab                                       | 0                              |  |  |  |  |
| Department offering the | <ul> <li>Electronics ar</li> </ul>        | nd Communications Engineering, |  |  |  |  |
| program                 | Computers as                              | nd Systems Engineering,        |  |  |  |  |
|                         | <ul> <li>Communicati</li> </ul>           | ions and Computer Engineering  |  |  |  |  |
|                         |   |                                |  |  |  |  |
| Department offering the | • Electronics l                           | Engineering and Electrical     |  |  |  |  |
| course                  | Communicat                                | tion.                          |  |  |  |  |
|                         | Computers as                              | nd Systems Engineering.        |  |  |  |  |
|                         |   |                                |  |  |  |  |
| 2- Aim of the course    |   |                                |  |  |  |  |

- 1. Learn the principles of electric circuit analysis: DC circuits, AC circuits, circuits under transient conditions.
- 2. Learn the electric power and machines: power systems, transformers, synchronous and induction generators.
- 3. To emphasize on the principles of three phase and single phase motors, speed control of motors, cables, transmission lines, switching circuits, electrical installations.
- 4. To enhance students' ability for of measurement and protection: protection circuits and devices, relays and timers, measuring devices and recorders.

| <ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.</li> <li>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</li> <li>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.</li> <li>A.10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.</li> </ul>  |
|---|
| <ul> <li>B.1 Select, model and analyze electrical power systems applicable to the specific discipline by applying the concepts of: generation, transmission and distribution of electrical power systems.</li> <li>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.</li> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 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.</li> </ul>   |
| B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.  |
| Electric Circuit Analysis: DC circuits, AC circuits, Circuits under transient conditions. Electric Power and Machines: power systems, Transformers, Synchronous and induction generators, Three - phase and single - phase motors, speed control of motors, cables, transmission lines, switching circuits, electrical installations. Measurement and Protection: Protection circuits and devices, relays and timers, measuring devices and recorders.  Protection circuits and devices, relays and timers, measuring devices and recorders.  Lapara in |
|   |

| # Topic  | Lecture  | Tutorial/Practical  | No of hours                |  |  |  |  |  |
|--|--|---|----------------------------|--|--|--|--|--|
| Explain concepts of electric circuit analysis: DC circuits, AC circuits, circuits under transient conditions.  | 6  | 3   | 9                          |  |  |  |  |  |
| Explain concepts of three -<br>phase and single - phase<br>motors, speed control of<br>motors  | 6  | 3   | 9                          |  |  |  |  |  |
| Demonstrate Principles of design<br>of electric power and<br>machines: power systems,<br>transformers, synchronous and<br>induction generators.                                  | 8  | 4   | 12                         |  |  |  |  |  |
| Demonstrate methodologies of solving, three - phase and single - phase motors, speed control of motors, cables, transmission lines, switching circuits, electrical installations | 8  | 4   | 12                         |  |  |  |  |  |
| Total sum  | 28   | 14  | 42                         |  |  |  |  |  |
| 5- Teaching and learning methods   | <ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> </ol>                                     |   |                            |  |  |  |  |  |
| 6- Teaching and learning methods for disable students 7- Teaching and learning   | <ol> <li>Teamwork</li> <li>Additional Tutorials</li> <li>Online lectures and assignments</li> <li>Using as many audio/visual aids as possible.</li> <li>Providing extra opportunities for practice</li> <li>Assign a portion of the office hours for those students</li> </ol> |   |                            |  |  |  |  |  |
| methods for low capacity students  | and 2. provide ther 3. Repeat the e tutorials.   | m with specific tailored explanation of some of ching assistance to follo | tasks.<br>the material and |  |  |  |  |  |

|                                  | <ul><li>5. Guidance for distance learning</li><li>6. Making small projects to facilitate the science material</li></ul> |
|----------------------------------|---|
| 8- Teaching and learning         | Assign course project tasks to those students.  |
| methods for outstanding          | Give them advanced extra-curriculum topics.   |
| students                         | 3. Encourage them to take part in a pilot research and case   |
| Statement                        | studies.  |
| 9- Students assessment           |   |
| a- Assessment                    | 1. Mid Term Examination (written/ online)   |
| methods                          | 2. Practical Examination  |
|                                  | 3. Oral Examination   |
|                                  | 4. Formative (quizzes- presentation -reports)   |
| b- Assessment schedule           | 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                  | - Class tutorial and quizzes : 20 %   |
| assessment                       | - Mid-term examination: 10 %  |
|                                  | - Final – term examination: 70 %  |
|                                  | Total 100 %   |
| 10- List of text books and re    | ferences:   |
| a- Course notes                  | There are lectures notes prepared in the form of a book   |
| b- Text books/ References        | Robert L Boylestad, Introductory Circuit Analysis, Pearson Education<br>Limited Twelfth Edition, 2014                   |
| c- Periodicals, Web sites<br>etc | https://www.khanacademy.org/science/electrical-engineering  |

| 11-Course contents – Course related program competencies  |      |                 |     |      |     |     |     |     |     |
|---|------|-----------------|-----|------|-----|-----|-----|-----|-----|
|   | Leve | Level A Level B |     |      |     |     |     |     |     |
|   | A.1  | A.2             | A.3 | A.10 | B.1 | B.2 | B.3 | B.4 | B.5 |
| Explain concepts of electric circuit analysis: DC circuits, AC circuits, circuits under transient conditions. | 1    | 1               | 1   |      |     | 1   | 1   |     |     |

| Explain concepts of three - phase and single - phase motors, speed control of motors   | 1 | 7        | 1 | 1        |   | 7 | 7 | ~ | 1 |
|--|---|----------|---|----------|---|---|---|---|---|
| Demonstrate Principles of design of electric power and machines: power systems, transformers, synchronous and induction generators.  |   | 1        | 1 | <b>V</b> |   |   |   | √ | 1 |
| Demonstrate methodologies of solving, three - phase and single - phase motors, speed control of motors, cables, transmission lines, switching circuits, electrical installations | 1 | <b>√</b> | 1 | √        | √ | 7 | √ | 7 | 1 |

| 12-Teaching and learning methods - Course related program competencies |                 |     |     |      |     |     |     |     |          |
|--|-----------------|-----|-----|------|-----|-----|-----|-----|----------|
|  | Level A Level B |     |     |      | В   |     |     |     |          |
|  | A.1             | A.2 | A.3 | A.10 | B.1 | B.2 | B.3 | B.4 | B.5      |
| Lecture (online/in class)  | 1               | 1   | 1   |      | 1   | 1   | 1   |     |          |
| Discussion   | 1               | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 1        |
| Tutorial   |                 | 1   | 1   |      | 1   |     |     | 1   | <b>V</b> |
| Problem solving  | 1               | 1   | 1   |      | 1   | 1   | 1   | 1   | 1        |
| Brain storming   | 1               | 1   | 1   |      | 1   | 1   | 1   | 1   | 1        |
| Projects   |                 |     |     |      | 1   | 1   | 1   | 1   | <b>V</b> |
| Self-learning  | 1               | 1   | 1   | 1    | 1   | 1   | 1   | 1   | <b>V</b> |
| Research and Reporting   | 1               | 1   | 1   | 1    | 1   | 1   | 1   | 1   | <b>√</b> |
| Computer Simulation  | 1               | 1   | 1   |      | 1   | 1   | 1   | 1   | 1        |
| Teamwork   | 1               | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 1        |

| 13- Assessment methods - Course related program competencies |                                    |         |  |  |  |  |
|--|------------------------------------|---------|--|--|--|--|
| Assessment methods   | Course related program comptencies |         |  |  |  |  |
|  | Level A                            | Level B |  |  |  |  |

|  | A.1 | A.2 | A.3 | A.10 | B.1 | B.2 | B.3 | B.4 | B.5 |
|--|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Mid Term Examination (written/ online)     | 1   | 1   | 1   |      |     | 1   | 1   |     |     |
| Practical Examination                      | 1   | 1   | 1   | 1    |     | 1   | 1   | 1   | 1   |
| Oral Examination                           |     | 1   | 1   | 1    | 1   | 1   | 1   | 1   | 1   |
| Formative (quizzes- presentation -reports) |     |     | 1   |      | 1   | 1   | 1   |     |     |
| Final Term Examination (written            | 1   | 1   | 1   |      | 1   | 1   | 1   | 1   | 1   |

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

Course coordinator:

Dr Saad Awad M. Abdelwahab



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            | <b>Electrical Measur</b>                   | ements & Testing               |  |  |  |
|-------------------------|--|--------------------------------|--|--|--|
| Course Code             | ELP 114                                    |                                |  |  |  |
| Academic Year           | 2022-2023                                  |                                |  |  |  |
| Coordinator             | Assoc. Prof. Walid Salah Eldeen Abdellatif |                                |  |  |  |
| Teaching Staff          | Assoc. Prof. Walid S                       | alah Eldeen Abdellatif         |  |  |  |
| Level                   | Level (1)                                  |                                |  |  |  |
| Semester                | First Term                                 |                                |  |  |  |
| Number of Weekly        | Lecture                                    | 2                              |  |  |  |
| Contact Hours           | Tutorial                                   | 1                              |  |  |  |
|                         | Lab  | 2                              |  |  |  |
| Department offering the | <ul> <li>Electronics ar</li> </ul>         | nd Communications Engineering, |  |  |  |
| program                 | Computers as                               | nd Systems Engineering,        |  |  |  |
|                         | Communicati                                | ions and Computer Engineering  |  |  |  |
|                         |  |                                |  |  |  |
| Department offering the | Electronics Engineering and Electrical     |                                |  |  |  |
| course                  | Communication                              |                                |  |  |  |
| 0.01.001                |  |                                |  |  |  |

### 2- Aim of the course

- 1. Develop a basic knowledge of electrical measurements and measuring instruments.
- 2. Acquire the main principles of moving coil and moving iron instruments and their applications in measuring electrical quantities.
- 3. Provide knowledge about basis of electromechanical instruments and the difference between dc and ac instruments.
- 4. Discuss the principles of different types of transducers and how to use them with electrical measuring instruments to measure non electrical quantities.
- 5. Help the students to measure voltage, current and resistance value.
- 6. Enhance dealing with oscilloscope to measure voltages of electrical signals.
- 7. Encourage defining different types of errors caused by inserting electrical measurement devices into electrical circuits.

| Level A – General   | A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.   |  |                    |             |  |  |  |
|---|---|--|--------------------|-------------|--|--|--|
| Level B - Speciality  | <ul> <li>B.4 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.</li> <li>B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.</li> </ul>  |  |                    |             |  |  |  |
| 4- Course<br>Contents   | Introduction about measurements, Errors in measurements, Statistical analysis of errors in measurements, Measurements of all electrical quantities (current, voltage, energy, and power) for dc and ac current, Measurement of resistances and capacitors, The multi-meter, The oscilloscope, Signal generators, Measurements of time period and frequency, Spectrum analyzers, Logic analyzers, Logic probe, Energy transducers (pressure, force, displacement, level, light, temperature, speed), A/D and D/A and applications, Data acquisition cards. |  |                    |             |  |  |  |
| # Topic   |   | Lecture  | Tutorial/Practical | No of hours |  |  |  |
| precision, R<br>Sensitivity,<br>Statistical A<br>the measur   | tions, accuracy, esolution, types of errors, nalysis to calculate ement errors and experiments  | 4  | 6                  | 10          |  |  |  |
| Electromechanical indicating instrument, Permanent Magnet (Moving Coil (PMMC Instrument, D.C Ammeter, DC voltmeter, Loading Errors, PMMC with rectifier, and laboratory experiments |   | ment, Permanent Magnet ng Coil (PMMC ment, D.C Ammeter, DC eter, Loading Errors, C with rectifier, and |                    | 15          |  |  |  |
| direct Curre<br>Ohmmeter,<br>(Wheatstor<br>Double Brid  | measurement & ent (D.C) bridges, (D.C) bridges ne, Kelvin, and Kelvin lges), Meggar, and experiments  | 6  | 9                  | 10          |  |  |  |

| Alternating Current (AC) Bridges (Capacitance Comparison Bridge, Inductive Comparison Bridge, Maxwell Bridge, Hay's Bridge, Schering Bridge, Frequency Measuring by Wien Bridge, and laboratory .experiments  | 6   | 9  | 10                    |
|---|---|--|-----------------------|
| Signal generators, Measurements of time period and frequency, Spectrum analyzers, Logic analyzers, Logic probe, Energy transducers (pressure, force, displacement, level, light, temperature, speed), A/D and D/A and applications, Data acquisition .cards | 6   | 9  | 15                    |
| Total sum   | 28  | 42   | 70                    |
| 5- Teaching and learning methods  | <ol> <li>Lecture (onl</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem sol</li> <li>Brain storm</li> <li>Projects</li> <li>Self-learnin</li> <li>Research an</li> <li>Computer S</li> <li>Teamwork</li> </ol> | ving<br>ing<br>g<br>d Reporting                    |                       |
| 6- Teaching and learning  | 1. Additional T   | utorials   |                       |
| methods for disable students  |   | res and assignments                                |                       |
|   | _   | ny audio/visual aids as patra opportunities for pr |                       |
| 7- Teaching and learning  |   | tion of the office hours                           |                       |
| methods for low capacity  | and   |  |                       |
| students  |   | m with specific tailored                           |                       |
|   |   | explanation of some of                             | the material and      |
|   | tutorials.  4. Assign a tea performanc  | ching assistance to follo<br>e                     | w up their            |
| 8- Teaching and learning  | _   | se project tasks to those                          |                       |
| methods for outstanding   |   | dvanced extra-curriculu                            | ·                     |
| students  | _   | hem to take part in a pi                           | lot research and case |
|   | studies.  |  |                       |

| 9- Students assessment        |   |   |  |  |  |
|-------------------------------|---|---|--|--|--|
| a- Assessment<br>methods      | <ol> <li>Mid Term Examination (written/ online)</li> <li>Practical Examination</li> <li>Oral Examination</li> <li>Formative (quizzes- presentation -reports)</li> <li>Final Term Examination (written)</li> </ol> |   |  |  |  |
| b- Assessment schedule        | - Exercise sheet/ Lab assignmen   | ·   |  |  |  |
|                               | - 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               | - Class tutorial and quizzes :  | 20 %  |  |  |  |
| assessment                    | - Mid-term examination:   | 20 %  |  |  |  |
|                               | - Final – term examination:   | 60 %  |  |  |  |
|                               |   | Total 100 %                                   |  |  |  |
| 10- List of text books and re | eferences:  |   |  |  |  |
| a- Course notes               |   | prepared in the form of a book                |  |  |  |
| b- Text books/ References     | authorized by the departn   | nent.<br>umentation and measurements, Oxiford |  |  |  |
| b- reat booksy references     | University Press, 3rd Edition   |   |  |  |  |
|                               | •   | r Chin, Electronic Instruments and            |  |  |  |
|                               | · ·   | Hall International, 2nd. Ed., 1991.           |  |  |  |
|                               |   | ectronic Instrumentation, Technical           |  |  |  |
|                               | Publications, 2009.   | ic Measurement and Instrumentation,           |  |  |  |
|                               | Cambridge Univ. Press,1999  |   |  |  |  |
|                               | ,   | Instruments and Instrumentation               |  |  |  |
|                               | technology, PHI Learning Pv   |   |  |  |  |
| c- Periodicals, Web sites     |   |   |  |  |  |
| etc                           |   |   |  |  |  |

| 11-Course contents – Course related program competencies  |             |     |     |      |      |     |     |
|---|-------------|-----|-----|------|------|-----|-----|
|   | Level A Lev |     |     | Leve | el B |     |     |
|   | A.1         | A.3 | A.4 | B.2  | B.3  | B.4 | B.5 |
| Basic Definitions, Statistical Analysis to calculate the measurement errors and laboratory experiments. | 1           |     |     |      |      | 1   |     |

| Electromechanical indicating instrument, Permanent Magnet Moving Coil (PMMC)Instrument, D.C Ammeter, DC voltmeter, Loading Errors, PMMC with rectifier, and laboratory experiments.   |   |  |  |          |   |
|---|---|--|--|----------|---|
| Resistance measurement & direct Current (D.C) bridges, Ohmmeter, (D.C) bridges (Wheatstone, Kelvin, and Kelvin Double Bridges), Meggar, and laboratory experiments.   | 1 |  |  |          | 7 |
| Alternating Current (AC) Bridges (Capacitance Comparison Bridge, Inductive Comparison Bridge, Maxwell Bridge, Hay's Bridge, Schering Bridge, Frequency Measuring by Wien Bridge, and laboratory experiments.  |   |  |  | 1        | 1 |
| Cathode Ray Oscilloscope, Dual-Beam Oscilloscope, Analog Storage Oscilloscope, Digital Storage Oscilloscope, Oscilloscope Settings, and laboratory experiments  | 1 |  |  |          | 1 |
| Signal generators, Measurements of time period and frequency, Spectrum analyzers, Logic analyzers, Logic probe, Energy transducers (pressure, force, displacement, level, light, temperature, speed), A/D and D/A and applications, Data acquisition cards. |   |  |  | <b>√</b> |   |

|                           | Leve | Level A |     |         |     |     |     |
|---------------------------|------|---------|-----|---------|-----|-----|-----|
|                           |      |         |     | Level B |     |     |     |
|                           | A.1  | A.3     | A.4 | B.2     | B.3 | B.4 | B.5 |
| Lecture (online/in class) | 1    |         |     |         |     |     |     |
| Discussion                | √    |         |     |         |     | 1   | 1   |
| Tutorial                  | √    |         |     |         |     |     |     |
| Problem solving           |      |         |     |         |     | 1   |     |
| Brain storming            |      |         |     |         |     | 1   | 1   |
| Projects                  |      |         |     |         |     | 1   | 1   |
| Self-learning             |      |         |     |         |     |     | 1   |
| Research and Reporting    |      |         |     |         |     | 1   |     |

| Computer Simulation |   |  |  | 1 | 1 |
|---------------------|---|--|--|---|---|
| Teamwork            | 1 |  |  |   |   |

| Assessment methods                            | Course relate | ed prog | gram co | ompter | ncies |     |     |     |
|---|---------------|---------|---------|--------|-------|-----|-----|-----|
|   |               | Level   | A       |        | Leve  | ΙB  |     |     |
|   |               | A.1     | A.3     | A.4    | B.2   | B.3 | B.4 | B.5 |
| 1. Mid Term Examination (written/ online)     |               | 1       |         |        |       |     |     |     |
| 2. Practical Examination                      |               |         |         |        |       |     | 1   | 1   |
| 3. Oral Examination                           |               |         |         |        |       |     | 1   |     |
| 4. Formative (quizzes- presentation -reports) |               | 1       |         |        |       |     | 1   | 1   |
| 5. Final Term Examination (written            |               | 1       |         |        |       |     | 1   | 1   |

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

Sues



Dr. Walid Salah Eldeen Abdellatif

Ministerial Resolution 5053 - 12/10/2016

K 10, Bilbies - 10th of Ramadan



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

## Course Specification

## 1- Basic Information

| Course Title            | Logic Design                            |                                 |  |  |  |
|-------------------------|---|---------------------------------|--|--|--|
| Course Code             | CSE 115                                 |                                 |  |  |  |
| Academic Year           | 2022-2023                               |                                 |  |  |  |
| Coordinator             | Dr: Dina Awny Amer                      |                                 |  |  |  |
| Teaching Staff          | Dr: Dina Awny Ame                       | er                              |  |  |  |
| Level                   | Level (1)                               |                                 |  |  |  |
| Semester                | First Term                              |                                 |  |  |  |
| Number of Weekly        | Lecture                                 | 2                               |  |  |  |
| <b>Contact Hours</b>    | Tutorial 0                              |                                 |  |  |  |
|                         | Lab                                     | 2                               |  |  |  |
| Department offering the | <ul> <li>Electronics a</li> </ul>       | and Communications Engineering, |  |  |  |
| program                 | Computers a                             | and Systems Engineering,        |  |  |  |
|                         | Communications and Computer Engineering |                                 |  |  |  |
|                         |   |                                 |  |  |  |
| Department offering the | Computers and Systems Engineering       |                                 |  |  |  |
| course                  |   |                                 |  |  |  |
| 2. Aim of the course    |   |                                 |  |  |  |

- 1. Learn and differentiate between combinational and sequential logic circuits.
- 2. Learn different types of Flip Flops as example for sequential logic circuits.
- 3. Learn the principles of counters and the design of synchronous and asynchronous Counters.
- 4. Learn the principles of Registers and the design of SISO, SIPO, PISO, and PIPO shift registers.
- 5. Demonstrate the principles of Programmable Logic Devices (PLDs).

## A.1 Identify, formulate, and solve complex engineering problems by applying Level A – General 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. 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 Level B - Speciality electrical/electronic/digital engineering technological using and professional tools. B.4 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. B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services. 4- Course Basics of sequential circuits: Basic latches and Flip-Flops, various types of Contents Registers and counters, State table and state transition diagram, sequential circuits design methodology, design Counters, Registers, Shift registers, Ring Counter, and Irregular counter. Synchronous Sequential Circuits and Programmable Logic Devices. **Practical Laboratory:** Satisfy the transition and truth table for all types of flip flops. Experiments different types of counters. Experiments on different types of registers and shift registers. Building a general-purpose shift register that can do a shift right, shift left, rotate right, and rotate left operations using control lines.

| # Topic  | Lecture | Tutorial/Practical | No of hours |
|--|---------|--------------------|-------------|
| Basics of sequential circuits: Basic latches and Flip-Flops,                       | 4       | 4                  | 8           |
| various types of Registers and counters, State table and state transition diagram, | 6       | 6                  | 12          |
| sequential circuits design<br>methodology, design Counters,                        | 8       | 8                  | 16          |

| Design of different Regist<br>Shift registers, Ring Cour<br>and Irregular counter |  | 6   | 6  | 12  |  |  |  |
|---|--|---|--|---|--|--|--|
| Synchronous Sequential<br>Circuits and Programmab<br>Logic Devices.               | le   | 4 4 8   |  |   |  |  |  |
| Total sum   |  | 28  | 28   | 56  |  |  |  |
| 5- Teaching and learning m  | ethods   | <ol> <li>Discussion</li> <li>Tutorial</li> <li>Problem so</li> <li>Brain storn</li> <li>Projects</li> <li>Self-learnin</li> <li>Research a</li> </ol>   | orial blem solving n storming ects -learning earch and Reporting eputer Simulation |   |  |  |  |
| 6- Teaching and learning m  | ethods   | 1. Additional   | Tutorials  |   |  |  |  |
| for disable students  |  | <ol> <li>Online lectures and assignments</li> <li>Using as many audio/visual aids as possible.</li> <li>Providing extra opportunities for practice</li> </ol>   |  |   |  |  |  |
| 7- Teaching and learning me for low capacity students                             | ethods   | <ol> <li>Assign a portion of the office hours for those students and</li> <li>provide them with specific tailored tasks.</li> <li>Repeat the explanation of some of the material and tutorials.</li> <li>Assign a teaching assistance to follow up their performance</li> </ol> |  |   |  |  |  |
| 8- Teaching and learning more for outstanding students                            | ethods   | 2. Give them  | advanced extra-  | to those students.<br>curriculum topics.<br>rt in a pilot research and case |  |  |  |
| 9- Students assessment  |  |   |  |   |  |  |  |
| a- Assessment methods   | <ol> <li>Pra</li> <li>Or</li> <li>Fo</li> <li>Fir</li> </ol> | Aid Term Examination (written/ online) ractical Examination ral Examination ormative (quizzes- presentation -reports) inal Term Examination (written)   |  |   |  |  |  |
| b- Assessment schedule  | - Exerci   | se sheet/ Lab assi  | gnment :   | Weekly  |  |  |  |
|   | - Quizz-   | zz-1: Week no. 5  |  |   |  |  |  |
|   | - Mid-T  | erm exam:   | ,  | Week no . 8   |  |  |  |
|   | - Quizz-   | -2: Week no. 12   |  |   |  |  |  |

|  | - Final – term examination:  |           | Week no.     | 16                     |  |  |
|--|--|-----------|--------------|------------------------|--|--|
| c- Weighting of                        | - Class tutorial and quizzes :   |           | 10 %         |                        |  |  |
| assessment                             | - 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 pauthorized by the departs  | _         | n the form   | of a book              |  |  |
| b- Text books/ References              | [1] Digital logic design, Brian<br>Cataloguing, 4th. Ed., 20                                 |           | rth, Clive W | Voods. British Library |  |  |
|  | [2] M. Morris Mano, "Digital Design With an Introduction to the Verilog HDL". FIFTH EDITION  |           |              |                        |  |  |
|  | [3] M. Mano et al., Logic and Computer Design Fundamentals, New Jersey: Prentice Hall, 2004. |           |              |                        |  |  |
| c- Periodicals, Web sites<br>etc       | https://www.sciencedirect  | .com/topi | cs/enginee   | ering/logic-design     |  |  |

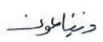
| 11-Course contents – Course related program competencies                            |        |     |         |     |     |     |
|---|--------|-----|---------|-----|-----|-----|
| L   | evel A |     | Level B |     |     |     |
|   | A.1    | A.2 | B.2     | B.3 | B.4 | B.5 |
| Basics of sequential circuits: Basic latches and Flip-Flops,                        | 1      |     |         |     | 1   |     |
| various types of Registers and counters, State table and state transition diagram,  | 1      | 1   | 1       | 1   | 1   | 1   |
| sequential circuits design methodology, design Counters,                            |        | 1   | 1       | 1   |     |     |
| Design of different Registers, Shift registers, Ring Counter, and Irregular counter | 1      | 1   | 1       | 1   |     |     |
| Synchronous Sequential Circuits and Programmable Logic Devices.                     | 1      | 1   |         |     |     | 1   |

## 12-Teaching and learning methods - Course related program competencies

|                           | Level A |     | Level B |     |     |     |
|---------------------------|---------|-----|---------|-----|-----|-----|
|                           | A.1     | A.2 | B.2     | B.3 | B.4 | B.5 |
| Lecture (online/in class) | 1       |     |         |     |     |     |
| Discussion                | 1       | 1   | 1       | 1   | 1   | 1   |
| Tutorial                  | 1       | 1   | 1       | 1   |     |     |
| Problem solving           |         |     | 1       | 1   |     |     |
| Brain storming            |         |     | 1       | 1   | 1   | 1   |
| Projects                  |         |     | 1       | 1   | 1   | 1   |
| Self-learning             |         |     |         |     |     | 1   |
| Research and Reporting    |         |     |         |     | 1   |     |
| Computer Simulation       |         |     |         |     | 1   | 1   |
| Teamwork                  |         |     |         |     |     |     |

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

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





| Dr.Dina amer |
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| DI.Dina amer |
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Ministerial Resolution 5053 - 12/10/2016

K 10, Bilbies – 10<sup>th</sup> 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            | <b>Technical Report</b>           |                                |
|-------------------------|-----------------------------------|--------------------------------|
| Course Code             | HUM 116                           |                                |
| Academic Year           | 2022-2023                         |                                |
| Coordinator             | Dr/ Somia Ahmed                   |                                |
| Teaching Staff          | Dr/ Somia Ahmed                   |                                |
| Level                   | Level (1)                         |                                |
| Semester                | First Term                        |                                |
| Number of Weekly        | Lecture                           | 1                              |
| <b>Contact Hours</b>    | Tutorial                          | 2                              |
|                         | Lab                               | 0                              |
| Department offering the | <ul> <li>Electronics a</li> </ul> | nd Communications Engineering, |
| program                 | Computers a                       | nd Systems Engineering,        |
|                         | Communicat                        | ions and Computer Engineering  |
|                         |                                   |                                |
| Department offering the | Basic science                     |                                |
| course                  |                                   |                                |
| 2 Aim of the course     |                                   |                                |

### 2- Aim of the course

This course is designed for engineering students to:

- Enhance their abilities in technical writing -as a communication skill.
- Introduce different types and uses of technical documents.
- Give students general guidelines for good engineering writing.
- Know the importance of using appropriate grammar and punctuation, and avoid the most common errors in technical writing.
- Enhance the students' presentational skills.
- 3- Course related program competencies

## 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

evel A – General

## 4- Course Contents

specification, Analysis, Design, and Implementation). Administrative (Directed to different operational and management levels). Levels of confidentiality for the different reports. Report Composition: Logical presentation of the report and coordination between its components. Importance of using correct grammar and punctuation. Enhancing communication effectiveness by the use of different media. Report Implementation: Use of the appropriate software packages including any graphics or multimedia packages

العناصر الأساسية للتقرير الفني: المستخلص – الملخص – المحتويات – الأهداف – تفاصيل التقرير شاملة الأشكال, الصور, الفيديو ... الخ – الأستنتاجات – التوصيات – المراجع باستخدام الأشكال القياسية والمصادر الألكترونية المختلفة .تصنيف التقارير: فنية (المواصفات المطلوبة التحليل, التصميم, التنفيذ)

ادارية (موجهة لمستويات التشغيل والادارة المختلفة). مستوي السرية للتقارير المختلفة. صياغة التقرير: التقديم المنطقي للتقرير والتنسيق بين اجزائه. أهمية استخدام الوسائط المختلفة.

تنفيذ التقرير: استخدام البر مجيات المناسبة شاملة الرسومات والوسائط المتعددة

| # Topic                                     | Lecture | Tutorial/Practical | No of hours |
|---|---------|--------------------|-------------|
| Introduction  O Goals  Types of report      | 2       | 4                  | 6           |
| <ul><li>Types of report</li><li>.</li></ul> | 2       | 4                  | 6           |

| Report structure  |   |   |                                       |
|---|---|---|---------------------------------------|
| <ul> <li>Findings</li> <li>Observations</li> <li>Discussions</li> </ul>   | 2   | 4   | 6                                     |
| <ul> <li>Conclusion</li> <li>Recommendations</li> <li>Executive summary</li> <li>Other sections (title page, table of contents, lists, appendices, references)</li> </ul> | 2   | 4   | 6                                     |
| Importance of using correct grammar and punctuation   | 2   | 4   | 6                                     |
| Enhancing communication effectiveness by the use of different media   | 2   | 4   | 6                                     |
| Report Implementation: Use of the appropriate software packages including any graphics or multimedia packages   | 2   | 4   | 6                                     |
| Total sum   | 14  | 28  | 42                                    |
| 5- Teaching and learning methods  | <ol> <li>Lecture (onl)</li> <li>Discussion</li> <li>Tutorial</li> <li>Brain storm</li> <li>Projects</li> <li>Self-learnin</li> <li>Research an</li> <li>Computer S</li> <li>Teamwork</li> </ol> | g<br>ad Reporting   |                                       |
| 6- Teaching and learning  | 1. Additional T   |   |                                       |
| methods for disable students  | <ol> <li>Using as ma</li> <li>Providing ex</li> </ol>   | res and assignments<br>iny audio/visual aids as<br>ktra opportunities for p | ractice                               |
| 7- Teaching and learning  |   |   | for those students and                |
| methods for low capacity  | •   | m with specific tailored  | tasks.<br>the material and tutorials. |
| students  | '   | •   | ow up their performance               |
| 8- Teaching and learning  |   | se project tasks to thos  |                                       |
| methods for outstanding   |   | ndvanced extra-curricul   | -                                     |
| students  | <ol><li>Encourage t studies.</li></ol>  | hem to take part in a p   | ilot research and case                |

| 9- Students assessment        |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|
| 5- Students assessment        |  |  |  |  |  |
| a- Assessment                 | 1. Mid Term Examination (written/ online)  |  |  |  |  |
| methods                       | 2. Practical Examination   |  |  |  |  |
|                               | 3. Oral Examination  |  |  |  |  |
|                               | <ul><li>4. Formative (quizzes- presentation -reports)</li><li>5. Final Term Examination (written)</li></ul>                        |  |  |  |  |
| b- Assessment schedule        | - Exercise sheet/ Lab assignment : Weekly  |  |  |  |  |
| b- Assessment scredule        | - Lacitise 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               | - Class tutorial and quizzes : 15 %  |  |  |  |  |
| assessment                    | - Mid-term examination: 15 %   |  |  |  |  |
|                               | - Final – term examination: 70 %   |  |  |  |  |
|                               | Total 100 %  |  |  |  |  |
| 10- List of text books and re | eferences:   |  |  |  |  |
| a- Course notes               | There are lectures notes prepared in the form of a book authorized   |  |  |  |  |
|                               | by the department.   |  |  |  |  |
| b- Text books/ References     | Gary Johns and Alan M. Saks, Organizational Behavior, Addison  |  |  |  |  |
|                               | Wesley Longman, 2009.  |  |  |  |  |
|                               | • Scaarmarharn Ir P. I. Hunt G. I. and Ocharn M. P.  |  |  |  |  |
|                               | • Scgermerhorn, Jr., R. J., Hunt, G. J., and Osborn, N. R., Organizational Behavior, John Wiley & Sons, Inc., New York, 10th. Ed., |  |  |  |  |
|                               | 2008.  |  |  |  |  |
| c- Periodicals, Web sites     |  |  |  |  |  |
| etc                           |  |  |  |  |  |
|                               |  |  |  |  |  |

| 11-Course contents – Course related program competencies |          |     |     |      |
|--|----------|-----|-----|------|
|  | Level A  |     |     |      |
|  | A.7      | A.8 | A.9 | A.10 |
| Introduction  O Goals  Types of report                   | <b>V</b> |     |     |      |

| <ul><li>Types of report</li><li>.</li></ul>   | 1        | 1 |   |          |
|---|----------|---|---|----------|
| Report structure      Findings     Observations     Discussions   | <b>V</b> |   | √ | <b>√</b> |
| <ul> <li>Conclusion</li> <li>Recommendations</li> <li>Executive summary</li> <li>Other sections (title page, table of contents, lists, appendices, references)</li> </ul> |          | 1 | 1 | 1        |
| Importance of using correct grammar and punctuation   |          | 1 | 1 |          |
| Enhancing communication effectiveness by the use of different media   |          |   | √ | √        |
| Report Implementation: Use of the appropriate software packages including any graphics or multimedia packages   | <b>V</b> |   | 1 | 1        |

| 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)  | 1       |     |     |     |      |  |  |
| Discussion   | 1       | 1   |     |     |      |  |  |
| Tutorial   | 1       | 1   | 1   | √ √ |      |  |  |
| Problem solving  |         | 1   |     | √ √ |      |  |  |
| Brain storming   |         |     | 1   |     |      |  |  |
| Projects   |         |     | 1   | 1   |      |  |  |
| Self-learning  |         |     |     |     | 1    |  |  |
| Research and Reporting   |         |     | 1   |     | 1    |  |  |
| Computer Simulation  |         |     |     |     |      |  |  |
| Teamwork   |         |     |     |     | 1    |  |  |

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

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

Dr. Somaia Desouky



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            | Communication & Presentation Skills                             |  |  |
|-------------------------|---|--|--|
| Course Code             | 117   |  |  |
| Academic Year           | 2022-2023   |  |  |
| Coordinator             | Dr/ aya salem   |  |  |
| Teaching Staff          | Dr/ aya salem   |  |  |
| Level                   | Level (1)   |  |  |
| Semester                | First Term  |  |  |
| Number of Weekly        | Lecture 1   |  |  |
| Contact Hours           | Tutorial 2  |  |  |
|                         | Lab 0   |  |  |
| Department offering the | <ul> <li>Electronics and Communications Engineering,</li> </ul> |  |  |
| program                 | <ul> <li>Computers and Systems Engineering,</li> </ul>          |  |  |
|                         | Communications and Computer Engineering                         |  |  |
|                         |   |  |  |
| Department offering the | Electronics Engineering and Electrical                          |  |  |
| course                  | Communication   |  |  |
|                         | Computers and Systems Engineering                               |  |  |
| 2 Almost the same       |   |  |  |

### 2- Aim of the course

- 1. To provide the students with Plan a presentation keeping the audience in mind
- 2. To enhance students' ability for developing clear objectives for their presentation
- 3. To acquire students the skills for Use 'attention grabbers' to enhance their opening
- 4. To emphasize on comprehensive treatment of embedded hardware and real time
- 5. To analyze Develop effective visual aids
- 6. .To Use several different methods and tools for presenting
- 7. To Use positive presentation style behaviours
- 8. To Practice their skills of presenting

# A.7 Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams. Level A – General 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. Speciality Level B-4- Course Course Aims to providing the student with the latest knowledge about the **Contents** concepts, characteristics, and types of managerial and interpersonal communications, as well as the concepts and requirement of good listening and presentation, and Developing the student's abilities and skills of effective communication, and good listening, as well as how to use the interpersonal and managerial communication methods and the presentation techniques in performance and dealing with others inside and outside the organization. Course Contents: Concept and nature of communication - Communication model -**Formal** and informal communications - Interpersonal and managerial communications -Body language - Written communications (Reports and memos) - Ten Commandments of effective communication - Good listing - Elements of effective presentation model - Preparation of good presentation - Carrying out presentations - Discussion and dealing with objections - Evaluating presentation performance. مفاهيم وخصائص وأنواع إدارية وشخصية تهدف الدورة إلى تزويد الطالب بأحدث المعلومات حول الاتصالات ، فضلا عن مفاهيم ومتطلبات حسن الاستماع والعرض ، وتنمية قدرات ومهارات الطالب طرق الاتصال التواصل ، والاستماع الجيد ، وكذلك كيفية استخدام العلاقات الشخصية و بشكل فعال المحتويات: مفهوم الأداء والتعامل مع الأخرين داخل وخارج المنظمة. دورة الإداري وتقنيات العرض في والاتصالات غير الرسمية - الاتصالات الشخصية والإدارية الاتصال وطبيعته - نموذج الاتصال – رسمي وصايا الاتصال الفعال - القائمة الجيدة - لغة الجسد - الاتصالات الكتابية (التقارير والمذكرات) - عشرة -المناقشة والتعامل - نموذج العرض - إعداد عرض تقديمي جيد - إجراء العروض التقديمية عناصر الفعالية مع الاعتراضات. - تقويم أداء العرض Tutorial/Practical # Topic Lecture No of hours

| - Concept and nature of communication                      | 2  | 4   | 6                           |  |  |  |  |
|--|--|---|-----------------------------|--|--|--|--|
| -Communication model                                       | 3  | 6   | 9                           |  |  |  |  |
| -Formal and informal communications                        | 4  | 8   | 12                          |  |  |  |  |
|  | 3  | 3 6 9   |                             |  |  |  |  |
| - Interpersonal and manag<br>communications                | rerial 2   | 2 4 6   |                             |  |  |  |  |
| Total sum  | 14   | 28  | 42                          |  |  |  |  |
| 5- Teaching and learning methods                           | <ol> <li>Discussion</li> <li>Tutorial</li> <li>Brain store</li> <li>Projects</li> <li>Self-learni</li> <li>Research</li> </ol> | <ul> <li>2. Discussion</li> <li>3. Tutorial</li> <li>4. Brain storming</li> <li>5. Projects</li> <li>6. Self-learning</li> <li>7. Research and Reporting</li> </ul>   |                             |  |  |  |  |
| 6- Teaching and learning                                   |  |   |                             |  |  |  |  |
| methods for disable studen                                 | 3. Using as m  | 3. Using as many audio/visual aids as possible.   |                             |  |  |  |  |
| 7- Teaching and learning methods for low capacity students | 1. Assign a part and 2. provide the tutorials.   | <ul> <li>and</li> <li>provide them with specific tailored tasks.</li> <li>Repeat the explanation of some of the material and tutorials.</li> <li>Assign a teaching assistance to follow up their</li> </ul> |                             |  |  |  |  |
| 8- Teaching and learning                                   |  | rse project tasks to  | those students.             |  |  |  |  |
| methods for outstanding                                    | 2. Give them   | advanced extra-cur  | riculum topics.             |  |  |  |  |
| students   | 3. Encourage studies.  | them to take part i   | n a pilot research and case |  |  |  |  |
| 9- Students assessment                                     | <u>,</u>   |   |                             |  |  |  |  |
| a- Assessment methods                                      | <ol> <li>Practical Examina</li> <li>Oral Examination</li> <li>Formative (quizze</li> <li>Final Term Exami</li> </ol>           | Aid Term Examination (written/ online) ractical Examination Oral Examination ormative (quizzes- presentation -reports) inal Term Examination (written)  |                             |  |  |  |  |
| b- Assessment schedule                                     | - Exercise sheet/ Lab as<br>- Quizz-1:   | se sheet/ Lab assignment : Weekly -1: Week no. 5  |                             |  |  |  |  |

|                               | - Mid-Term exam:   | Week no . 8  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|--|
|                               | - Quizz-2:   | Week no. 12  |  |  |  |  |  |
|                               | - Final – term examination:                                    | Week no. 16  |  |  |  |  |  |
| c- Weighting of               | - Class tutorial and quizzes :                                 | 15 %   |  |  |  |  |  |
| assessment                    | - Mid-term examination:  | 15 %   |  |  |  |  |  |
|                               | - Final – term examination:                                    | 70 %   |  |  |  |  |  |
|                               | Total  | 100 %  |  |  |  |  |  |
| 10- List of text books and re | ferences:  |  |  |  |  |  |  |
| a- Course notes               | There are lectures notes prepare authorized by the department. | d in the form of a book  |  |  |  |  |  |
| b- Text books/ References     |  | Organizational Behavior, Addison   |  |  |  |  |  |
|                               |  | <ul> <li>Scgermerhorn, Jr., R. J., Hunt, G. J., and Osborn, N. R.,</li> <li>Organizational Behavior, John Wiley &amp; Sons, Inc., New York, 10th.</li> <li>Ed., 2008.</li> </ul> |  |  |  |  |  |
| c- Periodicals, Web sitesetc  |  |  |  |  |  |  |  |

| 11-Course contents – Course related program competencies |                           |   |            |          |          |          |  |  |
|--|---------------------------|---|------------|----------|----------|----------|--|--|
|  |                           |   | Level A    |          |          |          |  |  |
|  |                           | А | <b>1.7</b> | A.8      | A.9      | A.10     |  |  |
| - Concept and nature                                     | of communication          | 1 | /          |          |          |          |  |  |
| -Communication mod                                       | del                       | 1 | 1          | <b>√</b> |          |          |  |  |
| -Formal and informa                                      | l communications          | ١ | 1          | <b>√</b> |          |          |  |  |
|  |                           |   |            | <b>√</b> | 1        |          |  |  |
| - Interpersonal and n                                    | nanagerial communications |   |            | 1        | <b>√</b> |          |  |  |
| -Body language   |                           |   |            |          | 1        | 1        |  |  |
| -Written communica                                       | tions                     |   |            |          | 1        | <b>√</b> |  |  |

|                           |     | Level A |     |          |      |  |  |  |  |
|---------------------------|-----|---------|-----|----------|------|--|--|--|--|
|                           | A.5 | A.7     | A.8 | A.9      | A.10 |  |  |  |  |
| Lecture (online/in class) | √   |         |     |          |      |  |  |  |  |
| Discussion                | √   | √       |     |          |      |  |  |  |  |
| Tutorial                  | √   | √       | 1   | √        |      |  |  |  |  |
| Problem solving           |     | √       |     | 1        |      |  |  |  |  |
| Brain storming            |     |         | √   |          |      |  |  |  |  |
| Projects                  |     |         | √   | <b>V</b> |      |  |  |  |  |
| Self-learning             |     |         |     |          | √    |  |  |  |  |
| Research and Reporting    |     |         | √   |          | √    |  |  |  |  |
| Computer Simulation       |     |         |     | 1        |      |  |  |  |  |
| Teamwork                  |     |         |     |          | √    |  |  |  |  |

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

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

Dr./ aya .m. salem

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            | Principles of Electi                    | ronic Engineering              |  |  |  |
|-------------------------|---|--------------------------------|--|--|--|
| Course Code             | ECE 121                                 |                                |  |  |  |
| Academic Year           | 2022-2023                               |                                |  |  |  |
| Coordinator             | Dr. Mohamed Elkhar                      | nry                            |  |  |  |
| Teaching Staff          | Dr. Mohamed Elkhar                      | nry                            |  |  |  |
| Level                   | Level (1)                               |                                |  |  |  |
| Semester                | Second Term                             |                                |  |  |  |
| Number of Weekly        | Lecture                                 | 2                              |  |  |  |
| <b>Contact Hours</b>    | Tutorial                                | 1                              |  |  |  |
|                         | Lab                                     | 0                              |  |  |  |
| Department offering the | <ul> <li>Electronics ar</li> </ul>      | nd Communications Engineering, |  |  |  |
| program                 | Computers as                            | nd Systems Engineering,        |  |  |  |
|                         | Communications and Computer Engineering |                                |  |  |  |
| Department offering the | Electronics Engineering and Electrical  |                                |  |  |  |
| course                  | Communication                           |                                |  |  |  |
| 0 4: (1)                |   |                                |  |  |  |

#### 2- Aim of the course

This course aims to provide the student the knowledge and the skills required to understand:

- 1. Electronic components.
- 2. Electronic devices such as diodes, transistors, and integrated circuits are made of a semiconductive material.
- 3. An important concept of the pn junction that is formed when two different types of semiconductive material are joined.
- 4. The pn junction is fundamental to the operation of devices such as the solar cell, the diode, and certain types of transistors.
- 5. To understand how these devices work, you should have a basic knowledge of the structure of atoms and the interaction of atomic particles.
- 6. Diode circuits applications, Rectifiers and peak detectors.
- 7. Bipolar junction transistors (BJT),

| 3- Course relat       | ted program competencies  |
|-----------------------|---|
| Level A – General     | <ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.</li> <li>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.</li> <li>A.4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.</li> </ul>  |
| Level B - Specialist  | <ul> <li>B.1 Select, model and analyze electrical power systems applicable to the specific discipline by applying the concepts of: generation, transmission and .distribution of electrical power systems</li> <li>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</li> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and .professional tools</li> <li>B.4 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</li> <li>B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.</li> </ul> |
| 4- Course<br>Contents | Revision (atomic structure, energy levels, energy bands,) Semiconductors materials and doping process.  Electronic components: PN junction diodes, special diodes, diode circuit's applications, rectifiers and peak detectors.  Electronic devices such as diodes, transistors, and integrated circuits are made of a semiconductive material.  An important concept of the pn junction that is formed when two different types of semiconductive material are joined.  The pn junction is fundamental to the operation of devices such as the solar cell, the diode, and certain types of transistors.  To understand how these devices work, you should have a basic knowledge of the structure of atoms and the interaction of atomic particles.  Bipolar junction transistors (BJT),   |

| # Topic  | Lecture   | Tutorial/Practical  | No of hours                    |  |  |  |
|--|---|---|--------------------------------|--|--|--|
| Introduction to Economy: Basic<br>Concepts, Varieties of Market<br>Structure   | 4   | 4   | 8                              |  |  |  |
| Types Of Economy, Accounting Income And Cash Flow, The Objectives Of The Firms, Balance .Sheet (BS)  | 6   | 6   | 12                             |  |  |  |
| Introduction To Engineering Economy: Engineering Decision Making, Break – Even Analysis, Production Function, Payback Period Method, Payback Period Method | 8   | 8   | 16                             |  |  |  |
| Time Value of Money: Simple Interest Rate, Compound Interest, Discreet cash flow and Economic Equivalence, Evaluating of the Projects                      | 6   | 6   | 12                             |  |  |  |
| Depreciation Models: Nature of . Depreciation, Depreciation Conventional Methods, Methods Based on Asset Usage, Switching Between Depreciation Models      | 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                                     |   |                                |  |  |  |
| 6- Teaching and learning methods for disable students  | <ol> <li>Teamwork</li> <li>Additional Tutorials</li> <li>Online lectures and assignments</li> <li>Using as many audio/visual aids as possible.</li> <li>Providing extra opportunities for practice</li> </ol> |   |                                |  |  |  |
| 7- Teaching and learning methods for low capacity students   | Assign a por and provide  | tion of the office hours<br>them with specific tail<br>explanation of some of | for those students ored tasks. |  |  |  |

|                                |         | 3. Assign a teaching assistance to follow up their performance |
|--------------------------------|---------|--|
| 8- Teaching and learning met   | hods    | Assign course project tasks to those students.                 |
|                                |         | Give them advanced extra-curriculum topics.                    |
| for outstanding students       |         | 3. Encourage them to take part in a pilot research and case    |
|                                |         | studies.   |
|                                |         | Studies.   |
| 9- Students assessment         |         |  |
| a- Assessment                  | 1. N    | 1id Term Examination (written/ online)                         |
| methods                        | 2. Pı   | ractical Examination   |
|                                | 3. O    | ral Examination  |
|                                | 4. Fo   | ormative (quizzes- presentation -reports)                      |
|                                |         | nal Term Examination (written)                                 |
| b- Assessment schedule         |         | cise sheet/ Lab assignment : Weekly                            |
|                                | - Quiz  | z-1: Week no. 4  |
|                                | - Mid-  | Term exam: Week no. 8  |
|                                | - Quiz  | z-2: Week no. 12   |
|                                | - Final | – term examination: Week no. 16                                |
| c- Weighting of assessment     | - Class | s tutorial and quizzes : 10%                                   |
|                                | - Mid-  | term examination: 20 %   |
|                                | - Final | – term examination: 70%  |
|                                |         | Total 100 %  |
| 10- List of text books and ref | erences | :  |
| a- Course notes                | Th      | nere are lectures notes prepared in the form of a book         |
| 353115511550                   |         | thorized by the department.                                    |
| b- Text books/ References      |         | /. Road strum and D. H. Wolver, Electrical Engineering for All |
| D- TEAL DOORS/ References      |         | neers, J. Wiley & Sons, Inc., New York, 1994.                  |
|                                | Liigii  | ileers, J. Willey & Julis, Ilic., New Turk, 1334.              |
|                                | 2 0     | enu Singh, B. P. Singh, Microprocessors Interfacing and        |
|                                |         |  |
|                                |         | lication, New Age International Publishers, 2002.              |
| 2c- Periodicals, Web sites     | https   | s:// classroom.google.com/c/NDE0OTM2NjgyODc4                   |
| etc.                           |         |  |
|                                |         |  |
|                                |         |  |

| 11-Course ccontents – Course related program competencies |      |     |     |      |     |     |     |
|---|------|-----|-----|------|-----|-----|-----|
|   | Leve | IA  |     | Leve | l B |     |     |
|   | A.1  | A.3 | A.4 | B.2  | B.3 | B.4 | B.5 |
| Introduction to Economy: Basic Concepts, Varieties of     | 1    |     |     |      |     |     |     |

| Market Structure,   |   |   |   |   |   |   |          |
|---|---|---|---|---|---|---|----------|
| Types Of Economy, Accounting Income And Cash Flow,<br>The Objectives Of The Firms, Balance Sheet (BS).  | 1 | 1 |   | 1 | 1 | 1 | <b>√</b> |
| Introduction To Engineering Economy: Engineering Decision Making, Break – Even Analysis, Production Function, Payback Period Method, Payback Period Method. |   | 1 | 1 |   |   | 1 | 1        |
| Time Value of Money: Simple Interest Rate, Compound Interest, Discreet cash flow and Economic Equivalence, Evaluating of the Projects                       | 1 | 1 | 1 |   | 1 |   | 1        |
| Depreciation Models: Nature of Depreciation, Depreciation Conventional Methods  |   |   | 1 | 1 | 1 | 1 |          |

| 12-Teaching and learning methods - Course related pro | gram c | ompe | tencie | s     |     |     |     |
|---|--------|------|--------|-------|-----|-----|-----|
|   | Level  | Α    |        | Level |     |     |     |
|   | A.1    | A.3  | A.4    | B.2   | B.3 | B.4 | B.5 |
| Lecture (online/in class)                             | 1      |      |        |       |     |     |     |
| Discussion  | 1      | 1    | 1      | 1     | ٧   | 1   | 1   |
| Tutorial  | 1      | 1    | 1      | 1     | 1   |     |     |
| Problem solving                                       |        |      | 1      | 1     | 1   |     |     |
| Brain storming  |        |      |        | 1     | 1   | 1   | 1   |
| Projects  |        |      |        | 1     | 1   | 1   | 1   |
| Self-learning   |        |      |        |       |     |     | 1   |
| Research and Reporting                                |        |      |        |       |     | 1   |     |
| Computer Simulation                                   |        |      |        |       |     | 1   | 1   |
| Teamwork  |        |      |        |       |     |     |     |

| 13- Assessment methods - Course related program competencies |  |     |     |     |     |     |     |     |
|--|--|-----|-----|-----|-----|-----|-----|-----|
| Assessment methods Course related program competencies       |  |     |     |     |     |     |     |     |
| Level A Level B  |  |     |     |     |     |     |     |     |
|  |  | A.1 | A.3 | A.4 | B.2 | B.3 | B.4 | B.5 |

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

Authorized from board of the department at 11/2/2023 Course coordinator:

3/20



Dr. Mohammed Elkhamry

Ministerial Resolution 5053 - 12/10/2016

K 10, Bilbies - 10th of Ramadan



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

### Course Specification

### 1- Basic Information

| Course Title            | Data structures   |   |  |  |  |
|-------------------------|---|---|--|--|--|
| Course Code             | CSE 122   |   |  |  |  |
| Academic Year           | 2022-2023   |   |  |  |  |
| Coordinator             | Dr. Gafary Mahmoud  | 1 |  |  |  |
| Teaching Staff          | Dr. Gafary Mahmoud  | 1 |  |  |  |
| Level                   | Level (1)   |   |  |  |  |
| Semester                | Second Term   |   |  |  |  |
| Number of Weekly        | Lecture   | 2 |  |  |  |
| Contact Hours           | Tutorial 0  |   |  |  |  |
|                         | Lab 2   |   |  |  |  |
| Department offering the | <ul> <li>Electronics and Communications Engineering,</li> </ul> |   |  |  |  |
| program                 | <ul> <li>Computers and Systems Engineering,</li> </ul>          |   |  |  |  |
|                         | Communications and Computer Engineering                         |   |  |  |  |
|                         |   |   |  |  |  |
| Department offering the | Computers and Systems Engineering                               |   |  |  |  |
| course                  |   |   |  |  |  |
| 2. Aim of the course    |   |   |  |  |  |

#### 2- Aim of the course

- 1. To teach student basics of data structures such as stacks, and queues.
- 2. To equip students with skills of developing computer algorithms such as programs for storing and matrix algebra.
- 3. To acquire students a good idea to the study of data structures and algorithms.
- 4. To teach students the concepts and applications of data structures in C++. Classes to represent the linear lists, arrays matrices, structures, pointers, and stack.
- 5. To provide students with the design steps of programming projects and algorithm analysis.

| A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic scie and C++ programming skills.   |  |                               |   |             |  |  |  |  |  |
|---|--|-------------------------------|---|-------------|--|--|--|--|--|
| neral   | A.2. Develop and conduct simulation, analyze and in findings, and use statistical judgment to draw conclustions. | iterpret da<br>al analyses    | ita, assess and ev                        | aluate      |  |  |  |  |  |
| judgment to draw conclusions  A.3. Apply engineering design processes to produce costeffective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to discipline and within the principles and contexts of sustain design and development. |  |                               |   |             |  |  |  |  |  |
|   | A.5. Practice research tec as an inherent part of lear   | -                             | nd methods of inv                         | vestigation |  |  |  |  |  |
| Speciality  |  |                               |   |             |  |  |  |  |  |
| 4- Course<br>Contents   | Data types and representation – D structures and arrays – allocation – trees, grap and their analysis – has      | Dynamic dat<br>ohs – searchir | a storage and memory and sorting algorith |             |  |  |  |  |  |
| # Topic   |  | Lecture                       | Tutorial/Practical                        | No of hours |  |  |  |  |  |
| Data types  | and representation   | 2                             | 2   | 4           |  |  |  |  |  |
| Data structu<br>and arrays  | ures representation by structures  | 4                             | 4   | 8           |  |  |  |  |  |
| Dynamic da allocation a   | ata storage and memory<br>Illocation   | 4                             | 4   | 8           |  |  |  |  |  |
| allocation  |  | 4                             | 4   | 8           |  |  |  |  |  |
| trees   |  | 1                             | 1   | 2           |  |  |  |  |  |
| graphs  |  | 1                             | 1   | 2           |  |  |  |  |  |
| hashing   |  | 1                             | 1   | 2           |  |  |  |  |  |

| searching and sorting algo-<br>analysis | orithms and their   | 2  | rithms and their 2 2 |            |  |  |  |
|---|---|--|----------------------|------------|--|--|--|
| Total sum                               |   | 19   | 19                   | 38         |  |  |  |
| 5- Teaching and learning m              |   | <ol> <li>Lecture (/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> </ol> |                      |            |  |  |  |
| 6- Teaching and learning mostudents     | ethods for disable  |  | nal Tutorials        | ments      |  |  |  |
| students                                | <ol> <li>Online lectures and assignments</li> <li>Using as many audio/visual aids as possil</li> <li>Providing extra opportunities for practice</li> </ol>  |  |                      |            |  |  |  |
| 7- Teaching and learning m              | ethods for low  |  |                      |            |  |  |  |
| capacity students                       | <ol> <li>provide them with specific tailored tasks.</li> <li>Repeat the explanation of some of the material and tutorials.</li> <li>Assign a teaching assistance to follow up their performance</li> </ol>        |  |                      |            |  |  |  |
| 8- Teaching and learning m              | ethods for  | •  | course project tasks | s to those |  |  |  |
| outstanding students                    | students.  2. Give them advanced extra-curriculum topics.  3. Encourage them to take part in a pilot  |  |                      |            |  |  |  |
|   | 3. Encourage them to take part in a pilot research and case studies.  |  |                      |            |  |  |  |
| 9- Students assessment                  |   |  |                      |            |  |  |  |
| a- Assessment methods                   | <ol> <li>Mid Term Examination (written/ online)</li> <li>Practical Examination</li> <li>Oral Examination</li> <li>Formative (quizzes- presentation -reports)</li> <li>Final Term Examination (written)</li> </ol> |  |                      |            |  |  |  |
| 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                         | - Class tutorial and qu   | uizzes :   | 10 %                 |            |  |  |  |

| assessment                    | - Mid-term examination:  |                            | 20     | %     |     |  |  |
|-------------------------------|--|----------------------------|--------|-------|-----|--|--|
|                               | - Final – term examination:  |                            | 70     | %     |     |  |  |
|                               | То   | tal                        | 100    | %     |     |  |  |
| 10- List of text books and re | ferences:  |                            |        |       |     |  |  |
| a- Course notes               | There are lectures notes prepared in the form of a pdf.  |                            |        |       |     |  |  |
| b-Text books/ References      | Sartaj sahni, data structures and algorithms, and applications in C++, McGraw.Hill 1 <sup>ST</sup> ED. |                            |        |       |     |  |  |
| c- Periodicals, Web sites     | Web Sites related to Data structur   | es e                       | nginee | ering | as: |  |  |
| etc                           | https://www.onlinegdb.com/   | https://www.onlinegdb.com/ |        |       |     |  |  |
|                               | www. data structures.hmc.edu,  |                            |        |       |     |  |  |
|                               | www.tutorial. Data Sructures.edu,  |                            |        |       |     |  |  |

| 11-Course contents – Course related program competencies             |                 |     |     |     |     |          |     |     |
|--|-----------------|-----|-----|-----|-----|----------|-----|-----|
|  | Level A Level B |     |     |     |     |          |     |     |
|  | A.1             | A.2 | A.3 | A.5 | B.1 | B.2      | В.3 | B.5 |
| C++ general code frame structure review                              | 1               | 1   | 1   |     | 1   | 1        | 1   |     |
| C++ Control statements review such as selection statements and loops | 1               | 1   | 1   |     | 1   | 1        | 1   |     |
| Linear lists, Arrays, Structures and Functions                       | 1               | 1   | 1   | 1   | 1   | 1        | 1   | 1   |
| Pointers, trees, graphs and hashing                                  | 1               | 1   | 7   |     | 1   | <b>√</b> | 7   |     |
| Dynamic data storage and memory allocation                           | 1               | 1   | 7   |     | 1   | 1        | 1   |     |

| 12-Teaching and learning methods - Course related program competencies |     |       |     |     |     |          |      |          |
|--|-----|-------|-----|-----|-----|----------|------|----------|
|  |     | Level | Α   |     |     | Lev      | el B |          |
|  | A.1 | A.2   | A.3 | A.5 | B.1 | A.2      | A.3  | A.5      |
| Lecture (online/in class)  |     | 1     | 1   | 1   |     | <b>V</b> | 1    | <b>V</b> |
| Discussion   |     | 1     | 1   | 1   |     | 1        | 1    | 1        |
| Tutorial   | 1   | 1     | 1   | 1   | 1   | 1        | 1    | 1        |
| Problem solving  | 1   | 1     | 1   | 1   | 1   | <b>V</b> | 1    | 1        |
| Brain storming   | 1   | 1     | 1   | 1   | 1   | 1        | 1    | <b>V</b> |
| Projects   | 1   | 1     | 1   | 1   | 1   | 1        | 1    | 1        |
| Self-learning  |     | 1     |     |     |     | 1        |      |          |
| Research and Reporting   |     |       | 1   |     |     |          | 1    |          |
| Computer Simulation  |     |       |     |     |     |          |      |          |
| Teamwork   |     |       |     |     |     |          |      |          |

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

Authorized from board of the department at 15/3/2023 Course coordinator:



| Dr. Gafary Mahmoud |                    |
|--------------------|--------------------|
|                    | Dr. Gafary Mahmoud |
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Ministerial Resolution 5053 - 12/10/2016

K 10, Bilbies - 10th of Ramadan



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

### Course Specification

### 1- Basic Information

| Course Title            | Electrical Circuits  | s 2          |  |  |  |
|-------------------------|--|--------------|--|--|--|
| Course Code             | ELP 123  |              |  |  |  |
| Academic Year           | 2022-2023  |              |  |  |  |
| Coordinator             | D. Nader Mohamed   | Abd Elmohsen |  |  |  |
| Teaching Staff          | D. Nader Mohamed   | Abd Elmohsen |  |  |  |
| Level                   | Level (4)  |              |  |  |  |
| Semester                | Second Term  |              |  |  |  |
| Number of Weekly        | Lecture 2  |              |  |  |  |
| <b>Contact Hours</b>    | Tutorial 1   |              |  |  |  |
|                         | Lab 1  |              |  |  |  |
| Department offering the | <ul> <li>Electronics and Communications Engineering ,</li> </ul> |              |  |  |  |
| program                 | <ul> <li>Computers and Systems Engineering ,</li> </ul>          |              |  |  |  |
|                         | Communications and Computer Engineering                          |              |  |  |  |
| Department offering the | Electronics and Communications Engineering                       |              |  |  |  |
| course                  |  |              |  |  |  |
| 2- Aim of the course    |  |              |  |  |  |

- 1. To introduce students to fundamental theories and methodologies for analyzing DC, and AC Network structures.
- 2. To equip students a good knowledge of operational amplifier circuits.
- 3. To provide students the ability to formulate transient analysis and responses first order and second order circuits.
- 4. To provide students some skills to understand three phase circuits.
- 5. To prepare students to understand mutual inductance, Laplace and Fourier transforms in electric circuits
- 6. To teach students the use of circuit simulation and software packages for DC, and AC steady-state and transient analysis.

|                           | •   |   | olex engineering problem science and mathematics  |  |  |  |  |  |  |
|---------------------------|---|---|---|--|--|--|--|--|--|
| Level A – General         | interpret data,   | assess and evaluat  | experimentation and/or see findings, and use statistood or aw conclusions   | •  |  |  |  |  |  |
| Level /                   | specified needs<br>environmental  | with consideratio<br>, ethical and other                        | s to produce cost-effectivn<br>for global, cultural, social<br>aspects as appropriate to<br>sof sustainable design and      | al, economic,<br>the discipline and                      |  |  |  |  |  |
|                           |   | ical power systems applets of: generation, tran                 | •   |  |  |  |  |  |  |
| Speciality                |   | r a specific applic   | ectrical/electronic/digit ation; and identify the t   |  |  |  |  |  |  |
| Level B - Speciality      | _   | lectronic/digital e   | ents, modules, sub-sys<br>engineering using tech  | · · · · · · · · · · · · · · · · · · ·                    |  |  |  |  |  |
|                           |   | cuit under specifi  | rmance of an electrical<br>ic input excitation and e  | _  |  |  |  |  |  |
| 4- Course<br>Contents     | architecture, RTL, str<br>Structure: architectu<br>and I/O blocks. FPGA | ructural, dataflow<br>Ire, configurable I<br>A design flow. Seq | ntroduction to HDL: ention and behavioral descrip ogic blocks, routing, loo uential processes and fills. Embedded design to | tion. FPGA<br>kup tables, memory<br>nite state machines. |  |  |  |  |  |
| # Topic                   |   | Lecture   | Tutorial/Practical  | No of hours  |  |  |  |  |  |
| Network st<br>Operationa  |   | 4   | 4   | 8  |  |  |  |  |  |
| -                         | of First Order esponse of Second uits                                   | 4   | 6   | 10   |  |  |  |  |  |
| Three - pha<br>Inductance | se Circuits, Mutual   | 6   | 6   | 12   |  |  |  |  |  |

4

10

6

Laplace and Fourier

Transforms in Electric Circuits, Transfer Function, Two port

| Networks  |   |  |                     |        |  |  |
|---|---|--|---------------------|--------|--|--|
| Introduction to Frequency<br>Selective Circuits, Fourier<br>Series, Circuit Analysis un<br>PSPICE Software. | r   | 8  | 16                  |        |  |  |
| Total sum   |   | 28   | 28                  | 56     |  |  |
| 5- Teaching and learning methods  6- Teaching and learning  |   | <ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> <li>Additional Tutorials</li> </ol> |                     |        |  |  |
| methods for disable studer  | its   |  | res and assignments |        |  |  |
|   |   | <ul><li>3. Using as many audio/visual aids as possible.</li><li>4. Providing extra opportunities for practice</li></ul>  |                     |        |  |  |
| 7- Teaching and learning methods for low capacity students  |   | Assign a portion of the office hours for those students and     provide them with specific tailored tasks.     Repeat the explanation of some of the material and tutorials.     Assign a teaching assistance to follow up their performance   |                     |        |  |  |
| 8- Teaching and learning  |   | Assign course project tasks to those students.   |                     |        |  |  |
| methods for outstanding students  |   | <ol> <li>Give them advanced extra-curriculum topics.</li> <li>Encourage them to take part in a pilot research and case studies.</li> </ol>   |                     |        |  |  |
| 9- Students assessment  |   |  |                     |        |  |  |
| a- Assessment<br>methods  | <ol> <li>Mid Term Examination (written/ online)</li> <li>Practical Examination</li> <li>Oral Examination</li> <li>Formative (quizzes- presentation -reports)</li> <li>Final Term Examination (written)</li> </ol> |  |                     |        |  |  |
| b- Assessment schedule  | - Exer  | cise sheet/ Lab assi   | gnment: Week        | dy     |  |  |
|   | - Quizz-1: Week no. 5   |  |                     |        |  |  |
|   | - Mid-  | - Mid-Term exam: Week no . 8   |                     |        |  |  |
|   | - Quiz  | z-2:   | Week                | no. 12 |  |  |

|  | - Final – term examination:                                   | Week no. 16   |  |  |  |  |  |
|--|---|---|--|--|--|--|--|
| c- Weighting of                        | - Class tutorial and quizzes :                                | %   |  |  |  |  |  |
| assessment                             | - Mid-term examination:                                       | %   |  |  |  |  |  |
|  | - Final – term examination:                                   | %   |  |  |  |  |  |
|  | Tota  | al 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              | J. W. Nilsson and S. A. Ri<br>8th. Ed., 2008.                 | J. W. Nilsson and S. A. Riedel, Electric Circuits, Prentice - Hall, |  |  |  |  |  |
| c- Periodicals, Web sites              | www.hyperstaffs.info/work/phy                                 | sics/child/index.html   |  |  |  |  |  |
| etc                                    | www.andythelwell.com/blobz                                    |   |  |  |  |  |  |
|  | www.zephyrus.co.uk/circuits1.h                                | <u>ntml</u>   |  |  |  |  |  |
|  | www.ddpp.com/DDPP3_pdf/elecCkts.pdf                           |   |  |  |  |  |  |
|  | http://www.allaboutcircuits.com/textbook/direct-current/chpt- |   |  |  |  |  |  |
|  | 2/computer-simulation-electr                                  | ic-circuits/  |  |  |  |  |  |
|  | www.teachersdomain.org//phy                                   | 03.sci.phys.mfw.zalarm  |  |  |  |  |  |
|  |   |   |  |  |  |  |  |

| 11-Course contents – Course related program competencies  |             |   |   |         |     |     |     |
|---|-------------|---|---|---------|-----|-----|-----|
|   | Level A     |   |   | Level B |     |     |     |
|   | A.1 A.2 A.3 |   |   | B.1     | B.2 | B.3 | B.4 |
| Network structures, Operational Amplifier   | 1           |   |   |         |     |     |     |
| Response of First Order Circuits, Response of Second<br>Order Circuits                                | 1           | 1 |   | 1       | 1   | 1   | 1   |
| Three - phase Circuits, Mutual Inductance   |             | 1 | 1 |         |     | 1   | 1   |
| Laplace and Fourier Transforms in Electric Circuits,<br>Transfer Function, Two port Networks          | 1           | 1 | 1 |         |     |     |     |
| Introduction to Frequency Selective Circuits, Fourier Series, Circuit Analysis using PSPICE Software. |             |   | 1 |         | 1   | 1   | 1   |

| 12-Teaching and learning methods - Course related program competencies |         |         |  |  |
|--|---------|---------|--|--|
|  | Level A | Level B |  |  |

|                           | A.1 | A.2 | A.3 | B.1 | B.2 | B.3 | B.4      |
|---------------------------|-----|-----|-----|-----|-----|-----|----------|
| Lecture (online/in class) | 1   |     |     |     |     |     |          |
| Discussion                | 1   | 1   | 1   | 1   | 1   | 1   | 1        |
| Tutorial                  | 1   | 1   | 1   | 1   | 1   |     |          |
| Problem solving           |     |     | 1   | 1   | 1   |     |          |
| Brain storming            |     |     |     | 1   | 1   | 1   | 1        |
| Projects                  |     |     |     | 1   | 1   | 1   | 1        |
| Self-learning             |     |     |     |     |     |     | 1        |
| Research and Reporting    |     |     |     |     |     | 1   |          |
| Computer Simulation       |     |     |     |     |     | 1   | <b>√</b> |
| Teamwork                  |     |     |     |     |     |     |          |

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

Authorized from board of the department at 11/2/2023 Course coordinator:





Dr. Nader Mohamed Abd

| Elmohsen |
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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            | Electrical Materials                    |                              |  |  |
|-------------------------|---|------------------------------|--|--|
| Course Code             | ELP 124                                 |                              |  |  |
| Academic Year           | 2022-2023                               |                              |  |  |
| Coordinator             | Dr. Bassam A. Hema                      | de                           |  |  |
| Teaching Staff          | Dr. Bassam A. Hema                      | de                           |  |  |
| Level                   | Level (1)                               |                              |  |  |
| Semester                | Second Term                             |                              |  |  |
| Number of Weekly        | Lecture                                 | 2                            |  |  |
| Contact Hours           | Tutorial                                | 2                            |  |  |
|                         | Lab                                     | -                            |  |  |
| Department offering the | <ul> <li>Electronics and C</li> </ul>   | Communications Engineering , |  |  |
| program                 | Computers and S                         | Systems Engineering ,        |  |  |
|                         | Communications and Computer Engineering |                              |  |  |
| Department offering the | Electrical power Engineering            |                              |  |  |
| course                  |   |                              |  |  |
| 2 Aim of the seconds    |   |                              |  |  |

#### 2- Aim of the course

- 1. To introduce the students to the basic principles of atoms and atomic structure
- 2. To enhance students' ability to define the different classifications of the material.
- 3. To analyze the crystal structure of different materials.
- 4. To acquire students the skills for classifying materials according to exhibit properties such as electrical, magnetic, and optical properties of materials.
- 5. To emphasize the comprehensive treatment of semiconductor materials of electronics industries.

| Level A – General        | <ul> <li>A.1 Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science, and mathematics.</li> <li>A.2 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.</li> <li>A.4 Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues, and risk management principles.</li> </ul>  |         |                    |             |  |  |  |
|--------------------------|--|---------|--------------------|-------------|--|--|--|
| 4- Course Contents       | <ul> <li>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.</li> <li>B.3 Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.</li> <li>B.4 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.</li> <li>B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.</li> <li>Atoms and atomic structure, Materials Classification, Conductors, High/low - Resistive Materials, Semiconductors, Insulators, Magnetic Materials, Study and Measurement of Electrical, Magnetic, and Optical Properties of Materials,</li> </ul> |         |                    |             |  |  |  |
| # Topic                  |  | Lecture | Tutorial/Practical | No of hours |  |  |  |
| Atoms and at             | omic structure   | 4       | 4                  | 8           |  |  |  |
| Materials, Sei           | ssification,<br>High/low - Resistive<br>Miconductors,<br>agnetic Materials.  | 6       | 12                 |             |  |  |  |
| •                        | Measurement of Magnetic, and Optical 6 12 of Materials   |         |                    |             |  |  |  |
| Materials for Components | Electronic   | 6       | 6                  | 12          |  |  |  |

| Magnetic and optical prope of materials.               | rties  | 6   | 6   |           | 12    |  |
|--|--|---|---|-----------|-------|--|
| Total sum  |  | 28  | 28  |           | 56    |  |
| 5- Teaching and learning met                           | <ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> </ol> |   |   |           |       |  |
| 6- Teaching and learning met                           | hods   | 1. Additional   |   |           |       |  |
| for disable students                                   |  | 3. Using as ma  | ures and assignm<br>any audio/visual a<br>xtra opportunitie | aids as p |       |  |
| 7- Teaching and learning met for low capacity students | hods   | <ol> <li>Assign a portion of the office hours for those students and</li> <li>provide them with specific tailored tasks.</li> <li>Repeat the explanation of some of the material and tutorials.</li> <li>Assign a teaching assistance to follow up their performance</li> </ol> |   |           |       |  |
| 8- Teaching and learning met for outstanding students  | hods   | <ol> <li>Assign course project tasks to those students.</li> <li>Give them advanced extra-curriculum topics.</li> <li>Encourage them to take part in a pilot research and case studies.</li> </ol>  |   |           |       |  |
| 9- Students assessment                                 |  |   |   |           |       |  |
| a- Assessment methods                                  | Aid Term Examination (written/ online) Practical Examination Oral Examination Ormative (quizzes- presentation -reports) In the initial Term Examination (written)  |   |   |           |       |  |
| b- Assessment schedule                                 | - Exerc  | cise sheet/ Lab ass   | signment:   | Weekly    |       |  |
|  | - Quizz  | <b>z-1</b> :  | \   | Week no   | o. 5  |  |
|  | - Mid-   | Term exam:  | V   | Week no   | . 8   |  |
|  | - Quizz-2:   |   |   | Veek no.  | . 12  |  |
|  | - Final – term examination: Week no. 16  |   |   |           | o. 16 |  |
| c- Weighting of assessment                             | - Class  | tutorial and quizz  | es :  | %         |       |  |
|  | - Mid-   | term examination  | ı:<br>  | %         |       |  |

|  | - Final – term examination:   |  |  |  |  |  |  |  |
|--|---|--|--|--|--|--|--|--|
|  | 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              | A. J. Dekker, Electrical Engineering Materials, Prentice Hall, 1970.<br>S. O. Kasap, Principles of Electrical Engineering Materials, McGraw<br>- Hill, 2000 |  |  |  |  |  |  |  |
| c- Periodicals, Web sitesetc           | www.sites.google.com\view\bassam-awny   |  |  |  |  |  |  |  |

| 11-Course contents – Course related program competencies  |      |     |     |         |     |     |     |  |
|---|------|-----|-----|---------|-----|-----|-----|--|
|   | Leve | ΙA  |     | Level B |     |     |     |  |
|   | A.1  | A.2 | A.4 | B.2     | B.3 | B.4 | B.5 |  |
| Atoms and atomic structure  | 1    |     |     |         |     |     |     |  |
| Materials Classification, Conductors, High/low -<br>Resistive Materials, Semiconductors, Insulators,<br>Magnetic Materials. | 1    | 1   |     | 1       | 1   | 1   | 1   |  |
| Study and Measurement of Electrical, Magnetic, and Optical Properties of Materials  |      | 1   | 1   |         |     | 1   | 1   |  |
| Materials for Electronic Components   | 1    | 1   | 1   |         |     |     |     |  |
| Magnetic and optical properties of materials.   |      |     | 1   | 1       | 1   |     |     |  |

| 12-Teaching and learning methods - Course related program competencies |       |     |     |         |     |     |     |  |  |  |
|--|-------|-----|-----|---------|-----|-----|-----|--|--|--|
|  | Level | Α   |     | Level B |     |     |     |  |  |  |
|  | A.1   | A.2 | A.4 | B.2     | B.3 | B.4 | B.5 |  |  |  |
| Lecture (online/in class)  | 1     |     |     |         |     |     |     |  |  |  |
| Discussion   | 1     | 1   | 1   | 1       | 1   | 1   | 1   |  |  |  |
| Tutorial   | 1     | 1   | 1   | 1       | 1   |     |     |  |  |  |
| Problem solving  |       |     | 1   | 1       | 1   |     |     |  |  |  |
| Brain storming   |       |     |     | 1       | 1   | 1   | 1   |  |  |  |

| Projects               |  | 1 | 1 | 1 | 1 |
|------------------------|--|---|---|---|---|
| Self-learning          |  |   |   |   | 1 |
| Research and Reporting |  |   |   | 1 |   |
| Computer Simulation    |  |   |   | 1 | 1 |
| Teamwork               |  |   |   |   |   |

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

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

2



Dr Bassam A. Hemad

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            | <b>Energy Conversion</b>  |
|-------------------------|---|
| Course Code             | ELP 125   |
| Academic Year           | 2022-2023   |
| Coordinator             | Assoc. Prof. Saad Awad Mohamed Abdelwahab                       |
| Teaching Staff          | Assoc. Prof. Saad Awad Mohamed Abdelwahab                       |
| Level                   | Level (1)   |
| Semester                | 2 Term  |
| Number of Weekly        | Lecture 2   |
| Contact Hours           | Tutorial 2  |
|                         | Lab 0   |
| Department offering the | <ul> <li>Electronics and Communications Engineering,</li> </ul> |
| program                 | <ul> <li>Computers and Systems Engineering,</li> </ul>          |
|                         | Communications and Computer Engineering                         |
|                         |   |
| Department offering the | Electronics Engineering and Electrical                          |
| course                  | Communication.  |
|                         | Computers and Systems Engineering.                              |
|                         |   |

#### 2- Aim of the course

- 1. Learn the principles of atoms and atomic structure
- 2. Learn the **Energy Conversion** sourceses
- 3. Study and measurement of Fundamentals of Energy conversion, Photovoltaic Energy Conversion, Energy Conversion in Fuel Cells, Fuel and Combustion, Thermoelectric Power Generation, Magneto Hydrodynamic Power Generation, Thermo Ionic Power Generation, Electro Ionic Power Generation.
- 4. Learn the Electro Chemical Power Generation, Electromechanical Power Generation, Nuclear Power Generation, Illumination Engineering, Electric Traction Systems, Environmental Effects of Energy Resources.

|                       | A.1 Identify, formulate, Fundamentals of Energy conversion, .  |
|-----------------------|--|
| eral                  | A.2 Develop and conduct appropriate experimentation and/or Demonstrate Principles of Energy Conversion in Fuel Cells, Fuel and Combustion, Thermoelectric Power Generation,  |
| Level A – General     | 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.10 Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.   |
|                       | B.1 Select, model and analyze electrical power systems applicable to mathematical and computer-based methods for modeling and analyzing problems.  |
| ılity                 | 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.  |
| Level B - Speciality  | B.3 Design and implement elements Magneto Hydrodynamic Power<br>Generation, Thermo Ionic Power Generation, Electro Ionic Power<br>Generation   |
| Fev                   | B.4 Estimate and Electro Chemical Power Generation, Electromechanical Power Generation, Nuclear Power Generation, Illumination Engineering, Electric Traction Systems, Environmental Effects of Energy Resources   |
|                       | B.5 Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems, and services.   |
| 4- Course<br>Contents | Syllabus: Fundamentals of Energy conversion, Photovoltaic Energy Conversion, Energy Conversion in Fuel Cells, Fuel and Combustion, Thermoelectric Power Generation, Magneto Hydrodynamic Power Generation, Thermo Ionic Power Generation, Electro Ionic Power Generation, Electro Chemical Power Generation, Electromechanical Power Generation, Nuclear Power Generation, Illumination Engineering, Electric Traction Systems, Environmental Effects of Energy Resources. |
|                       | أساسيات تحويل الطاقة ، تحويل الطاقة الكهروضوئية ، تحويل الطاقة في خلايا<br>الوقود ، الوقود والاحتراق ، توليد الطاقة الكهروحرارية ، توليد الطاقة  |
|                       | الكهرومغناطيسية المغناطيسية ، توليد الطاقة الحرارية الأيونية ، توليد الطاقة الكهربائية الأيونية ، توليد الطاقة الكهربائية الكيميائية ، توليد الطاقة النووية هندسة الإضاءة ، أنظمة الجر الكهربائية ،  |
|                       | الخهروميكانيكيه ، نوليد الطاقة النووية هندسة الإصاءة ، انظمة الجر الكهربانية ، الأثار البيئية لموارد الطاقة.   |

| # Topic   | Lecture  | Tutorial/                                      | No of hours |  |  |  |  |  |  |
|---|--|--|-------------|--|--|--|--|--|--|
| Fundamentals of Energy conversion, Photovoltaic Energy Conversion,  | 6  | 6  | 12          |  |  |  |  |  |  |
| Energy Conversion in Fuel Cells, Fuel and Combustion, Thermoelectric Power Generation, Magneto Hydrodynamic Power Generation, Thermo Ionic Power Generation, Electro Ionic Power Generation | 6  | 6  | 12          |  |  |  |  |  |  |
| Electro Chemical Power Generation, Electromechanical Power Generation, Nuclear Power Generation,  | 8  | 8  | 16          |  |  |  |  |  |  |
| Illumination Engineering, Electric Traction Systems, Environmental Effects of Energy Resources.   | 8  | 8  | 16          |  |  |  |  |  |  |
| Total sum   | 28   | 28   | 56          |  |  |  |  |  |  |
| 5- Teaching and learning methods  | <ol> <li>Lecture (online/in class)</li> <li>Discussion</li> <li>Tutorial</li> <li>Problem solving</li> <li>Brain storming</li> <li>Projects</li> <li>Self-learning</li> <li>Research and Reporting</li> <li>Computer Simulation</li> <li>Teamwork</li> </ol> |  |             |  |  |  |  |  |  |
| 6- Teaching and learning methods for disable students   | 3. Using as ma   | res and assignments<br>ny audio/visual aids as |             |  |  |  |  |  |  |
| 7- Teaching and learning methods for low capacity students  | 3 , 1 , 1 , 1 , 1 , 1 , 1  |  |             |  |  |  |  |  |  |

| 8- Teaching and learning methods for outstanding students | <ol> <li>Assign course project tasks to those students.</li> <li>Give them advanced extra-curriculum topics.</li> <li>Encourage them to take part in a pilot research and case studies.</li> </ol> |
|---|--|
| 9- Students assessment                                    |  |
| a- Assessment<br>methods                                  | <ol> <li>Mid Term Examination (written/ online)</li> <li>Oral Examination</li> <li>Formative (quizzes- presentation -reports)</li> <li>Final Term Examination (written)</li> </ol>                 |
| 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 : 20 %  - Mid-term examination: 10 %  - Final – term examination: 70 %  Total 100 %   |
| 10- List of text books and re                             | eferences:   |
| a- Course notes   | There are lectures notes prepared in the form of a book  |
| b- Text books/ References                                 | R. Bailie, Energy Conversion Engineering, Addison - Wesley Publishing Company, Inc, 1983 A. R. Foster and R. L. Wright, Basic Nuclear Engineering, Allyn and Bacon, Inc, 1989.                     |
| c- Periodicals, Web sites<br>etc                          | https://www.khanacademy.org/science/electrical-engineering   |

| 11-Course contents – Course related program competencies   |      |     |     |      |       |          |          |     |     |  |
|--|------|-----|-----|------|-------|----------|----------|-----|-----|--|
|  | Leve | IA  |     |      | Level | l B      |          |     |     |  |
|  | A.1  | A.2 | A.3 | A.10 | B.1   | B.2      | B.3      | B.4 | B.5 |  |
| Fundamentals of Energy conversion, Photovoltaic Energy Conversion,   | 1    | 1   | 1   |      |       | 1        | <b>V</b> |     |     |  |
| Energy Conversion in Fuel Cells, Fuel and Combustion,<br>Thermoelectric Power Generation, Magneto Hydrodynamic<br>Power Generation, Thermo Ionic Power Generation, | 1    | 1   | 1   | 1    |       | <b>√</b> | 1        | 1   | 1   |  |

| Electro Ionic Power Generation   |   |   |   |   |   |   |   |          |          |
|--|---|---|---|---|---|---|---|----------|----------|
| Electro Chemical Power Generation, Electromechanical Power Generation, Nuclear Power Generation, |   | 1 | 1 | 1 |   |   |   | <b>√</b> | 1        |
| Illumination Engineering, Electric Traction Systems, Environmental Effects of Energy Resources.  | 1 | 1 | 1 | 1 | 1 | 1 | √ | √        | <b>√</b> |

| 12-Teaching and learning methods - Course related program competencies |      |     |     |      |       |     |     |     |     |  |
|--|------|-----|-----|------|-------|-----|-----|-----|-----|--|
|  | Leve | IA  |     |      | Level | В   |     |     |     |  |
|  | A.1  | A.2 | A.3 | A.10 | B.1   | B.2 | B.3 | B.4 | B.5 |  |
| Lecture (online/in class)  | 1    | 1   | 1   |      | 1     | 1   | 1   |     |     |  |
| Discussion   | 1    | 1   | 1   | 1    | 1     | 1   | 1   | 1   | 1   |  |
| Tutorial   |      | 1   | 1   |      | 1     |     |     | 1   | 1   |  |
| Problem solving  | 1    | 1   | 1   |      | 1     | 1   | 1   | 1   | 1   |  |
| Brain storming   | 1    | 1   | 1   |      | 1     | 1   | 1   | 1   | 1   |  |
| Projects   |      |     |     |      | 1     | 1   | 1   | 1   | 1   |  |
| Self-learning  | 1    | 1   | 1   | 1    | 1     | 1   | 1   | 1   | 1   |  |
| Research and Reporting   | 1    | 1   | 1   | 1    | 1     | 1   | 1   | 1   | 1   |  |
| Computer Simulation  | 1    | 1   | 1   |      | 1     | 1   | 1   | 1   | 1   |  |
| Teamwork   | 1    | 1   | 1   | 1    | 1     | 1   | 1   | 1   | 1   |  |

| 13- Assessment methods - Course related program competencies |                                    |     |     |         |     |     |     |     |     |
|--|------------------------------------|-----|-----|---------|-----|-----|-----|-----|-----|
| Assessment methods   | Course related program comptencies |     |     |         |     |     |     |     |     |
|  | Leve                               | ΙA  |     | Level B |     |     |     |     |     |
|  | A.1                                | A.2 | A.3 | A.10    | B.1 | B.2 | B.3 | B.4 | B.5 |
| Mid Term Examination (written/ online)                       | 1                                  | 1   | 1   |         |     | 1   | 1   |     |     |
| Practical Examination  |                                    |     |     |         |     |     |     |     |     |

| Oral Examination                           |   | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
|--|---|---|---|---|---|---|---|---|---|
| Formative (quizzes- presentation -reports) |   |   | 1 |   | 1 | 1 | 1 |   |   |
| Final Term Examination (written            | 1 | 1 | 1 |   | 1 | 1 | 1 | 1 | 1 |

Authorized from board of the department at 11/2/2023 Course coordinator:

Dr Saad Awad M. Abdelwahab

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            | Analysis & Research S   | kills  |  |
|-------------------------|---|--------|--|
| Course Code             | HUM 126   |        |  |
| Academic Year           | 2022-2023   |        |  |
| Coordinator             | Dr. Somaia Ahmed De   | esouky |  |
| Teaching Staff          | Dr. Somaia Ahmed Do   | esouky |  |
| Level                   | Level (1)   |        |  |
| Semester                | Second Term   |        |  |
| Number of Weekly        | Lecture   | 1      |  |
| Contact Hours           | Tutorial  | 2      |  |
|                         | Lab   | 0      |  |
| Department offering the | <ul> <li>Electronics and Communications Engineering,</li> </ul> |        |  |
| program                 | <ul> <li>Computers and Systems Engineering,</li> </ul>          |        |  |
|                         | Communications and Computer Engineering                         |        |  |
|                         |   |        |  |
| Department offering the | Basic Science   |        |  |
| course                  |   |        |  |
| 2 Aims of the service   |   |        |  |

#### 2- Aim of the course

- 1. Understand the fundamentals of Analysis Skills: Framework for analyzing engineering problems taking into account technical, economic, environmental, and ethical issues.
- 2. Role of creativity in the analysis. SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis for different alternatives.
- 3. Learn the principles of Phrase, title, domain, URL, and link search. Evaluating search results, choosing the appropriate search engine. Importance of evaluating the credibility of the different Web sites.

|   | A.1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.  |         |                    |             |  |  |
|---|--|---------|--------------------|-------------|--|--|
| General   | A.7. Function efficiently as an individual and as a member of .multi-disciplinary and multicultural teams.   |         |                    |             |  |  |
| Level A – General   | A.8. Communicate effective writing – with a range of an  |         | •                  |             |  |  |
|   | A.9.Use creative, innovative entrepreneurial and leaders new situations.   |         |                    | -           |  |  |
| Level B -<br>Speciality   |  |         |                    |             |  |  |
| Contents  | Analysis Skills: Framework for analyzing engineering problems taking into account technical, economic, environmental, and ethical issues. Phases of problem solving (Understanding the problem and formulating it, Solution plan, Implementation plan, Evaluation, and Revision). Role of creativity in the analysis. SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis for different alternatives. Detailed Cost - Benefit analysis and Risk analysis. Role of cooperation and team - work in analyzing large engineering problems. Importance of finding the relevant data, information, and knowledge. Search Skills: Basic Web search methods and how to formulate search engine queries using logical connectives (e.g. AND, OR, NOT). Phrase, title, domain, URL, and link search. Evaluating search results, choosing the appropriate search engine. Importance of evaluating the credibility of the different Web sites. |         |                    |             |  |  |
| # Topic   |  | Lecture | Tutorial/Practical | No of hours |  |  |
| Analysis Skills: Framework for analyzing engineering problems taking into account technical, economic, environmental, and ethical issues. Phases of problem solving |  | 3       | 6                  | 9           |  |  |
| - Phrase, title, domain, URL, and link search. Evaluating search results, choosing the appropriate search engine. Importance of                                     |  | 3       | 6                  | 9           |  |  |

| evaluating the credibility of the different Web                |  |                        |            |  |
|--|--|------------------------|------------|--|
| sites.   |  |                        |            |  |
| - Importance of finding the relevant data,                     | 2  | 4                      | 6          |  |
| information, and knowledge. Search Skills: ).                  | 2  | 4                      | 6          |  |
| Basic Web search methods and how to                            |  |                        |            |  |
| formulate search engine queries using logical                  | 2  | 4                      | 6          |  |
| connectives (e.g. AND, OR, NOT                                 |  |                        |            |  |
|  |  |                        |            |  |
| Role of creativity in the analysis.                            | 2  | 4                      | 6          |  |
|  |  |                        |            |  |
|  |  |                        |            |  |
| Understanding the problem and formulating it,                  |  |                        |            |  |
| Solution plan, Implementation plan, Evaluation, and Revision). | 2  | 4                      | 6          |  |
| and Revision).   |  |                        |            |  |
|  |  |                        |            |  |
| Total sum  | 14   | 28                     | 42         |  |
| 5- Teaching and learning methods                               |  | (online/in class)      |            |  |
|  | 2. Discuss 3. Tutorial   |                        |            |  |
|  | 4. Problen   |                        |            |  |
|  | 5. Brain storming  |                        |            |  |
|  | 6. Projects  |                        |            |  |
|  | 7. Self-learning   |                        |            |  |
|  | <ul><li>8. Research and Reporting</li><li>9. Computer Simulation</li></ul> |                        |            |  |
|  | 10. Teamwork   |                        |            |  |
| 6- Teaching and learning methods for disable                   | Additional Tutorials   |                        |            |  |
| students   |  | lectures and assignme  |            |  |
|  | _  | s many audio/visual ai | •          |  |
| 7- Teaching and learning methods for low                       | 4. Providing extra opportunities for practice                              |                        |            |  |
| capacity students  | Assign a portion of the office hours for those students and                |                        |            |  |
| cupacity students  | 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                               |                        |            |  |
| 8- Teaching and learning methods for                           | their performance  1. Assign course project tasks to those                 |                        |            |  |
| outstanding students   | student  |                        |            |  |
|  | Give them advanced extra-curriculum  |                        |            |  |
|  | topics.  |                        |            |  |
|  |  | age them to take part  | in a pilot |  |
|  | researc  | h and case studies.    |            |  |

| 9- Students assessment                 |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
| a- Assessment                          | Mid Term Examination (written/ online)   |  |  |  |  |  |
| methods                                | 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                        | - Class tutorial and quizzes : 10 %  |  |  |  |  |  |
| assessment                             | - 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              | ■ D. Newnan, T. Eshenbach, and J. Lavelle, Engineering Economic Analysis, Oxford University Press, 2011. |  |  |  |  |  |
| c- Periodicals, Web sites<br>etc       | ☐ G. R. Notess, Teaching Web Search Skills, Information Today Inc., 2004.                                |  |  |  |  |  |

| 11-Course contents – Course related program competencies   |     |     |      |     |  |  |
|--|-----|-----|------|-----|--|--|
|  |     | Lev | el A |     |  |  |
|  | A.1 | A.7 | A.8  | A.9 |  |  |
| Analysis Skills: Framework for analyzing engineering problems taking into account technical, economic, environmental, and ethical issues. Phases of problem solving                    | 1   |     |      | 1   |  |  |
| - Phrase, title, domain, URL, and link search. Evaluating search results, choosing the appropriate search engine. Importance of evaluating the credibility of the different Web sites. | 1   | 1   |      |     |  |  |

| - Importance of finding the relevant data, information, and knowledge. Search Skills: ).                         | 1 |   |   | 1 |
|--|---|---|---|---|
| Basic Web search methods and how to formulate search engine queries using logical connectives (e.g. AND, OR, NOT |   | 1 | 1 | 1 |
| Role of creativity in the analysis.  |   |   |   |   |
| Understanding the problem and formulating it, Solution plan, Implementation plan, Evaluation, and Revision).     |   |   | 1 |   |

| 12-Teaching and learning methods - Course related program competencies |     |         |     |     |  |
|--|-----|---------|-----|-----|--|
|  |     | Level A |     |     |  |
|  | A.1 | A.7     | A.8 | A.9 |  |
| Lecture (online/in class)  | 1   | 1       | 1   |     |  |
| Discussion   | 1   |         |     | 1   |  |
| Tutorial   | 1   |         | 1   | 1   |  |
| Problem solving  | 1   |         | 1   |     |  |
| Brain storming   | 1   | 1       | 1   |     |  |
| Projects   |     | 1       | 1   | 1   |  |
| Self-learning  | 1   |         |     | 1   |  |
| Research and Reporting   |     |         | 1   | 1   |  |
| Computer Simulation  |     |         |     |     |  |
| Teamwork   |     |         |     |     |  |

| 13- Assessment methods - Course related program competencies |  |  |  |  |   |  |  |
|--|--|--|--|--|---|--|--|
| Assessment methods Course related program comptencies        |  |  |  |  |   |  |  |
| Level A  |  |  |  |  |   |  |  |
| A.1 A.7 A.8 A.9  |  |  |  |  |   |  |  |
| Mid Term Examination (written/ online)                       |  |  |  |  | 1 |  |  |
| 2. Practical Examination                                     |  |  |  |  |   |  |  |

| 3. Oral Examination                           |   |   |          |
|---|---|---|----------|
| 4. Formative (quizzes- presentation -reports) | 1 | 1 | 1        |
| 5. Final Term Examination (written            | 7 |   | <b>√</b> |

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

Dr. Somaia Desouky



Ministerial Resolution 5053 - 12/10/2016

K 10, Bilbies - 10th of Ramadan



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

# Course Specification

### 1- Basic Information

| C TILL                | £                                       |                             |  |  |  |
|-----------------------|---|-----------------------------|--|--|--|
| Course Title          | ثقافة عامه اختياري أ                    |                             |  |  |  |
|                       | الحضارة العربية والاسلامية              |                             |  |  |  |
| <b>Course Code</b>    | 2A1 (X75)                               |                             |  |  |  |
| Academic Year         | 2022-2023                               |                             |  |  |  |
| Coordinator           | أ.د امين سعيد                           |                             |  |  |  |
| <b>Teaching Staff</b> | أ د امین سعید                           |                             |  |  |  |
| Level                 | Level (2)                               |                             |  |  |  |
| Semester              | First Term                              |                             |  |  |  |
| Number of Weekly      | Lecture                                 | 2                           |  |  |  |
| <b>Contact Hours</b>  | Tutorial                                | 0                           |  |  |  |
|                       | Lab                                     | 0                           |  |  |  |
| Department offering   | <ul> <li>Electronics and</li> </ul>     | Communications Engineering, |  |  |  |
| the program           | <ul> <li>Computers and</li> </ul>       | Systems Engineering,        |  |  |  |
|                       | Communications and Computer Engineering |                             |  |  |  |
|                       |   |                             |  |  |  |
| Department offering   | Humanities & Social So                  | iences                      |  |  |  |
| the course            |   |                             |  |  |  |
| 2 Aire of the course  |   |                             |  |  |  |

#### 2- Aim of the course

- 1. Learn the principles of errors in measurements, statistical analysis of errors in measurements, measurements of all electrical quantities
- 2. Learn the measurement of resistances and capacitors.
- 3. Learn the principles of multi-meter, the oscilloscope, signal generators.
- 4. Learn the measurements of time period and frequency, spectrum analyzers, logic analyzers, logic probe
- 1. Demonstrate the energy transducers (pressure, force, displacement, level, light, temperature, speed), a/d and d/a and applications, data acquisition cards.

|                         | • •  |         | e complex engineering pro<br>ence and mathematics. | oblems by applying  |  |  |
|-------------------------|--|---------|--|---|--|--|
| Level A – General       | interpret da   |         | ate findings, and use stati                        | or simulation, analyze and stical analyses and objective                  |  |  |
| Level                   | guidelines,  | -       | es, codes of practice and requirements, environme  |   |  |  |
| Level B -<br>Specialist |  |         |  |   |  |  |
| 4-<br>Course            | Syllabus:  |         |  |   |  |  |
| Contents                |  |         |  |   |  |  |
|                         | اسس الحضارة الاسلامية ( القران والسنة - الامة العربية - اللغه - الاطار الجغرافي -  |         |  |   |  |  |
|                         |  |         | , –  | الشعوب المفتوحة – التاثيرات الاج<br>) النظام الاداري ( الادارات المحلية   |  |  |
|                         | · ·  | ` •     | _  | ) انتظام الاداري ( الادارات المحلية<br>المالي ( موارد بيت المال – النفقات |  |  |
|                         | (  | 1 -     | - 1 1 - 1 -  | _ الأسطول) _ التعليم والثقافه ( الع                                       |  |  |
|                         | الفنون والاقار والعمارة – القضاؤ والتقاضى – المجتمع الاسلامى (عناصرة واجناسة – الطوانف الدينية والمذهبية) - البناء الطبقى: الحكام والفقهاء والعلماء والتجار واصحاب الحرف والصناعات |         |  |   |  |  |
|                         |  |         |  | الُخ.   |  |  |
|                         |  |         |  |   |  |  |
| # Topic                 |  | Lecture | Tutorial/Practical                                 | No of hours   |  |  |
| الاسلامية               | اسس الحضارة  |         |  |   |  |  |
| سنة - الامة             | ( القر ان و الد  |         |  |   |  |  |

| # Topic  | Lecture | Tutorial/Practical | No of hours |
|--|---------|--------------------|-------------|
| اسس الحضارة الاسلامية ( القران والسنة - الامة العربية - اللغه - الاطار الجغرافي - الشعوب المفتوحة - التثيرات الاجنبية)                             | 4       | 0                  | 0           |
|  | 6       | 0                  | 0           |
| النظام المالى ( موارد بيت المال<br>النفقات - السكة ) النظم<br>العسكرية ( الجيش وتكوينة<br>واسلحته واساليبه - الاسطول)<br>التعليم والثقافه ( العلوم | 8       | 0                  | 0           |

| Tatti. Neti to 11 To                      | 211                |   |             | 1 |  |  |
|---|--------------------|---|-------------|---|--|--|
| عية '' علم الكلام والفقة                  |                    |   |             |   |  |  |
| العلوم العقلية) – الفنون                  | – '' <b></b>       |   |             |   |  |  |
| والاقار والعمارة                          |                    |   |             |   |  |  |
| القضاؤ والتقاضي – المجتمع                 |                    |   |             |   |  |  |
| الاسلامي (عناصرة واجناسة _                |                    | 6   | 0           | 0 |  |  |
| طوائف الدينية والمذهبية)                  |                    |   |             |   |  |  |
|   |                    |   |             |   |  |  |
| اء الطبقى :                               |                    |   |             |   |  |  |
| الفقهاء                                   | ,                  |   |             |   |  |  |
| والتجار                                   | والعلماء           | _   |             |   |  |  |
| ب الحرف                                   | _                  | 4   | 0           | 0 |  |  |
| عاتالخ.                                   | والصناء            |   |             |   |  |  |
|   |                    |   |             |   |  |  |
|   |                    |   |             |   |  |  |
| Total sum                                 |                    | 28  | 0           | 0 |  |  |
| 5- Teaching and learning                  |                    | Lecture (onlin  | a/in alace) |   |  |  |
| methods                                   | iiig               | <ol> <li>Lecture (online/in class)</li> <li>Discussion</li> </ol>                 |             |   |  |  |
| methous                                   |                    | 3. Tutorial   |             |   |  |  |
|   | 4. Problem solving |   |             |   |  |  |
|   | 5. Brain storming  |   |             |   |  |  |
|   |                    | 6. Projects   |             |   |  |  |
|   |                    | 7. Self-learning  |             |   |  |  |
|   |                    | 8. Research and Reporting   |             |   |  |  |
|   |                    | 9. Computer Simulation  |             |   |  |  |
| 6 Taashing and laam                       |                    | 10. Teamwork  |             |   |  |  |
| 6- Teaching and learn methods for disable | ıırıg              | <ol> <li>Additional Tutorials</li> <li>Online lectures and assignments</li> </ol> |             |   |  |  |
|   |                    | Using as many audio/visual aids as possible.                                      |             |   |  |  |
| students                                  |                    | 4. Providing extra opportunities for practice                                     |             |   |  |  |
| 7- Teaching and learn                     | ning               | Assign a portion of the office hours for those students and                       |             |   |  |  |
| methods for low cap                       | _                  | provide them with specific tailored tasks.  |             |   |  |  |
| students                                  |                    | 2. Repeat the explanation of some of the material and tutorials.                  |             |   |  |  |
|   |                    | 3. Assign a teaching assistance to follow up their performance                    |             |   |  |  |
| 8- Teaching and learn                     | ning               | Assign course project tasks to those students.                                    |             |   |  |  |
| methods for outstan                       | ding               | 2. Give them advanced extra-curriculum topics.                                    |             |   |  |  |
| students                                  |                    | 3. Encourage them to take part in a pilot research and case studies.              |             |   |  |  |
| 9- Students assessment                    |                    |   |             |   |  |  |
| a- Assessment                             | 1. M               | Mid Term Examination (written/ online)  |             |   |  |  |
| methods                                   |                    | ractical Examination  |             |   |  |  |
|   | 3. O               | oral Examination  |             |   |  |  |
|   | 4. Fo              | ormative (quizzes- presentation -reports)   |             |   |  |  |
|   | 5. Fi              | Final Term Examination (written)  |             |   |  |  |

| b- Assessment          | - Exercise sheet/ Lab assignment :  | Weekly                                  |  |
|------------------------|---|---|--|
| schedule               | - 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        | - Class tutorial and quizzes :  | 10%                                     |  |
| assessment             | - Mid-term examination:   | 20 %                                    |  |
|                        | - Final – term examination:   | 70%                                     |  |
|                        |   | Total 100 %                             |  |
| 10- List of text books | and references:   |   |  |
| a- Course notes        | There are lectures notes prepar the department.                                     | red in the form of a book authorized by |  |
| b- Text books/         | احمد عبد الرزاق، الحضارة الاسلامية في العصور الوسطى، 2004                           |   |  |
| References             | <ul> <li>فتحية النيراوي، تاريخ النظم والحضارة الاسلامية، 1985</li> </ul>            |   |  |
|                        | <ul> <li>عبد المنعم ماجد، تاريخ الحضارة الاسلامية في العصور الوسطي، 1978</li> </ul> |   |  |
| 2c- Periodicals, Web   |   |   |  |
| sitesetc.              |   |   |  |

| 11-Course contents – Course related program competencies  |         |     |          |  |
|---|---------|-----|----------|--|
|   | Level A |     |          |  |
|   | A.1     | A.2 | A.4      |  |
| اسس الحضارة الاسلامية ( القران والسنة - الامة العربية - اللغه - الاطار الجغرافي - الشعوب المفتوحة - التاثيرات الاجنبية)   | 1       |     |          |  |
| - النظم السياسي ( الخلافة - الوزارة - الكتابة - الحجابة ) النظام الاداري ( الادارات المحلية - دواوين الجند والخراج والرسائل والبريدالخ.   | 1       | 1   |          |  |
| النظام المالى ( موارد بيت المال – النفقات - السكة ) النظم العسكرية ( الجيش وتكوينة واسلحته واساليبه – الاسطول) – التعليم والثقافه ( العلوم الشرعية '' علم الكلام والفقة'' – العلوم العقلية )<br>– الفنون والاقار والعمارة |         | 1   | <b>V</b> |  |
| القضاق والتقاضى — المجتمع الاسلامي ( عناصرة واجناسة — الطوائف الدينية والمذهبية)  | 1       | 1   | 1        |  |
| . )- البناء الطبقى: الحكام والفقهاء والعلماء والتجار واصحاب الحرف والصناعاتالخ.   |         |     | 1        |  |

| 12-Teaching and learning methods - Course related program competencies |   |          | Level A |  |  |
|--|---|----------|---------|--|--|
| Problem solving  | 1 | 1        | 1       |  |  |
| Brain storming   |   | <b>√</b> | 1       |  |  |
| Projects   |   | 7        | 1       |  |  |
| Self-learning  |   |          |         |  |  |
| Research and Reporting   |   |          |         |  |  |
| Computer Simulation  |   | 1        | 1       |  |  |
| Teamwork   |   |          |         |  |  |

| 13- Assessment methods - Course related pro |                                    |       |         |     |  |
|---|------------------------------------|-------|---------|-----|--|
| Assessment methods                          | Course related program comptencies |       |         |     |  |
|   |                                    | Level | Level A |     |  |
|   |                                    | A.1   | A.2     | A.4 |  |
| 1. Mid Term Examination (written/ online)   |                                    | 1     | 1       | 1   |  |
| 2. Practical Examination                    |                                    |       |         |     |  |
| 3. Oral Examination                         |                                    | 1     | 1       | 1   |  |
| 4. Formative (quizzes- presentation -repor  | ts)                                | 1     | 1       | 1   |  |
| 5. Final Term Examination (written          |                                    | 1     | 1       | 1   |  |

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

Prof. Amin Said Abd-Elghany

In Come

