**Ministry of Higher Education and Scientific Research**

**Supervision and Scientific Evaluation Body**

**Quality Assurance and Academic Accreditation Office**

**Course Description Sample**

**Subject:** Engineering Drawing

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| This course description provides a brief survey of the most important characteristics, expected learning output, showing whether students have made full use f the learning opportunities. These characteristics have to be matched with the description of the program. |

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| 1. Educational Institution | Shatt Al-Arab University College |
| 2. Department / Center | Medical Device Technology Engineering |
| 3. Course Title /Code | MIET1104/ Engineering Drawing |
| 4. Lecturer Name | Zahra kadhum farhood |
| 5. Type of Teaching | Attendance |
| 6. Academic Year /Term | Midterm |
| 7. Total No. of Teaching Hours | 125 hours / every week 6 hours |
| 8. Date f Preparing this Course Description | 15/11/2023 |

9. **Course Objectives**

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| a. Increasing engineering awareness using the basics of engineering drawing and the use of technology for drawing |
| b. Analyze shapes with the ability to determine the projections of binary and draw triangular shapes |

10. **Course Output, Methodology and Evaluation**

(A) **Cognitive Objectives**

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| A1- Knowing the basics of drawing and distinguishing the basic principles of the drawing process and the available dimensions. |
| A2- Solve and draw complex geometric and electronic shapes through the use of technology |
| A3- Understand the basic engineering principles of drawing tools |
| A4- Determining the projections of the binary |
| A 5- Distinguish the types of pieces and indicate how to draw them |

(B) **Skill Objectives Related to the Program**:

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| B1 - Identify complex problems in drawing and determine how to solve through the availability of tools |
| B2 - Applying mathematical analysis to draw different shapes using different measurements |
| B3 - Circuit analysis and interpretation to draw electronic circuits in a professional manner and print them using electronic circuit printers |
| B 4- Linking the theoretical aspect with discussions and how to use tools to extract unavailable forms that cannot be obtained within the geographical area |

**Methods of Teaching and Learning**

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| Study lectures  Discussions between different student groups about the application of theories  Establishing workshops and theoretical presentation on how to use the basics of drawing to draw simple and complex electrical and electronic circuits. Use of various means to increase understanding and clarification. Extra-curricular discussions and assignments to increase understanding of graphic examples and applications used in applications and electronic circuits |

**Methods of Evaluation**

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| Quarterly exams |
| Quizzes |
| Other extra-curricular exams |

(C) **Sentimental and Value Objectives**

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| C1- Enhancing thinking and planting moral responsibility for learning and thinking about a set of protective solutions to solve mathematical problems and how to analyze and draw electronic circuits with the possibility of printing them locally or externally |
| C2 - Develop a thinking strategy for the student to analyze binary drawings in different forms and transform them into triangular forms |
| C3 - Respect for self and the other through discussions aimed at improving drawing skills with full knowledge of the latest programs and their accessories in the process of drawing different shapes |
| C4- Developing modern engineering techniques and skills and tools necessary for practicing the engineering profession and trying to use available techniques to produce more modern forms. |

D) **General and Qualitative Skills (other skills related to the ability of employment and personal development)**

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| D 1- Communication skills and the correct delivery of information |
| D2 - Analysis and investigation to produce complex drawings using available tools |
| D 3- Using modern technology to draw electronic circuits |
| D4 - The importance of teamwork to produce what is required, as the goal is not achieved without the presence of an integrated team |

11. **Course Structure**

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| **Week** | **No of Hours** | **Required Learning Output** | **Title of Subject** | **Teaching Method** | **Evaluation** |
| 1 | 6 working hours per week | Introduction to Autodesk AutoCAD  • Starting the Software  • User Interface  • Working with Commands  • Cartesian Workspace  • Opening an Existing Drawing File  • Saving a Drawing File |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 2 |  | Basic Drawing & Editing Commands  • Drawing Lines  • Erasing Objects  • Drawing Lines with Polar Tracking  • Drawing Rectangles  • Drawing Circles  • Undo and Redo Actions |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 3 |  | Projects - Creating a Simple Drawing  • Create a Simple Drawing  • Create Simple Shapes |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 4 |  | Drawing Precision in AutoCAD  • Using Running Object Snaps  • Using Object Snap Overrides  • Polar Tracking at Angles  • Object Snap Tracking  • Drawing with Snap and Grid |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 5 |  | Making Changes in Your Drawing • Selecting Objects for Editing • Moving Objects • Copying Objects • Rotating Objects • Scaling Objects • Mirroring Objects • Editing with Grips |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 6 |  | Advanced Object Types  • Drawing Arcs  • Drawing Polylines  • Editing Polylines  • Drawing Polygons  • Drawing Ellipses |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 7 |  | Advanced Editing Commands  • Trimming and Extending Objects  • Stretching Objects  • Creating Fillets and Chamfers  • Offsetting Objects  • Creating Arrays of Objects |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 8 |  | Mid-term exam |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 9 |  | Adding Dimensions  •Dimensioning Concepts  •Adding Linear Dimensions  •Adding Radial and Angular Dimensions  •Editing Dimensions  Text  •Working with Annotations  •Adding Text in a Drawing  •Modifying Multiline Text  •Formatting Multiline Text  •Adding Notes with Leaders to Your Drawing |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 10 |  | Hatching •Hatching •Editing Hatches |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 11 |  | 3D modeling |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 12 |  | Convert 2D To 3D. |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 13 |  | Exercises drawing |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 14 |  | Printing Your Drawing  •Printing Layouts  •Print and Plot Settings |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |
| 15 |  | Preparatory week before the final Exam |  | Practical lectures | Assessment varies according to assessment methods; achievement test + class assignment |

12.**Infrastructure**

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| a. Textbooks | Mastering AutoCAD 2010 and AutoCAD LT 2010 1st Edition |
| b. References | AutoCAD 2010 Command Reference, AutoCAD tutorial 2011 |
| c. Recommended books and periodicals (journals, reports, etc.) |  |
| d. Electronic references, internet websites, etc | Getting Started with the Basics in AutoCAD 2017 |

13. **The Plan of Improving the Course**

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| اضافة مفردات للمناهج ضمن التطور الحاصل في المقرر وبنسبة ال تتجاوز 5% |
| إضافة مصادر جديدة وحديثة مع إضافة فيديوهات تشرح عملية الرسم |