



Republic of Yemen

Ministry of Higher Education & Scientific Research
Council of Academic Accreditation & Quality



Assurance of Higher Education (CAQA)

21 September University for medical and Applied Science

Faculty of Engineering and Computer
Department of Biomedical Engineering
Program of Biomedical Engineering

Course Specification of
Engineering Drawing
Course Code. (07.02.709)

2024



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:	Reviewed by:	Head of the Department:	Quality Unit:	Dean:
Dr. Adel Alkdsi	Dr. ----	Dr. Awadh Al-Kubati	Dr. Mohammed Al-shamahi	Dr. Abdulrahman Obaid

I. General Information:

1.	Course Title:	Engineering Drawing				
2.	Course Code:	07.02.709				
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial /Seminar	Lab	Clinical
		3	2	2	--	--
4.	Level/ Semester at which this Course is offered:	2 nd Level / 1 st Semester				
5.	Pre –Requisite (if any):	None				
6.	Co –Requisite (if any):	N/A				
7.	Program (s) in which the Course is Offered:	Bachelor of Biomedical Engineering				
8.	Language of Teaching the Course:	English/Arabic				
9.	Location of Teaching the Course:	Faculty of Medical Technology				
10.	Prepared by:	Dr. Adel Alkdsi				
11	Date and Number of Approval by Council:					

II. Course Description:

Introduction to Engineering Drawing. Sketching, type of lines, Scales, Engineering Construction and Geometry, Theory of Orthographic Projection, Pictorial drawing, Isometrics and Oblique. Drawing Sections, Working Drawing, Dimensioning and Introduction to computer Aided Drafting (AutoCAD). Applications cover details and drawings in all engineering areas.

III. Course Intended Learning Outcomes (CILOs) :
Upon successful completion of the course,

Referenced PILOs

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students will be able to:			
A. Knowledge and Understanding:		I, P or M/A	
a1	Demonstrate knowledge of industry-standard drawing conventions, symbols, and terminology.	I	A1
			Explain the appropriate models, theories, mathematical foundations, and techniques related to biomedical engineering technology context.
B. Intellectual Skills:			
b1	Utilize computer-aided design (CAD) software to produce detailed 2D engineering drawings, including layouts and assembly drawings.	P	B1
			Use the basic science, mathematical theories, engineering principles to analyze the problems of devices and/or processes relevant to biomedical engineering fields.
b4	Apply proper dimensioning and tolerancing techniques in drawings to ensure clarity and manufacturability.	P	B4
			Apply the principles of biomedical devices maintenance and its various methods to work professionally in biomedical engineering field.
C. Professional and Practical Skills:			
c1	Create accurate freehand sketches of engineering components, illustrating dimensions, tolerances, and annotations.	P	C1
			Relate integrally knowledge of life science, biomedical engineering technology practice concepts, principles of engineering and techniques evaluation to solve problems relevant to biomedical engineering.
c2	Evaluate drawings for accuracy, completeness, and adherence to standards, employing critical thinking and problem-solving skills.	P	C2
			Evaluate an engineering technique, modern analytical tools and required computer programs to analyzing and solve the problems of medical devices.
c3	Develop 3D models of engineering	P	C3
			Develop an engineering

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	designs using CAD software, understanding the transition from 2D to 3D representation.			approach, engineering equipment, instruments to maintenance and conduct experiments, and present results in the biomedical engineering practice.
D. Transferable Skills:				
d1	Work collaboratively on design projects, demonstrating effective communication and teamwork in a technical environment.	P	D1	Function effectively as an individual, team member, or leader in activities relevant to biomedical engineering, and collaborating to achieve a shared objective.
d2	Present technical drawings and models effectively, utilizing visual aids and clear explanations to convey design intent.	P	D3	Exhibit strong IT skills and communicate clearly, both verbally and in written technical reports.
I= Introduced, P=Practiced or M/A= Mastered/Advanced				

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:				
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies	
a1	Demonstrate knowledge of industry-standard drawing conventions, symbols, and terminology.	<ul style="list-style-type: none"> - Interactive lectures - Discussions - Self-learning 	<ul style="list-style-type: none"> - Final theoretical exam - Mid-term theoretical exam - Assignments assessment 	
(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:				
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies	
b1	Utilize computer-aided design (CAD) software to produce detailed 2D engineering drawings, including layouts and	<ul style="list-style-type: none"> - Interactive lectures - Exercises - Discussions - Problem-based learning - Computer lab sessions 	<ul style="list-style-type: none"> - Final theoretical exam - Mid-term theoretical exam 	
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	assembly drawings.		
b2	Apply proper dimensioning and tolerancing techniques in drawings to ensure clarity and manufacturability.	<ul style="list-style-type: none"> Self-learning 	<ul style="list-style-type: none"> Assignments assessment Home Work

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
c1	Create accurate freehand sketches of engineering components, illustrating dimensions, tolerances, and annotations.		
c2	Evaluate drawings for accuracy, completeness, and adherence to standards, employing critical thinking and problem-solving skills.	<ul style="list-style-type: none"> Exercises Discussions Problem-based learning Computer lab sessions Self-learning 	<ul style="list-style-type: none"> Assignments assessments Home Work
c3	Develop 3D models of engineering designs using CAD software, understanding the transition from 2D to 3D representation.		

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1	Work collaboratively on design projects, demonstrating effective communication and teamwork in a technical environment.	<ul style="list-style-type: none"> Projects presentation Collaborative problem-solving exercises 	<ul style="list-style-type: none"> Assignments assessments

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d2	Present technical drawings and models effectively, utilizing visual aids and clear explanations to convey design intent.		
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IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction to Engineering Drawing, Types of lines, and Scales	<ul style="list-style-type: none"> Overview of Engineering Drawing Types of Lines and Their Uses Understanding Scales in Drafting 	1	2	a1
2	Construction Geometry and Dimensioning	<ul style="list-style-type: none"> Basic Geometric Constructions Types of Dimensions Tolerancing and its Importance 	2,3	4	a1, b1
3	Theory of Orthographic Projection, Orthographic Views	<ul style="list-style-type: none"> Principles of Orthographic Projection Creating Orthographic Views Dimensioning Orthographic Views 	4	2	a1, b1, b2
4	Isometrics Drawing	<ul style="list-style-type: none"> Isometric Projection Techniques Isometric Drawing Conventions Creating Isometric Views 	5	2	b1, b2
5	Oblique Drawing	<ul style="list-style-type: none"> Understanding Oblique Projection Types of Oblique Drawings Creating Oblique Views 	6	2	a1, b1, c1
6	Mid-Term Theoretical Exam	<ul style="list-style-type: none"> All previous topics 	7	2	a1, b1, b2, c1
7	Sections	<ul style="list-style-type: none"> Types of Sections Drawing Section Views Understanding Sectioning Standards 	8,9	4	a1, b2, c1, c2
8	Working Drawing	<ul style="list-style-type: none"> Components of Working Drawings Standards for Working Drawings 	10,11	4	b2, c1, c2, c3

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
		– Annotations and Specifications			
9	The use of computer Aided Drafting (AutoCAD) to produce 2D and 3D detailed drawings.	<ul style="list-style-type: none"> – Introduction to AutoCAD – Creating 2D Drawings in AutoCAD – Creating 3D Models in AutoCAD 	12,13, 14	6	b1, b2, c1, c2, c3
10	Project Discussion	– Full Course Project	15	2	a1, b1, d1, d2
16	Final Theoretical Exam	– All topics.	16	2	a1, a2, b1, b2, c1
Number of Weeks /and Units Per Semester			16	32	

B. Practical Aspect (Lab/Clinical) (if any):

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	None			
2				
Number of Weeks /and Units Per Semester		14	28	

C. Tutorial Aspect (if any):

No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	<p>Introduction to Engineering Drawing, Types of Lines, and Scales:</p> <ul style="list-style-type: none"> - Introduction to Basic Drawing Tools - Practicing Different Types of Lines - Using Scales in Drawing: Hands-On 	1	2	a1, b1, b2, d1

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No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	Exercises			
2	Construction Geometry and Dimensioning: - Constructing Basic Geometric Shapes - Hands-On Dimensioning Practice - Applying Tolerances in Drawings	2	2	b2, c1, c2, d1
3	Theory of Orthographic Projection, Orthographic Views: - Drawing Orthographic Views from 3D Objects - Analyzing Existing Orthographic Drawings - Dimensioning Techniques for Orthographic Views	3	2	b1, b2, c1, c2, d2
4	Isometric Drawing: - Creating Isometric Sketches from Orthographic Views - Practice with Isometric Grids - Converting 2D Shapes to Isometric Drawings	4,5	4	b2, c1, c2, c3, d2
5	Oblique Drawing: - Techniques for Creating Oblique Drawings - Hands-On Practice with Different Oblique Projections - Comparing Oblique and Isometric Drawings	6,7	4	b1, c1, c2, c3, d1, d2
6	Sections: - Types of Sections and Their Applications - Drawing Section Views from Given Objects - Standardizing Sectioning Practices	8,9	4	b1, b2, c1, c2, d2
7	Working Drawing: - Elements of a Complete Working Drawing - Creating Bill of Materials and Annotations - Reviewing Examples of Working	10,11	4	b2, c2, c3, d1

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No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	Drawings			
8	<p>The Use of Computer Aided Drafting (AutoCAD) to Produce 2D and 3D Detailed Drawings:</p> <ul style="list-style-type: none"> - Getting Started with AutoCAD: Basic Tools - Hands-On Practice: Creating 2D Drawings - Advanced Techniques: 3D Modeling in AutoCAD 	12,13, 14	6	c1, c2, c3, d1, d2
Number of Weeks /and Units Per Semester		14	28	

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Assignment 1: Drawing Orthographic Views from 3D Objects	Week 4	5	a1, b1, c2
2	Assignment 2: Drawing Section Views from Given Objects	Week 9	5	a2, b2, d1
3	Assignment 3: 3D Modeling in AutoCAD	Week 15	5	c1, c2, d1
Total			15	

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Assignments & home works	Weeks 4, 8, 12	20	10%	a1, b1, b2, c1, c2, c3, d1, d2

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No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
2	Mid-Term Theoretical Exam	Week 9	10	10%	a1, b1, b2, c1
3	Final Theoretical Exam	Week 16	70	70%	a1, a2, b1, b2, c1
Total			100%	100%	-

IX. Learning Resources:

- *Written in the following order:* Author, Year of publication, Title, Edition, Place of publication, Publisher.

1- Required Textbook(s) (maximum two):

1. Technical Drawing- Fundamentals- CAD-Design, by Goetsch, Nelson, Chalk. ISBN 0-8273-3280-7.
2. Inside autoCAD 14, by Michael E. Beall, Bill Burchard, ISBN 0-340-72017-4

2- Essential References:

1. RK Dhawan, A Textbook of Engineering Drawing, S. Chand Publishing, 2019
2. David Madsen, Engineering Drawing and Design 6th Edition, Cengage Learning, 2016

3- Electronic Materials and Web Sites etc.:

Websites:

1. <https://www.skillshare.com/en/>
2. <https://www.draftinganddesign.com/>
3. <https://www.learn cad.com/lander>
4. <https://www.engineeringtoolbox.com/>

X. Course Policies: (Based on the Uniform Students' By law (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality:

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	No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

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Faculty of Medical Technology

Department of Biomedical Engineering

Program of Biomedical Engineering

Course Plan (Syllabus) of

Engineering Drawing

Course Code. (07.02.709)

I. Information about Faculty Member Responsible for the Course:							
Name of Faculty Member:		Office Hours					
Location & Telephone No.:							
E-mail:		SAT	SUN	MON	TUE	WED	THU

2024/2025

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II. Course Identification and General Information:

11.	Course Title:	Engineering Drawing				
12.	Course Code:	07.02.709				
13.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial /Seminar	Lab	Clinical
		3	2	2	--	--
14.	Level/ Semester at which this Course is offered:	2nd Level / 1st Semester				
15.	Pre –Requisite (if any):	None				
16.	Co –Requisite (if any):	N/A				
17.	Program (s) in which the Course is Offered:	Bachelor of Biomedical Engineering				
18.	Language of Teaching the Course:	English/Arabic				
19.	Location of Teaching the Course:	Faculty of Medical Technology				
20.	Prepared by:	Dr. Adel Alkdsi				
11	Date and Number of Approval by Council:					

III. Course Description:

Introduction to Engineering Drawing. Sketching, type of lines, Scales, Engineering Construction and Geometry, Theory of Orthographic Projection, Pictorial drawing, Isometrics and Oblique. Drawing Sections, Working Drawing, Dimensioning and Introduction to computer Aided Drafting (AutoCAD). Applications cover details and drawings in all engineering areas.

IV. Course Intended Learning Outcomes (CILOs) :

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Upon successful completion of the Course, student will be able to:

A. Knowledge and Understanding:

a1

Demonstrate knowledge of industry-standard drawing conventions, symbols, and terminology.

B. Intellectual Skills:

A. Knowledge and Understanding:

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Demonstrate knowledge of industry-standard drawing conventions, symbols, and terminology.

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Utilize computer-aided design (CAD) software to produce detailed 2D engineering drawings, including layouts and assembly drawings.

b
4

Apply proper dimensioning and tolerancing techniques in drawings to ensure clarity and manufacturability.

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A. Knowledge and Understanding:	
a1	Demonstrate knowledge of industry-standard drawing conventions, symbols, and terminology.

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Engineering Drawing, Types of lines, and Scales	<ul style="list-style-type: none"> – Overview of Engineering Drawing – Types of Lines and Their Uses – Understanding Scales in Drafting 	1	2
2	Construction Geometry and Dimensioning	<ul style="list-style-type: none"> – Basic Geometric Constructions – Types of Dimensions – Tolerancing and its Importance 	2,3	4
3	Theory of Orthographic Projection, Orthographic Views	<ul style="list-style-type: none"> – Principles of Orthographic Projection – Creating Orthographic Views – Dimensioning Orthographic Views 	4	2
4	Isometrics Drawing	<ul style="list-style-type: none"> – Isometric Projection Techniques – Isometric Drawing Conventions – Creating Isometric Views 	5	2
5	Oblique Drawing	<ul style="list-style-type: none"> – Understanding Oblique Projection – Types of Oblique Drawings – Creating Oblique Views 	6	2
6	Mid-Term Theoretical Exam	<ul style="list-style-type: none"> – All previous topics 	7	2
7	Sections	<ul style="list-style-type: none"> – Types of Sections – Drawing Section Views – Understanding Sectioning Standards 	8,9	4
8	Working Drawing	<ul style="list-style-type: none"> – Components of Working Drawings – Standards for Working Drawings – Annotations and Specifications 	10,11	4
9	The use of computer Aided Drafting (AutoCAD) to produce 2D and	<ul style="list-style-type: none"> – Introduction to AutoCAD – Creating 2D Drawings in AutoCAD – Creating 3D Models in AutoCAD 	12,13, 14	6

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
	3D detailed drawings.			
10	Project Discussion	– Full Course Project	15	2
16	Final Theoretical Exam	– All topics.	16	2
Number of Weeks /and Units Per Semester			16	32

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Engineering Drawing, Types of lines, and Scales	– Overview of Engineering Drawing – Types of Lines and Their Uses – Understanding Scales in Drafting	1	2
2	Construction Geometry and Dimensioning	– Basic Geometric Constructions – Types of Dimensions – Tolerancing and its Importance	2,3	4
3	Theory of Orthographic Projection, Orthographic Views	– Principles of Orthographic Projection – Creating Orthographic Views – Dimensioning Orthographic Views	4	2
4	Isometrics Drawing	– Isometric Projection Techniques – Isometric Drawing Conventions – Creating Isometric Views	5	2
5	Oblique Drawing	– Understanding Oblique Projection – Types of Oblique Drawings – Creating Oblique Views	6	2
6	Mid-Term Theoretical Exam	– All previous topics	7	2
7	Sections	– Types of Sections – Drawing Section Views – Understanding Sectioning Standards	8,9	4
8	Working Drawing	– Components of Working Drawings – Standards for Working Drawings – Annotations and Specifications	10,11	4
9	The use of computer Aided	– Introduction to AutoCAD – Creating 2D Drawings in AutoCAD	12,13, 14	6

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
	Drafting (AutoCAD) to produce 2D and 3D detailed drawings.	– Creating 3D Models in AutoCAD		
10	Project Discussion	– Full Course Project	15	2
16	Final Theoretical Exam	– All topics.	16	2
Number of Weeks /and Units Per Semester			16	32
No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Engineering Drawing, Types of lines, and Scales	– Overview of Engineering Drawing – Types of Lines and Their Uses – Understanding Scales in Drafting	1	2
2	Construction Geometry and Dimensioning	– Basic Geometric Constructions – Types of Dimensions – Tolerancing and its Importance	2,3	4
3	Theory of Orthographic Projection, Orthographic Views	– Principles of Orthographic Projection – Creating Orthographic Views – Dimensioning Orthographic Views	4	2
4	Isometrics Drawing	– Isometric Projection Techniques – Isometric Drawing Conventions – Creating Isometric Views	5	2
5	Oblique Drawing	– Understanding Oblique Projection – Types of Oblique Drawings – Creating Oblique Views	6	2
6	Mid-Term Theoretical Exam	– All previous topics	7	2
7	Sections	– Types of Sections – Drawing Section Views – Understanding Sectioning Standards	8,9	4
8	Working Drawing	– Components of Working Drawings – Standards for Working Drawings – Annotations and Specifications	10,11	4

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No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
9	The use of computer Aided Drafting (AutoCAD) to produce 2D and 3D detailed drawings.	<ul style="list-style-type: none"> – Introduction to AutoCAD – Creating 2D Drawings in AutoCAD – Creating 3D Models in AutoCAD 	12,13, 14	6
10	Project Discussion	– Full Course Project	15	2
16	Final Theoretical Exam	– All topics.	16	2
Number of Weeks /and Units Per Semester			16	32

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	None		
2			
Number of Weeks /and Units Per Semester		14	28

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	None		
2			
Number of Weeks /and Units Per Semester		14	28

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	None		
2			

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No.	Tasks/ Experiments	Number of Weeks	Contact Hours
Number of Weeks /and Units Per Semester		14	28

C. Tutorial Aspect:

No.	Tutorial	Number of Weeks	Contact Hours
1	Introduction to Engineering Drawing, Types of Lines, and Scales: - Introduction to Basic Drawing Tools - Practicing Different Types of Lines - Using Scales in Drawing: Hands-On Exercises	1	2
2	Construction Geometry and Dimensioning: - Constructing Basic Geometric Shapes - Hands-On Dimensioning Practice - Applying Tolerances in Drawings	2	2
3	Theory of Orthographic Projection, Orthographic Views: - Drawing Orthographic Views from 3D Objects - Analyzing Existing Orthographic Drawings - Dimensioning Techniques for Orthographic Views	3	2
4	Isometric Drawing: - Creating Isometric Sketches from Orthographic Views - Practice with Isometric Grids - Converting 2D Shapes to Isometric Drawings	4,5	4
5	Oblique Drawing: - Techniques for Creating Oblique Drawings - Hands-On Practice with Different Oblique Projections - Comparing Oblique and Isometric Drawings	6,7	4
6	Sections: - Types of Sections and Their Applications - Drawing Section Views from Given Objects - Standardizing Sectioning Practices	8,9	4

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No.	Tutorial	Number of Weeks	Contact Hours
7	Working Drawing: - Elements of a Complete Working Drawing - Creating Bill of Materials and Annotations - Reviewing Examples of Working Drawings	10,11	4
8	The Use of Computer Aided Drafting (AutoCAD) to Produce 2D and 3D Detailed Drawings: - Getting Started with AutoCAD: Basic Tools - Hands-On Practice: Creating 2D Drawings - Advanced Techniques: 3D Modeling in AutoCAD	12,13, 14	6
Number of Weeks /and Units Per Semester		14	28

VI. Teaching Strategies of the Course:

- Interactive lectures
- Discussions
- Exercises
- Discussions
- Problem-based learning
- Computer lab sessions
- Self-learning

VII. Assessment Methods of the Course:

- Final theoretical exam
- Mid-term theoretical exam
- Assignments assessment
- Home Work

VIII. Assignments:

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No.	Assignments	Week Due	Mark	A l i g n e d C I L C s (s y n b o l s)
1	Assignment 1: Drawing Orthographic Views from 3D Objects	Week 4	5	a 1 , b 1 , c 2
2	Assignment 2: Drawing Section Views from Given Objects	Week 9	5	a 2 , b 2 , d 1
3	Assignment 3: 3D Modeling in AutoCAD	Week 15	5	c 1 , c 2 , d 1

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No.	Assignments	Week Due	Mark	Al i g n e d C I L L O S (s y n b o l s)
Total			15	

IX. Schedule of Assessment Tasks for Students During the Semester:

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No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Courses Learning Outcomes
1	Assignments & home works	Weeks 4, 8, 12	20	10%	a1, b1, b2, c1, c2, c3, d

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No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Courses Learning Outcomes
					1, 2
2	Mid-Term Theoretical Exam	Week 9	10	10%	a1, b1, b2, c1
3	Final Theoretical Exam	Week 16	70	70%	a1,

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No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
					a2, b1, b2, c1
Total			100%	100%	-

X. Learning Resources:

- *Written in the following order:* Author, Year of publication, Title, Edition, Place of publication, Publisher.

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1- Required Textbook(s) (maximum two):
<ol style="list-style-type: none"> 1. Technical Drawing- Fundamentals- CAD-Design, by Goetsch, Nelson, Chalk.ISBN 0-8273-3280-7. 2. Inside autoCAD 14, by Michael E. Beall, Bill Burchard, ISBN 0-340-72017-4
2- Essential References:
<ol style="list-style-type: none"> 1. RK Dhawan, A Textbook of Engineering Drawing, S. Chand Publishing, 2019 2. David Madsen, Engineering Drawing and Design 6th Edition, Cengage Learning, 2016
3- Electronic Materials and Web Sites etc.:
Websites: <ol style="list-style-type: none"> 1. https://www.skillshare.com/en/ 2. https://www.draftinganddesign.com/ 3. https://www.learncad.com/lander 4. https://www.engineeringtoolbox.com/

XI. Course Policies: (Based on the Uniform Students' Bylaw (2007))

X. Course Policies: (Based on the Uniform Students' By law (2007))	
1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties

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	stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

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