1- Course Specification of Descriptive Geometry

I. Course Identification and General Information:

1	**Course Title:**	*Descriptive Geometry*				
2	**Course Code & Number:**	BR004				
3	**Credit hours:**	C.H				Credit Hours
		Th.	Tu.	Pr.	Tr.	
		2		2		3
4	**Study level/ semester at which this course is offered:**	1st Level/1st Semester				
5	**Pre –requisite (if any):**	NIL				
6	**Co –requisite (if any):**	NIL				
8	**Program (s) in which the course is offered:**	Civil Engineering				
9	**Language of teaching the course:**	English/Arabic				
10	**Location of teaching the course:**	Engineering Drawing Hall				
11	**Prepared By:**	Dr. Hamoud Al-Nahary Dr. Adel Al-Shakiri				
12	**Date of Approval**					

II. Course Description:

   This Course is one of the basic courses which is important for Student at beginning level of study. It improves the imaginary ability of Student to help him to be able to understand and recognize the different tiles of any engineering object on the engineering sheet. It is a comprehensive study of the graphical solutions to problems, involving the following: orthographic projection, points and lines in a space, auxiliary views, planes, parallel and perpendicular lines, intersecting and nonintersecting lines, piercing points, revolutions and the development of surfaces for pattern layout.

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III. Course Intended learning outcomes (CILOs) of the course		Referenced PILOs
a.1	Demonstrate an elementary understanding of engineering and drafting department practices.	A1
a.2	Demonstrate proficiency in the use of engineering scales (measurement).	A1
a.3	Define the alphabet of lines and demonstrate their use and properties in construction the orthographic projection.	A1
b.1	Demonstrate competence in identifying and understanding the Multiview drawing (orthographic projection).	B1
b.2	Demonstrate proficiency in the use of vertical Gothic upper- and lower-case lettering.	
b.3	Identify with practical proficiency the position of points and lines in space.	
b.4	Demonstrate an understanding and practical proficiency in visualization of parallel and perpendicular lines.	
c.1	Apply of primary and secondary auxiliary views to construct the position of points and lines in space.	C2
c.2	Draw the geometric solids into flat patterns.	C2
c.3	Apply practical consideration in determining the true size and shape of planes and their visibility.	C3
d1	Share home works and assignment with classmate to realize the importance of individual and group work.	D3
d2	Integrate itself using different communication skills	D1

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(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:

Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1- Demonstrate an elementary understanding of engineering and drafting department practices	- Active lectures - Tutorials - Interactive class discussions	- Mid and final Terms - Homework and assignment
a2- Demonstrate proficiency in the use of engineering scales (measurement)		
a3- Define the alphabet of lines and demonstrate their use and properties in construction the orthographic projection.		

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:

Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b.1- Demonstrate competence in identifying and understanding the Multiview drawing (orthographic projection)	- Active lectures - Tutorials - Class work	- Mid and final Terms - Homework and assignment
b.2- Demonstrate an understanding and practical proficiency in visualization of parallel and perpendicular lines	- Active lectures - Tutorials - Class work	- Mid and final Terms - Homework and assignment
b.3- Identify and with practical proficiency the position of points and lines in space	- Active lectures - Tutorials - Class work	- Mid and final Terms - Homework and assignment
b.4-Demonstrate proficiency in the use of vertical Gothic upper- and lower-case lettering	- Active lectures - Tutorials - Class work	- Mid and final Terms - Homework and assignment

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C Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c.1- Apply of primary and secondary auxiliary views to construct the position of points and lines in space	- Active Lecture - Presentations - Tutorial - Class work	- Class work - Home work - Small assignment - Mid term - Final term
c.2- Draw the geometric solids into flat patterns. **c.3**-Apply practical consideration in determining the true size and shape of planes and their visibility	- Active Lecture - Presentations - Tutorial	- Class work - Home work - Small assignment

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1- Share home works and assignment with classmate to realize the importance of individual and group work	- Class work	- Home work - Small assignment

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	IV. Course Content:				
	A – Theoretical Aspect:				
Order	**Units/Topics List**	**Learning Outcomes**	**Sub Topics List**	**Number of Weeks**	**contact hours**
1	Projections of points and lines	a1, a2, a3, b1, b2, c1, c2, d1	- 1st, 2nd, 3rd, and 4th Angle Projection - Projection of Lines, Angles made by lines with the reference planes. - Trace of Lines. - Procedure of locating the HT and VT.	2	4
2	Projections of Auxiliary Reference Planes	a1, a2, a3, b1, b2, c1, c2, d1	- Projection of a point on AVP and AIP. - Procedure of drawing AFV and ATV.	3	6
3	Projections of Planes	a1, a2, a3, b1, b2, c1, d1	- Projection of Planes parallel to VP and HP. - Projection of Planes perpendicular to VP and HP.	2	4
4	Projections of Planes	a1, a2, a3, b1, b2, c1, d1	- Projection of Planes parallel to VP and HP. Projection of Planes perpendicular to VP and HP.	1	2
5	Projections of Solids	a1, a2, a3, b1, b2, c1, c2, d1	- Orthographic Projection of Solids. - Projection of Solids having axis perpendicular to one of the reference planes - Projection of Solids having axis parallel to one of the reference planes - Visibility of surfaces. - Projection of Solids having axis inclined to one of the reference planes.	3	6

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6	Section of Solids	a1, a2, a3, b1, b2, c1, c2, d1	- Cutting planes. - Drawing of Section and Sectional Planes.	3	6
Number of Weeks /and Units Per Semester				**14**	**28**

B - Practical Aspect:

Order	Tasks/ Experiments	Number of Weeks	contact hours	Learning Outcomes
1	Projections of points and lines	2	**4**	a1, a2, a3, b1, b2, c1, c2, d1
2	Projections of Auxiliary Reference Planes	3	**6**	a1, a2, a3, b1, b2, c1, c2, d1
3	Projections of Planes	3	**6**	a1, a2, a3, b1, b2, c1, c2, d1
4	Projections of Solids	3	**6**	a1, a2, a3, b1, b2, c1, c2, d1
5	Section of Solids	3	**6**	a1, a2, a3, b1, b2, c1, c2, d1
Number of Weeks /and Units Per Semester		**14**	**28**	

V. Teaching strategies of the course:

Active Lecture
Presentations
Tutorial
Case Study
Tutorial

VI. Assignments:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Projections of points and lines	a1-a2-b1-b2-b3-c1-c3	2	3

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2	Projections of Auxiliary Reference Planes	a1-a2-b1-b2-b3-c1-c3	3	3
3	Projections of Planes	a1-a2-b1-b2-b3-c1-c3	4	3
4	Projections of Solids	a1-a2-b1-b2-b3-c1-c3	5	3
5	Section of Solids	b1-b2-b3-b4-c1-c2-c3-d1, d2, d3	6	3

VII.	Schedule of Assessment Tasks for Students During the Semester:				
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Written assignment	2-3-4-5-6-11	15	10	a1-a2-b1-b2-b3-c1-c3-d1
2	Quizzes.	8, 9	15	10	b3-c1
3	Mid-term exam.	7th	30	20	a1-a2-b1-b2-b3-c1-c3
4	Final-exam.	13	90	60	a1-a2-b1-b2-b3-c1-c3
	Sum		150	100%	

VIII.   Learning Resources:

- Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).

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

1- M. B. Shah, B. C. Rana, 2009 Engineering Drawing, 2nd Edition, India, Dorling Kindersley

2- Essential References.

1- S.P. Burkova, G.F. Vinokurova, R.G. Dolotova; Tomsk: Descriptive geometry: Exercise-book
TPU Press. 2013. – 66 c.

3- Electronic Materials and Web Sites *etc*.

1-https://www.academia.edu/14166710/Descriptive_Geometry_Books_Pdf_DESCRIPTIVE

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_GEOMETRY_BOOKS_PDF
2-https://www.scribd.com/doc/304333938/Graphic-Science-Engineering-Drawing-
Descriptive-Geometry-Graphical-Solutions
3-https://www.degruyter.com/viewbooktoc/product/253452

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	IX. Course Policies:
Unless otherwise stated, the normal course administration policies and rules of the Faculty of Engineering apply. For the policy, see: -------------------------------------	
1	**Class Attendance:** The students should have more than 75 % of attendance according to rules and regulations of the faculty.
2	**Tardy:** The students should respect the timing of attending the lectures. They should attend within 1 minutes from starting of the lecture.
3	**Exam Attendance/Punctuality:** The student should attend the exam on time. The punctuality should be implemented according to rules and regulations of the faculty for midterm exam and final exam.
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6	**Plagiarism:** The student will be terminated from the Faculty, if one student attends the exam on another behalf according to the policy, rules and regulations of the university.
7	**Other policies:** - All the teaching materials should be kept out the examination hall. - The mobile phone is not allowed. -There should be a respect between the student and his teacher.

Reviewed By	**Vice Dean for Academic Affairs and Post Graduate Studies** **Dr. Tarek A. Barakat** **Dr. Mohammed Al-olofi** **Dr. Mohammad Algorafi**
	Deputy Rector for Academic Affairs Dr. Ibrahim AlMutaa **Dr. Ahmed mujahed** **Dr. Munaser Alsubri**

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Template for Course Plan (Syllabus) of Descriptive Geometry

I. - Information about Faculty Member Responsible for the Course:							
Name of Faculty Member	Dr. Hamoud Al-Nahary Dr. Al-Shakiri Adel Ahmed	**Office Hours**					
Location& Telephone No.	Faculty of Engineering	SAT	SUN	MON	TUE	WED	THU
E-mail	ashakri62@gmail.com	12-2		12-2			

II. Course Identification and General Information:

1-	**Course Title:**	*Descriptive Geometry*				
2-	**Course Number & Code:**	BR004				
3-	**Credit hours:**	**C.H**				**Credit Hours**
		Th.	**Tu.**	**Pr.**	**Tr.**	
		2	-	2		3
4-	**Study level/year at which this course is offered:**	1st Level/1st Semester				
5-	**Pre –requisite (if any):**	NIL				
6-	**Co –requisite (if any):**	NIL				
7-	**Program (s) in which the course is offered**	Civil Engineering				
8-	**Language of teaching the course:**	English/Arabic				
9-	**System of Study:**	Semester				
10-	**Mode of delivery:**					
11-	**Location of teaching the course:**	Engineering Drawing Hall				

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III.   Course Description:

This Course is one of the basic courses which is important for Student at beginning level of study. It improves the imaginary ability of Student to help him to be able to understand and recognize the different tiles of any engineering object on the engineering sheet. It is a comprehensive study of the graphical solutions to problems, involving the following: orthographic projection, points and lines in a space, auxiliary views, planes, parallel and perpendicular lines, intersecting and nonintersecting lines, piercing points, revolutions and the development of surfaces for pattern layout.

IV.   Intended learning outcomes (ILOs) of the course:

- Brief summary of the knowledge or skill the course is intended to develop:

a.1 Demonstrate an elementary understanding of engineering and drafting department practices.   A1

a.2 Demonstrate proficiency in the use of engineering scales (measurement).   A1

a.3 Define the alphabet of lines and demonstrate their use and properties in construction the orthographic projection.   A1

b.1 Demonstrate competence in identifying and understanding the Multiview drawing (orthographic projection).   B1

b.2 Demonstrate proficiency in the use of vertical Gothic upper- and lower-case lettering.   B1

b.3 Identify with practical proficiency the position of points and lines in space. B1

b.4 Demonstrate an understanding and practical proficiency in visualization of parallel and perpendicular lines.   B1

c.1 Apply of primary and secondary auxiliary views to construct the position of points and lines in space. C2

c.2 Draw the geometric solids into flat patterns. C2

c.3 Apply practical consideration in determining the true size and shape of planes and their visibility.   C3

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d.1 Share home works and assignment with classmate to realize the importance of individual and group work.   D3

d.2 Integrate itself using different communication skills   D1

V. Course Content:
•   Distribution of Semester Weekly Plan Of course Topics/Items and Activities.
A – Theoretical Aspect:

Order	Topics List	Sub Topics List	Week Due	Contact Hours
1	Projections of points and lines	- 1st, 2nd, 3rd, and 4th Angle Projection - Projection of Lines, Angles made by lines with the reference planes. - Trace of Lines. Procedure of locating the HT and VT.	1,2	4
2	Projections of Auxiliary Reference Planes	- Projection of a point on AVP and AIP. Procedure of drawing AFV and ATV.	3,4,5	6
3	Projections of Planes	- Projection of Planes parallel to VP and HP. -Projection of Planes perpendicular to VP and HP.	6,7	6
4	Projections of Planes	- Projection of Planes parallel to VP and HP. -Projection of Planes perpendicular to VP and HP.	9	2
5	Projections of Solids	- Orthographic Projection of Solids. - Projection of Solids having axis perpendicular to one of the reference planes - Projection of Solids having axis parallel to one of the reference planes - Visibility of surfaces.	10,11,12	6

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		Projection of Solids having axis inclined to one of the reference planes.		
6	Section of Solids	- Cutting planes. Drawing of Section and Sectional Planes.	13,14,15	6
Number of Weeks /and Units Per Semester			**14**	**28**

B – Practical Aspect:

Order	Topics List	Week Due	Contact Hours
1	Projections of points and lines	1,2	4
2	Projections of Auxiliary Reference Planes	3,4,5	6
3	Projections of Planes	6,7,8	6
4	Projections of Solids	9,10,11	6
5	Section of Solids	12,13,14	6
Number of Weeks /and Units Per Semester		**14**	**28**

VI. Teaching strategies of the course:

- Active Lecture
- Presentations
- Tutorial
- Case Study
- Tutorial

VII. Assignments:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Projections of points and lines	a1-a2-b1-b2-b3-c1-c3	2	3
2	Projections of Auxiliary Reference Planes	a1-a2-b1-b2-b3-c1-c3	3	3
3	Projections of Planes	a1-a2-b1-b2-b3-c1-c3	4	3

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4	Projections of Solids	a1-a2-b1-b2-b3-c1-c3	5	3
5	Section of Solids	b1-b2-b3-b4-c1-c2-c3-d1, d2, d3	6	3

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

Assessment	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	Written assignment	2-3-4-5-6-11	15	10
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Sum			**150**	**100%**

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1-https://www.academia.edu/14166710/Descriptive_Geometry_Books_Pdf_DESCRIPTIVE
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2-https://www.scribd.com/doc/304333938/Graphic-Science-Engineering-Drawing-
Descriptive-Geometry-Graphical-Solutions
3-https://www.degruyter.com/viewbooktoc/product/253452

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