

2023/24 ANNUAL TEACHING PLANS: ENGINEERING GRAPHICS AND DESIGN (EGD): GRADE 10 (TERM 1)

TERM 1	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	
CAPS TOPIC	CLASSROOM ADMIN	EGD INTRO	GENERAL DRAWING PRINCIPLES	FREEHAND DRAWINGS	SET UP DRAW. SHEET	GEOMETRICAL CONSTRUCTION				SCALE	PAT	
PRESCRIBED CONCEPTS, CONTENT & SKILLS	All administrative and classroom managerial structures must be put in place and the teachers' EGD files as well as all the learners' EGD files must be prepared for use throughout the year	The scope, educational and career opportunities Include human rights, gender, inclusivity HIV/AIDS issues	<ul style="list-style-type: none"> The correct use and care of drawing instruments The dangers of sharp instruments Relevant line types as contained in the GUIDELINES for EGD PENCIL LINE-WORK General lettering (writing) requirements as contained in the SANS (SABS) 0111 & 0143 General dimensioning requirements as contained in the SANS (SABS) 0111 & 0143 	Introduce, practice and apply the basic hand movements needed to draw proportional single, multi view and pictorial drawings on plain paper and/or grid sheets	A4 and A3 sized drawing sheets with borders and basic name/title blocks	<ul style="list-style-type: none"> Practice and apply the following constructions: bisecting lines and angles, perpendicular lines, angles, dividing a line, a circle through three points, circle divisions, inscribed and circumscribed circle to triangles, fillets, tangents, convex and concave tangential arcs Construct regular polygons with 3, 4, 5, 6 & 8 sides. Determine the centre of the polygons Construction of an Ellipse by using at least TWO different construction methods. 				<ul style="list-style-type: none"> Practice and apply different scales, e.g., 5:1, 2:1, 1:2, 1:25, 1:50, 1:75, 1:100 etc. The application of any scale to all types of drawing 	<ul style="list-style-type: none"> The Design process: <ul style="list-style-type: none"> Problem identification, and formulate design brief with specs and constraints Conducting research and generating graphical ideas Selecting the best solution Presenting final solution as working and 3D drawings Evaluation of the entire process PAT scenarios given to learners and explained/discussed 	
REQUISITE PRE-KNOWLEDGE	N/A	N/A	<ul style="list-style-type: none"> The basic drawing instruments Basic dimensioning techniques 	An understanding of the difference between sketching and drawing	The general drawing principles	Relevant line types as contained in the guidelines for EGD pencil line-work				Understanding of scales	The technological process	
RESOURCES, OTHER THAN TEXTBOOKS & DRAWING INSTRUMENTS	Files/folders, own rules, own notes		<ul style="list-style-type: none"> LTSM: Own complaint notes, previous exam/test questions on specific topic/content, compliant content from TD textbooks, relevant models/ physical examples ICT: Visualiser & data projector, video clips 									PAT document, previous best practice examples
INFORMAL ASSESSMENT	Class test (suggested)		<ul style="list-style-type: none"> Min 5 DDEs/tasks completed Class test (suggested) 	Min 5 DDEs/tasks completed	Min 2 DDEs/tasks comp.	Min 12 DDEs/tasks completed				Min 3 DDEs/tasks completed	N/A	
Suggested: A Controlled Test on the Term 1 content completed, that could be made up of TWO questions that constitutes a min of 60 minutes and a min of 50 marks												
FORMAL ASSESSMENT (SBA & PAT)	N/A		N/A	Drawings for Course Drawing (CD) 1 (Free-hand drawing), to be sourced from the DDEs/tasks	N/A	Drawings for Course Drawings (CDs) 2 & 3 [1 st Geometrical construction (polygons and arc constructions) & 2 nd Geometrical construction (must include an ellipse)], to be sourced from the DDEs/tasks				N/A	N/A	
Formal assessment for Grade 10 Term 1						Contribution for Term 1			Contribution to final SBA			
<ul style="list-style-type: none"> CD1: Freehand drawing CD2: 1st geometrical construction (polygons and arc constructions) CD3: 2nd geometrical construction (must include an ellipse) 						33,3%	33,3%	33,4%	100%	To be confirmed		

2023/24 ANNUAL TEACHING PLANS: ENGINEERING GRAPHICS AND DESIGN (EGD): GRADE 10 (TERM 2)

TERM 2	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11															
CAPS TOPIC	MECHANICAL DRAWINGS				ISOMETRIC DRAWINGS			PAT	MID-YEAR EXAMINATION																	
PRESCRIBED CONCEPTS, CONTENT & SKILLS	3 rd angle orthographic working drawings with non-sectional and sectional views of mechanical castings and objects from industry Include the following: Title, scale, hidden detail, dimensioning, centre lines, cutting planes, hatching detail, symbol of projection and layout planning				Simple isometric drawings with isometric and non-isometric lines as well as auxiliary views .			Phase 1: Complete the design process requirements: • Design brief, specifications, and constraints • Research conducted • TWO free hand solutions • Selecting best solution	Continue with Term 2 content until the commencement of the examination ONE PAPER (3 hours)																	
REQUISITE PRE-KNOWLEDGE	• ALL general drawing principles • Orthographic projection				• The difference and relationship between 2D and 3D drawings • The ability to convert 2D views into a 3D drawing			Design Process requirements	<table border="1"> <tr> <td>Q 1</td> <td>General drawing principles & Mechanical analytical</td> <td>± 10%</td> </tr> <tr> <td>Q 2</td> <td>Freehand drawing</td> <td>± 10%</td> </tr> <tr> <td>Q 3</td> <td>Geometrical construction, incl. Ellipse construction</td> <td>± 20%</td> </tr> <tr> <td>Q 4</td> <td>Isometric drawing</td> <td>± 25%</td> </tr> <tr> <td>Q 5</td> <td>Mechanical working drawing</td> <td>± 35%</td> </tr> </table>			Q 1	General drawing principles & Mechanical analytical	± 10%	Q 2	Freehand drawing	± 10%	Q 3	Geometrical construction, incl. Ellipse construction	± 20%	Q 4	Isometric drawing	± 25%	Q 5	Mechanical working drawing	± 35%
Q 1	General drawing principles & Mechanical analytical	± 10%																								
Q 2	Freehand drawing	± 10%																								
Q 3	Geometrical construction, incl. Ellipse construction	± 20%																								
Q 4	Isometric drawing	± 25%																								
Q 5	Mechanical working drawing	± 35%																								
RESOURCES, OTHER THAN TEXTBOOKS & DRAWING INSTRUMENTS	• LTSM: Own complaint notes, previous exam/test questions on specific topic/content, compliant content from TD textbooks, relevant models/ physical examples • ICT: Visualiser & data projector, video clips																									
INFORMAL ASSESSMENT	Min 9 DDEs/tasks completed				Min 9 DDEs/tasks			N/A																		
FORMAL ASSESSMENT (SBA & PAT)	Drawings for CD 4 + 5 (Two different Mechanical working drawings of castings), to be sourced from the DDEs/Tasks				Drawings for CD 6 (Isometric drawing), to be sourced from the DDEs/tasks			Phase 1 of ALL PATs completed NOTE: PAT is <u>NOT</u> part of the SBA!	Examination																	
Formal assessment for Grade 10 Term 2						Contribution for Term 2			Contribution to Final SBA																	
• CD4: 1 st mechanical drawing • CD5: 2 nd mechanical drawing • CD6: Isometric drawing						25%			100%																	
Examination						75%			To be confirmed																	

2023/24 ANNUAL TEACHING PLANS: ENGINEERING GRAPHICS AND DESIGN (EGD): GRADE 10 (TERM 3)

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	
CAPS TOPIC	SOLID GEOMETRY			DESCRIPTIVE GEOMETRY			CIVIL DRAWING			COMMENCE WITH PERSPECTIVE DRAWING	PAT	
PRESCRIBED CONCEPTS, CONTENT & SKILLS	1 st angle orthographic views of right-regular prisms and pyramids with 3, 4, 5, 6 and 8 sides only , as well as cylinders and cones The axis of the solids may be perpendicular, parallel or inclined to one principal projection plane only Include the following: • Sectional views • The true shape of the cut surface • ALL hidden detail must be shown			1 st angle orthographic views of points and line segments that are perpendicular, inclined or oblique to the projection planes. • Determine the true lengths using at least two different methods, e.g., projection and construction • True inclination of line segments			Limited to single-storey dwellings 1 st angle orthographic working drawings with floor plans, basic single line elevations, including basic single line roofs (i.e., only the basic irregular triangular prismatic shape of the roof), and sectional elevations showing the detail of the <u>foundation to the slab</u> . • Labels, dimensioning and scales • Relevant abbreviations and graphical symbols • On the floor plan only: windows and doors • Hatching detail • The calculation of perimeters, as well as total - and floor areas			1-point perspective drawings of castings, dwellings and civil structures The position of the HL, PP and SP can be varied to provide any desired view, e.g., bird's eye, natural view, worm's eye view, etc.	Phases 2 & 3: Complete the working drawing and the PAT: • An orthographic drawing with min 3x views • Isometric drawing • Self-assess and deadlines • Presentation	
REQUISITE PRE-KNOWLEDGE	• General drawing principles • Construction of regular polygons with 3, 4, 5, 6 & 8 sides • Orthographic projecting			• General drawing principles • 1 st angle orthographic projecting			• ALL general drawing principles • 1 st angle orthographic projecting			• General drawing principles	Content & skills for mech working drawings	
RESOURCES, OTHER THAN TEXTBOOKS & DRAWING INSTRUMENTS	• LTSM: Own complaint notes, previous exam/test questions on specific topic/content, compliant content from TD textbooks, relevant models/ physical examples • ICT: Visualiser & data projector, video clips										PAT document, previous best practice examples	
INFORMAL ASSESSMENT	Min 11 DDEs/tasks completed			Min 5 DDEs/tasks completed			Min 8 DDEs/tasks completed			Min 4 DDEs/tasks completed		N/A
	<u>Suggested:</u> A controlled test on the Term 3 content completed, that could be made up of TWO questions that constitutes a min of 60 minutes and a min of 50 marks											
FORMAL ASSESSMENT (SBA & PAT)	Drawings for course drawing (CD) 7 (1 st section of a Solid: prism or pyramid) & 8 (2 nd section of a Solid: cylinder or cone), to be sourced from the DDEs/tasks			Drawings for CD 9 (Descriptive geometry with true lengths and true inclinations), to be sourced from the DDEs/tasks			Drawings for CD 10 (Civil floor plan) & 11 (Civil section elevation), to be sourced from the DDEs/tasks			N/A	All PATs completed NOTE: PAT is <u>NOT</u> part of the SBA!	
Formal assessment for Grade 10 Term 3							Contribution for Term 3			Contribution to final SBA		
• CD7: 1 st solid geometry (prism or pyramid) • CD8: 2 nd solid geometry (cylinder or cone) • CD9: Descriptive geometry • CD10: Civil floor plan • CD11: Civil sectional elevation							100%			To be confirmed		

2023/24 ANNUAL TEACHING PLANS: ENGINEERING GRAPHICS AND DESIGN (EGD): GRADE 10 (TERM 4)

TERM 4	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	
CAPS TOPIC	CONTINUE WITH PERSPECTIVE DRAWING		Continue with/catch-up on content not completed or do revision until the commencement of the Final/Promotional examinations/Assessment	FINAL/PROMOTIONAL EXAMINATION/ASSESSMENT							
PRESCRIBED CONCEPTS, CONTENT & SKILLS	1-point perspective drawings of castings, dwellings and civil structures The position of the HL, PP and SP can be varied to provide any desired view, e.g., bird's eye, natural view, worm's eye view, etc.			PAPER 1 – CIVIL (2 hours) In first-angle orthographic projection			PAPER 2 – MECHANICAL (2 hours) In third-angle orthographic projection				
REQUISITE PRE-KNOWLEDGE	• ALL general drawing principles			Q 1	Civil analytical	± 15%	Q 1	Mechanical analytical	± 15%		
RESOURCES, OTHER THAN TEXTBOOKS & DRAWING INSTRUMENTS	Same as for Term 3			Q 2	Descriptive geometry	± 15%	Q 2	Geometrical const. + Ellipse	± 25%		
INFORMAL ASSESSMENT	Min 4 DDEs/tasks completed for Term 4 (Min 8 1-point perspective DDEs/Tasks in TOTAL)			Q 3	Solid geometry	± 25%	Q 3	Isometric drawing	± 25%		
FORMAL ASSESSMENT (SBA & PAT)	Drawings for CD 12 (1-point perspective), to be sourced from the DDEs/Tasks			Q 4	Civil working drawing	± 45%	Q 4	Mechanical working drawing	± 35%		
Formal assessment for Grade 10 Term 4					Contribution for Term 4			Contribution to final SBA			
• CD12: 1-point perspective					N/A			To be confirmed			