

## 2021 Annual Teaching Plan: Term 1

## Engineering Graphics and Design (EGD): Grade 10

TERM 1 (45 days)	WEEK 1 27 – 29 Jan	WEEK 2 01 – 05 Feb	WEEK 3 08 – 12 Feb	WEEK 4 15 – 19 Feb	WEEK 5 22 – 26 Feb	WEEK 6 01 – 05 Mar	WEEK 7 08 – 12 Mar	WEEK 8 15 – 19 Mar	WEEK 9 23 – 26 Mar	WEEK 10 29 – 31 Mar
<b>CAPS Topic (Days)</b>	Classroom Admin (3 days)	EGD Intro (2 days)	General Drawing Principles (9 days)	Free-hand Drawing (9 days)		Set up Draw. Sheet (4 days)	Geometrical Construction (15 days in Term 1)			PAT (3 days)
<b>Prescribed Concepts, content &amp; Skills</b>	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"> <li>◆ The correct use and care of drawing instruments;</li> <li>◆ The dangers of sharp instruments;</li> <li>◆ Relevant line types as contained in the GUIDELINES for EGD PENCIL LINE-WORK;</li> <li>◆ General lettering (writing) requirements as contained in the SANS (SABS) 0111 &amp; 0143;</li> <li>◆ General dimensioning requirements as contained in the SANS (SABS) 0111 &amp; 0143.</li> </ul>	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"> <li>◆ 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</li> <li>◆ Construct regular polygons with 3, 4, 5, 6 &amp; 8 sides. Determine the centre of the polygons.</li> </ul>			Teach the Design Process: <ul style="list-style-type: none"> <li>◆ Problem identification, and formulate design brief with specs and constraints</li> <li>◆ Conducting research and generating graphical ideas</li> <li>◆ Selecting the best solution</li> <li>◆ Presenting final solution as working and 3D drawings</li> <li>◆ Evaluation of the entire process</li> </ul>
<b>Requisite pre-knowledge</b>	N/A	N/A	<ul style="list-style-type: none"> <li>◆ The basic drawing instruments</li> <li>◆ Basic dimensioning techniques</li> </ul>	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			The Technological Process
<b>Add. resources, other than textbooks &amp; drawing instruments</b>	Files/folders, own rules, own notes		<ul style="list-style-type: none"> <li>◆ LTSM: Own complaint notes, previous exam/test questions on specific topic/content, compliant content from TD textbooks, relevant models/ physical examples</li> <li>◆ ICT: Visualiser &amp; data projector, video clips</li> </ul>							PAT document, previous best practice examples
<b>Informal Assessment</b>	Class test (suggested)		<ul style="list-style-type: none"> <li>◆ Min 5 DDEs/Tasks completed</li> <li>◆ Class test (suggested)</li> </ul>	Min 5 DDEs/Tasks completed		Min 3 DDEs/Tasks comp.	Min 12 DDEs/Tasks completed			N/A
<b>Formal Assessment (SBA &amp; PAT)</b>	None		<b>ONE compulsory controlled test</b> that could be made up of TWO questions, or TWO separate tests, that constitutes a <b>min of 60 minutes</b> and a <b>min of 50 marks</b>							N/A
	N/A		Drawings for <b>Course Drawing (CD) 1</b> (Free-hand drawing) , to be sourced from the DDEs/Tasks		N/A		Drawings for <b>CDs 2 &amp; 3</b> [1 <sup>st</sup> Geometrical Construction (figure/object with 5+ constructions), & 2 <sup>nd</sup> Geometrical Construction (figure/object with 3+ polygons)], to be sourced from the DDEs/Tasks			

## 2021 Annual Teaching Plan: Term 2

## Engineering Graphics and Design (EGD): Grade 10

TERM 2 (52 days)	WEEK 1 13 – 16 Apr	WEEK 2 19 – 23 Apr	WEEK 3 26 – 30 Apr	WEEK 4 03 – 09 May	WEEK 5 10 – 14 May	WEEK 6 17 – 21 May	WEEK 7 24 – 28 May	WEEK 8 09 May – 04 Jun	WEEK 9 07 – 11 Jun	WEEK 10 14 – 18 Jun	WEEK 11 21 – 24 Jun
CAPS Topic (Days)	PAT (2 days)	Geometrical Construction (8 days in Term 3, i.e. 23 days in TOTAL)	Scale (5 days)	Mechanical Drawing (18 days)				Isometric Drawing (14+ days)			Catch-up/Revision (5 days)
Prescribed Concepts, content & Skills	Explained/ discussed the PAT scenarios to/with the learners	<ul style="list-style-type: none"> <li>Construction of an Ellipse by using at least TWO different construction methods, <b>and</b></li> <li>complete Geometrical Constructions <b>NOT completed in Term 1</b></li> </ul>	<ul style="list-style-type: none"> <li>Practice and apply Different scales, e.g. 5:1, 2:1, 1:2, 1:25, 1:50, 1:75, 1:100 etc.</li> <li>The application of <b>any scale</b> to all types of drawing</li> </ul>	3 <sup>rd</sup> angle orthographic working drawings with <b>non-sectional</b> and <b>sectional views</b> of <b>mechanical castings and objects</b> from industry.  Include the following: <b>Title, scale, hidden detail, dimensioning, centre lines, cutting planes, hatching detail, symbol of projection and layout planning</b>				Simple isometric drawings with isometric and non-isometric lines as well as <b>auxiliary views</b> .			Continue with Term 2 content not completed <b>and/or</b> do <b>revision</b> of Term 1 & 2 content
Requisite pre-knowledge	The Design Process	Relevant <b>line types</b> as contained in the <b>guidelines for EGD pencil line-work</b>	Understanding of scales	<ul style="list-style-type: none"> <li>ALL general drawing principles</li> <li>Orthographic projection</li> </ul>				<ul style="list-style-type: none"> <li>The difference and relationship between 2D and 3D drawings</li> <li>The ability to convert 2D views into a 3D drawing</li> </ul>			
Add. resources, other than textbooks & drawing instruments	PAT document, previous best practice examples	<ul style="list-style-type: none"> <li><b>LTSM:</b> Own complaint notes, previous exam/test questions on specific topic/content, compliant content from TD textbooks, relevant models/ physical examples</li> <li><b>ICT:</b> Visualiser &amp; data projector, video clips</li> </ul>									
Informal Assessment	N/A	Drawings for <b>Course Drawing (CD) 4</b> (Ellipse), to be sourced from the DDEs/Tasks	Min 3 DDEs/ Tasks completed	Min 10 DDEs/Tasks completed				Min 9 DDEs/Tasks completed			
Formal Assessment (SBA & PAT)	N/A	<b>ONE compulsory Controlled Test</b> that could be made up of TWO questions, or TWO separate tests, that constitutes a <b>min of 60 minutes</b> and a <b>min of 50 marks</b>									
		Drawings for <b>Course Drawing (CD) 4</b> (Ellipse), to be sourced from the DDEs/Tasks	N/A	Drawings for <b>CD 5</b> (Mechanical Working Drawing of a Casting), to be sourced from the DDEs/Tasks				Drawings for <b>CD 6</b> (Isometric Drawing), to be sourced from the DDEs/Tasks			

## 2021 Annual Teaching Plan: Term 3

## Engineering Graphics and Design (EGD): Grade 10

TERM 1 (52 days)	WEEK 1 13 – 16 Jul	WEEK 2 19 – 23 Jul	WEEK 3 26 – 30 Jul	WEEK 4 02 – 06 Aug	WEEK 5 10 – 13 Aug	WEEK 6 16 – 2 Aug	WEEK 7 23 – 27 Aug	WEEK 8 30 Aug – 03 Sept	WEEK 9 06 – 10 Sept	WEEK 10 13 – 17 Sept	WEEK 11 20 – 23 Sept
<b>CAPS Topic (Days)</b>	<b>PAT (4 days)</b>	<b>Solid Geometry (19 days)</b>				<b>Descriptive Geometry (5 days)</b>		<b>Commence with Civil Drawing (15 days in Term 2)</b>			<b>PAT (4 days)</b>
<b>Prescribed Concepts, content &amp; Skills</b>	<b>Phase 1: Complete the Design Process requirements:</b> <ul style="list-style-type: none"> <li>◆ Design brief, specifications, and constraints</li> <li>◆ Research conducted</li> <li>◆ TWO free hand solutions</li> <li>◆ Selecting best solution.</li> </ul>	<b>1<sup>st</sup> angle orthographic views</b> of right-regular <b>prisms</b> and <b>pyramids</b> with <b>3, 4, 5, 6 and 8 sides only</b> , as well as <b>cylinders</b> and <b>cones</b> . The axis of the solids may be perpendicular, parallel or inclined to one principal projection plane only. Include the following: <ul style="list-style-type: none"> <li>◆ <b>Sectional views</b></li> <li>◆ <b>The true shape of the cut surface</b></li> <li>◆ <b>ALL hidden detail</b></li> </ul>				<b>1<sup>st</sup> angle orthographic views</b> of <b>points</b> and <b>line segments</b> that are perpendicular, inclined or oblique to the projection planes. <ul style="list-style-type: none"> <li>◆ Determine the <b>true lengths</b> using at least <b>two different methods</b>, e.g. projection and construction</li> <li>◆ <b>True inclination</b> of line segments</li> </ul>		Limited to <b>single-storey</b> dwellings, <b>1<sup>st</sup> angle orthographic</b> working drawings with <b>floor plans</b> , <b>basic single line elevations</b> , including basic single line roofs (i.e. only the basic irregular triangular prismatic shape of the roof), <i>and sectional elevations showing the detail of the foundation to the slab.</i> <ul style="list-style-type: none"> <li>◆ <b>Labels, dimensioning and scales</b></li> <li>◆ Relevant <b>abbreviations</b> and <b>graphical symbols</b></li> <li>◆ On the <b>floor plan only: windows and doors</b></li> <li>◆ <b>Hatching</b> detail</li> <li>◆ <b>Perimeters</b> and <b>total/floor areas</b></li> </ul>			<b>Phases 2 &amp; 3: Complete the working drawing and the PAT:</b> <ul style="list-style-type: none"> <li>◆ An <b>Orthographic Drawing</b> with min 3 x views!</li> <li>◆ <b>Isometric Drawing</b></li> <li>◆ Self-assess. &amp; Deadlines</li> <li>◆ Presentation</li> </ul>
<b>Requisite pre-knowledge</b>	Design Process requirements	<ul style="list-style-type: none"> <li>◆ General drawing principles</li> <li>◆ Construction of regular polygons with 3, 4, 5, 6 &amp; 8 sides</li> <li>◆ Orthographic projecting</li> </ul>				<ul style="list-style-type: none"> <li>◆ General drawing principles</li> <li>◆ 1<sup>st</sup> angle orthographic projecting</li> </ul>		<ul style="list-style-type: none"> <li>◆ ALL general drawing principles</li> <li>◆ 1<sup>st</sup> angle orthographic projecting</li> </ul>			Content & skills for Mech working drawings
<b>Add. resources, other than textbooks &amp; drawing instruments</b>		<ul style="list-style-type: none"> <li>◆ <b>LTSM:</b> Own complaint notes, previous exam/test questions on specific topic/content, compliant content from TD textbooks, relevant models/ physical examples</li> <li>◆ <b>ICT:</b> Visualiser &amp; data projector, video clips</li> </ul>									PAT document, previous best practice examples
<b>Informal Assessment</b>	N/A	Min 12 DDEs/Tasks completed				Min 6 DDEs/Tasks completed		Min 9 DDEs/Tasks completed for Term 3			N/A
<b>Formal Assessment (SBA &amp; PAT)</b>	Phase 1 of ALL PATs completed	Drawings for <b>Course Drawing (CD) 7</b> (1 <sup>st</sup> Sectioned Solid of Prism or Pyramid) <b>&amp; CB 8</b> (2 <sup>nd</sup> Sectioned Solid of Cylinder or Cone), to be sourced from the DDEs/Tasks				Drawings for <b>CD 9</b> (True Lengths and True Inclinations), to be sourced from the DDEs/Tasks		Drawings for <b>CD 10</b> (Calculation of Perimeters and Areas) <b>&amp; CD 11</b> (Floor Plan), to be sourced from the DDEs/Tasks			<b>All PATs completed</b>

## 2021 Annual Teaching Plan: Term 4

## Engineering Graphics and Design (EGD): Grade 10

TERM 1 (45 days)	WEEK 1 05 – 08 Oct	WEEK 2 11 – 15 Oct	WEEK 3 18 – 22 Oct	WEEK 4 25 – 29 Oct	WEEK 5 01 – 05 Nov	WEEK 6 08 – 12 Nov	WEEK 7 15 – 19 Nov	WEEK 8 22 – 26 Nov	WEEK 9 29 Nov – 03 Dec	WEEK 10 06 – 10 Dec																														
<b>CAPS Topic (Days)</b>	Continue with Civil Draw. (5 days in Term 4, i.e. 20 days in TOTAL)		Catch-up/Revision (Until the commencement of the 'Final/Promotional Examinations')		Final/Promotional Examination (Min. 15 days)																																			
<b>Prescribed Concepts, content &amp; Skills</b>	Limited to <b>single-storey</b> dwellings, <b>1<sup>st</sup> angle orthographic</b> working drawing of <b>sectional elevations</b> showing the <b>detail of the foundation to the slab</b> . Include the following: ♦ <b>Labels, dimensioning</b> and <b>scales</b> ♦ Relevant <b>abbreviations</b> and <b>graphical symbols</b> ♦ <b>Hatching</b> details		Continue with/catch-up on content not completed <b>and/or</b> do revision		<table border="1"> <thead> <tr> <th colspan="3">PAPER 1 -<b>CIVIL</b>- (2 hours) In <b>first-angle</b> orthographic projection</th> <th colspan="3">PAPER 2 -<b>MECHANICAL</b>- (2 hours) In <b>third-angle</b> orthographic projection</th> </tr> </thead> <tbody> <tr> <td>Q 1</td> <td>Civil analytical</td> <td>± 15%</td> <td>Q 1</td> <td>Mechanical analytical</td> <td>± 15%</td> </tr> <tr> <td>Q 2</td> <td>Descriptive geometry</td> <td>± 15%</td> <td>Q 2</td> <td>Geometrical Construction + Ellipse</td> <td>± 25%</td> </tr> <tr> <td>Q 3</td> <td>Solid geometry</td> <td>± 25%</td> <td>Q 3</td> <td>Isometric drawing</td> <td>± 25%</td> </tr> <tr> <td>Q 4</td> <td>Civil working drawing</td> <td>± 45%</td> <td>Q 4</td> <td>Mechanical working drawing</td> <td>± 35%</td> </tr> </tbody> </table>						PAPER 1 - <b>CIVIL</b> - (2 hours) In <b>first-angle</b> orthographic projection			PAPER 2 - <b>MECHANICAL</b> - (2 hours) In <b>third-angle</b> orthographic projection			Q 1	Civil analytical	± 15%	Q 1	Mechanical analytical	± 15%	Q 2	Descriptive geometry	± 15%	Q 2	Geometrical Construction + Ellipse	± 25%	Q 3	Solid geometry	± 25%	Q 3	Isometric drawing	± 25%	Q 4	Civil working drawing	± 45%	Q 4	Mechanical working drawing	± 35%
PAPER 1 - <b>CIVIL</b> - (2 hours) In <b>first-angle</b> orthographic projection			PAPER 2 - <b>MECHANICAL</b> - (2 hours) In <b>third-angle</b> orthographic projection																																					
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Q 2	Descriptive geometry	± 15%	Q 2	Geometrical Construction + Ellipse	± 25%																																			
Q 3	Solid geometry	± 25%	Q 3	Isometric drawing	± 25%																																			
Q 4	Civil working drawing	± 45%	Q 4	Mechanical working drawing	± 35%																																			
<b>Requisite pre-knowledge</b>	♦ ALL general drawing principles ♦ 1 <sup>st</sup> angle orthographic projecting																																							
<b>Add. resources, other than textbooks &amp; drawing instruments</b>	Same as for Term 3																																							
<b>Informal Assessment</b>	Min 3 DDEs/Tasks completed for Term 4 (i.e. Min 12 Civil DDEs/Tasks in TOTAL!)																																							
<b>Formal Assessment (SBA &amp; PAT)</b>	Drawings for <b>CD 12</b> (Sectional Elevation), to be sourced from the DDEs/Tasks																																							