Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination 2010

Design and Communication Graphics

Student Assignment

Ordinary Level and Higher Level
160 marks

Details of the Student Assignment for the Leaving Certificate Examination 2010 are given overleaf.

The Student Assignment must be completed by Friday 12th February 2010.

Design and Communication Graphics (DCG)
Student Assignment
Leaving Certificate 2010

Instructions to candidates:

1. The coursework submitted for assessment must consist of two components:
    - A bound A3 design portfolio
        - The portfolio should contain a maximum of 12 pages at Ordinary Level and a maximum of 14 pages at Higher Level.
    - An individual CD containing:
        - All of the SolidWorks files relating to the completed assignment
        - An electronic copy of the completed portfolio.

    *(The electronic copy of the completed portfolio should be presented in **PDF format**. The electronic copy should contain the same number of pages as the design portfolio. An A3 scanner or digital camera should be used to generate the electronic images).*

2. The CD must contain 1 main folder. The name of this folder should contain your candidate examination number in the following format "DCG SA 2010 (Exam number)".

3. The main folder, referred to above, must contain 2 sub-folders. One of these sub-folders will contain all the pages from the completed assignment in **PDF format**. The other sub-folder must contain 2 sub-folders. One of these sub-folders must contain all of the SolidWorks electronic files associated with Part A of the assignment and the second subfolder must contain all of the SolidWorks electronic files associated with Part B of the assignment. No other files should be included on the CD.
   (SolidWorks files in 2006 or 2009 format will be accepted for assessment this year. However, it is expected that all candidates will use the most current version of the software available to schools in subsequent years).

4. It is your responsibility to ensure that all of the required files are contained on the CD prior to submission of the work. You will **lose marks** under the relevant headings in the marking scheme if this is not done. **Marks will be awarded for conforming to the filing structure outlined above.** A backup copy of the files on the CD should be retained in your school until the assessment process is complete.

5. For protection during transit, the CD should be placed in a protective plastic sleeve. **This sleeve should be fixed close to the bound edge on the inside cover of the design portfolio.**

6. All coursework submitted for assessment must be clearly identified with your examination number.

7. The coursework submitted for assessment must be **your own individual work** and must be **completed in school** under the supervision of the class teacher.

8. When using research sources, including the Internet, the sources must be acknowledged. Research material copied directly from the Internet or from other sources and presented as your own work will not receive any marks.

9. The coursework presented for assessment must be displayed in an attractive manner and marks will be awarded for presentation.

10. The coursework must be available for assessment by ***Friday 12th February 2010***.

Ordinary Level Student Assignment - Leaving Certificate 2010

In recent years, as the use of surveillance cameras has increased in homes and businesses, their design has also developed in terms of size, shape and form. Modern cameras also incorporate new and innovative features such as wireless technology, remote movement control, night vision, etc.

(A) Carry out a design investigation of the physical form and features of existing surveillance cameras.

and

(B) Show graphically the modifications which you would make to an existing surveillance camera to improve its overall design.

or

Develop and graphically communicate a new concept design for a surveillance camera.

The submitted assignment should follow the structure outlined in the marking scheme below.

Student Assignment - Ordinary Level

		No.	Section Heading	Description	Suggested no. of A3 Pages	Marks
Presentation, thought process, reflection and factor of difficulty will be considered throughout.	Part (A) - Existing Artefacts	**1**	Design Research	Exploration of brief and presentation of existing artefacts in graphic format.	1-2	50
		2	Design Feature Comparison	Select 2 images and illustrate/explain the main design features. Insert the main dimensions. Compare and contrast the main design features of both using suitable freehand sketches and other presentation techniques.	1-2	
		3	Freehand Graphical Representation	Choose one of the artefacts and make a detailed graphical presentation of this artefact. This should include a rendered freehand presentation quality drawing in 3D format.	1	
		4	SolidWorks Parts, Assembly and eDrawing	Generate a detailed computer model, comprising at least 3 parts, an Assembly and an eDrawing of the selected artefact. The required filing structure will be considered in the marking of the assignment.	Electronic SolidWorks files on CD	60
		5	Hardcopy output from Solidworks	Detailed orthographic views Rendered pictorial view Exploded View	1-3	
		6	Photorealistic Image	Produce a photorealistic computer generated image of the artefact	1	
	Part (B) Design Modification or Concept Design	**7**	Graphical exploration of design solutions	Analysis of brief and graphical illustration of possible solutions Justification for chosen solution(s)	1-2	50
		8	Presentation of Modification/ Concept Design	Detailed graphical presentation of the design Modification/Concept Design. This should include a rendered freehand presentation quality drawing in 3D format.	1	
		9	Hardcopy output from Solidworks	CAD Model and associated hardcopy outputs to include appropriately detailed orthographic and rendered pictorial views to communicate the modified/concept design.	1-3 (Plus Electronic SolidWorks files on CD)	
					Total	**160**

Higher Level Student Assignment - Leaving Certificate 2010

There have been many changes to handheld electronic game controllers over the last thirty years. These developments consist of changes to shape and form as well the addition of new features. Such features include cordless technology, integral speakers, inbuilt screen and console, etc.

(A) Carry out a design investigation of the physical form and features of handheld game controllers to include their development since the late 1970's.

and

(B) Show graphically the modifications which you would make to an existing handheld game controller to improve its overall design.

or

Develop and graphically communicate a new concept design for a handheld game controller.

The submitted assignment should follow the structure outlined in the marking scheme below.

Student Assignment - Higher Level

		No.	Section Heading	Description	Suggested no. of A3 Pages	Marks
Presentation, thought process, reflection and factor of difficulty will be considered throughout.	Part (A) - Existing Artefacts	**1**	Design Research	Exploration of brief and presentation of existing artefacts in graphic format.	1-2	50
		2	Design Feature Comparison	Select 2 images and illustrate/explain the main design features. Insert the main dimensions. Compare and contrast the main design features of both using suitable freehand sketches and other presentation techniques.	2-3	
		3	Freehand Graphical Representation	Choose one of the artefacts and make a detailed graphical presentation of this artefact. This should include a rendered freehand presentation quality drawing in 3D format.	1	
		4	SolidWorks Parts, Assembly and eDrawing	Generate a detailed computer model, comprising at least 5 parts, an Assembly and an eDrawing of the selected artefact. Economy of design, design intent and the required filing structure will be considered in the marking of the assignment.	Electronic SolidWorks files on CD	50
		5	Hardcopy output from Solidworks	Detailed orthographic views. Rendered pictorial view. Exploded View.	2-4	
		6	Photorealistic Image	Produce a photorealistic computer generated image of the artefact.	1	
	Part (B) Design Modification or Concept Design	**7**	Graphical exploration of design solutions	Analysis of brief and graphical illustration of possible solutions. Justification for chosen solution(s) including aesthetics, functionality and environmental sustainability.	2-4	60
		8	Presentation of Modification/ Concept Design	Detailed graphical presentation of the design Modification/Concept Design. This should include a rendered freehand presentation quality drawing in 3D format.	1	
		9	Hardcopy output from Solidworks	CAD Model and associated hardcopy outputs to include appropriately detailed orthographic, rendered pictorial and photorealistic views to communicate the modified/concept design.	2-4 (Plus Electronic SolidWorks files on CD)	
					Total	**160**