



*Coimisiún na Scrúduithe Stáit*  
*State Examinations Commission*

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*Leaving Certificate Examination, 2011*

***Design and Communication Graphics***

*Student Assignment*

*Ordinary Level and Higher Level*  
*160 marks*

*Details of the Student Assignment for the Leaving Certificate Examination, 2011 are given overleaf.*

***The Student Assignment must be completed by Friday 14<sup>th</sup> January, 2011.***

***The work should be submitted following the issue of candidate examination numbers to schools.***

# Design and Communication Graphics (DCG) Student Assignment Leaving Certificate 2011

## Instructions to candidates:

1. Your 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 in **PDF format**.

All coursework submitted for assessment must be clearly identified with your examination number which will be issued to your school early in 2011.

2. The CD must contain one main folder. The name of this folder should contain your candidate examination number in the following format “DCG SA 2011 (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.  
*(All required CAD files must be in SolidWorks 2009 format)*
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 required files are omitted. 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 sleeve. This sleeve should be fixed close to the bound edge on the inside cover of the design portfolio.
6. You must submit your **original sketches** for Outputs 3 and 8 – scanned images will not suffice.
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 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 completed by *Friday 14<sup>th</sup> January 2011*.

## Ordinary Level Student Assignment - Leaving Certificate 2011

USB Flash Drives have become a popular means of storing and transferring electronic data. These devices are generally very compact and some include features such as connector protection, locking mechanism, indicator light, etc. Some of the devices are novel in terms of their shape and form.

- (A) Carry out a design investigation of the physical form and features of USB Flash Drives. Your design investigation should begin with an exploration of the historical development of removable storage media.

*and*

- (B) Show graphically how you would physically modify a USB Flash Drive to improve its overall design.

*or*

Develop and graphically communicate a new concept design for a USB Flash Drive.

The assignment should follow the structure outlined in the marking considerations below.

		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, Drawing, and eDrawing	Detailed computer model, comprising at least 3 Parts, an Assembly, Drawing and an eDrawing of the selected artefact. The required filing structure will be considered in the marking process.	Electronic SolidWorks files on CD	60
		5	Hardcopy output from Solidworks	Detailed orthographic views. Rendered pictorial view. Exploded view	1-3	
		6	Photorealistic Representation	Computer generated photorealistic representation 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 solution(s). 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 (Part/Assembly, Drawing & eDrawing) and associated hardcopies to include appropriately detailed orthographic and rendered pictorial views to communicate your chosen design.	1-3 (Plus electronic SolidWorks files on CD)	
					<b>Total</b>	<b>160</b>

## Higher Level Student Assignment - Leaving Certificate 2011

Portable satellite navigation systems have, in recent times, become a popular car accessory. A means of securely mounting the device inside the car is an essential feature of all such systems. These devices frequently have a variety of additional features such as, touch screen, integrated speakers, volume control, card slot etc.

(A) Carry out a design investigation of the physical form and features of portable satellite navigation systems including the mounting mechanism.

*and*

(B) Show graphically how you would modify an existing portable satellite navigation system to improve its overall design.

*or*

Develop and graphically communicate a new concept design for a portable satellite navigation system.

**The assignment should follow the structure outlined in the marking considerations below.**

		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, Drawing and eDrawing	Detailed computer model, comprising at least 5 Parts, an Assembly, Drawing and an eDrawing of the selected artefact. Economy of design, design intent and the required filing structure will be considered in the marking process.	Electronic SolidWorks files on CD	50
		5	Hardcopy output from Solidworks	Detailed orthographic views. Rendered pictorial view. Exploded view.	2-4	
		6	Photorealistic Representation	Computer generated photorealistic representation 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 (Part/Assembly, Drawing & eDrawing) and associated hardcopies to include appropriately detailed orthographic, rendered pictorial and photorealistic views to communicate your chosen design.	2-4 (Plus electronic SolidWorks files on CD)	
					<b>Total</b>	<b>160</b>