2015. M80P/M81P

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2015

Design and Communication Graphics

Student Assignment

Ordinary Level and Higher Level
160 marks

Details of the Student Assignment for the Leaving Certificate Examination, 2015 are given overleaf.

The Student Assignment must be completed by Friday 16th January, 2015.
The work should be submitted following the issue of candidate examination numbers to schools.

Design and Communication Graphics (DCG)
Student Assignment
Leaving Certificate 2015

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 <u>or</u> USB flash drive** 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 2015. It is your responsibility to ensure that all electronic materials submitted are free from viruses, so that examiners can open all required files for assessment. **Please note that the portfolio and CD/USB flash drive will not be returned at the end of the assessment process.**

2. The **CD/USB flash drive** must contain one main folder. The name of this folder should contain your candidate examination number in the following format "DCG SA 2015 (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/USB flash drive**.
    (All required CAD files must be in SolidWorks format. The version of SolidWorks used to complete your assignment should be indicated on the front cover of your design portfolio.)

4. It is your responsibility to ensure that all of the required files are contained on the **CD/USB flash drive** 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 **submitted files** must be retained in your school until the assessment process is complete.

5. For protection during transit, the **CD/USB flash drive** must be placed in a protective sleeve or envelope. This 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 16th January 2015***.

Ordinary Level Student Assignment - Leaving Certificate 2015

Cufflinks are often considered as important fashion accessories and also as works of art. They can be manufactured from a variety of different materials including metal, precious stones, glass, or a combination of materials. A number of different methods are used to hold cufflinks in place.

(A) Carry out a design investigation of existing cufflinks in graphic format. Your investigation should include an analysis of physical shape, features, colour, materials, etc.

and

(B) Show graphically how you would physically modify your chosen cufflinks to improve the overall design.

or

Develop and graphically communicate a new concept design for cufflinks based on a selected theme or target market.

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

Student Assignment - Ordinary Level

		No.	Section Heading	Description	Suggested no. of A3	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 files	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	60
		5	Hardcopy output from Solidworks	Detailed orthographic views Rendered pictorial view Exploded View	1-3	
		6	Photorealistic Representation	Computer generated photorealistic image(s) 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)	
					Total	**160**

Higher Level Student Assignment - Leaving Certificate 2015

From earliest times, torches were used as portable light sources. Modern day, electrically powered torches are ergonomically designed and are available in a wide range of forms, shapes, sizes, materials, colours, etc. Hands-free models have also been developed to meet specific needs.

(A) Carry out a design investigation of the physical form and features of a torch light. Your investigation should be informed by the development of the product over time.

and

(B) Show graphically how you would physically modify a chosen torch to improve its overall design.

or

Develop and graphically communicate a new concept design for a torch light based on a selected theme or function and aimed at a particular target market.

The assignment should follow the structure outlined in the marking considerations 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, Drawing, and eDrawing files	Generate computer model, comprising at least 5 parts, an Assembly, Drawing and an eDrawing of the selected artefact. Ecomomy of design, design intent and the required filing structure will be considered in the marking process.	Electronic SolidWorks files	50
		5	Hardcopy output from Solidworks	Detailed orthographic views. Rendered pictorial view. Exploded View.	2-4	
		6	Photorealistic Representation	Computer generated photorealistic image(s) 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)	
					Total	**160**

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Scrúdú na hArdteistiméireachta, 2015

Grafaic Dhearaidh agus Chumarsáide

Tasc an Dalta

Gnáthleibhéal agus Ardleibhéal
160 marc

Tá sonraí maidir le Tasc an Dalta do Scrúdú na hArdteistiméireachta,2015 le fáil thall.

Ní mór Tasc an Dalta a bheith críochnaithe faoi Dé hAoine, 16 Eanáir 2015.
Ba chóir an obair a chur isteach tar éis eisiúint scrúduimhreacha na n-iarrthóirí do na scoileanna.

Grafaic Dhearaidh agus Chumarsáide
Tasc an Dalta
An Ardteistiméireacht, 2015

Treoracha d'iarrthóirí:

1. Ní mór dhá chuid a bheith san obair chúrsa a chuirtear isteach le haghaidh measúnú:
   - Fillteán ceangailte A3 d'obair dhearaidh
     - Ní cóir níos mó ná 12 leathanach a bheith san fhillteán ag an nGnáthleibhéal agus ní cóir níos mó ná 14 leathanach a bheith ann ag an Ardleibhéal.
   - **Dlúthdhiosca nó méaróg chuimhne (USB)** ar leith ar a mbeidh:
     - Na comhaid SolidWorks go léir a bhaineann leis an tasc críochnaithe
     - Cóip leictreonach **i bhformáid PDF** den obair go léir san fhillteán.

   Ba chóir do scrúduimhir, a chuirfear chuig do scoil go luath in 2015, a bheith scríofa go soiléir ar an obair chúrsa go léir a chuirtear isteach le haghaidh measúnú. Ortsa atá an fhreagracht a chinntiú go bhfuil an t-ábhar leictreonach go léir saor ó víris sa chaoi gur féidir leis na scrúdaitheoirí é a oscailt lena mheasúnú. **Tugtar do d'aire nach seolfar ar ais an fillteán ná an dlúthdhiosca nó an mhéaróg chuimhne i ndeireadh phróiseas na measúnachta.**

2. Ní mór aon phríomhfhillteán amháin a bheith ar an **dlúthdhiosca/méaróg**. Ba chóir do scrúduimhir a bheith ina cuid dhílis d'ainm an fhillteáin, san fhormáid seo: "DCG SA 2015 (Scrúduimhir)".

3. Ní mór 2 fhofhillteán a bheith sa phríomhfhillteán a luaitear thuas. Ní mór na leathanaigh go léir ón tasc críochnaithe a bheith i gceann de na fofhillteáin sin **i bhformáid PDF**. Ní mór 2 fhofhillteán a bheith san fhofhillteán eile. Beidh gach ceann de na comhaid leictreonacha SolidWorks a bhaineann le Cuid A den tasc i gceann de na fofhillteáin sin agus beidh na comhaid leictreonacha SolidWorks a bhaineann le Cuid B den tasc sa dara fofhillteán. Níor cheart comhad ar bith eile a bheith ar an **dlúthdhiosca/méaróg**.
   (***Ní mór na comhaid CAD go léir atá ag teastáil a bheith i bhformáid SolidWorks. Ba chóir an leagan de SolidWorks atá in úsáid a chuir in iúl ar chlúdach tosaigh d'fhillteáin dearaidh.***)

4. Is ortsa atá an fhreagracht a chinntiú go mbeidh na comhaid go léir atá ag teastáil ar an **dlúthdhiosca / méaróg** sula gcuireann tú isteach an obair. **Caillfidh tú marcanna** faoi na ceannteidil ábhartha sa scéim mharcála má bhíonn comhaid riachtanacha in easnamh. Bronnfar marcanna as cloí leis an struchtúr comhdúcháin a bhfuil cur síos air thuas.
   Ba chóir cóip chúltaca de na **comhaid a chuirtear isteach** a choinneáil i do scoil go dtí go mbeidh próiseas na measúnachta críochnaithe.

5. Lena chosaint le linn dó a bheith á iompar, ba chóir an **dlúthdhiosca/mhéaróg** a chur i gclúdach cosanta. Ba chóir an clúdach sin a bheith greamaithe den taobh istigh de chlúdach an fhillteáin dearaidh, gar don chiumhais cheangailte.

6. Ní mór do chuid **bunsceitsí** do na hAschuir 3 agus 8 a chur isteach – ní leor íomhánna scanta.

7. **Do chuid oibre féin** ba chóir a bheith i ngach cuid den obair chúrsa a chuirtear isteach le haghaidh measúnú agus ní mór **í a dhéanamh sa scoil** faoi threoir mhúinteoir an ranga.

8. Ní mór na foinsí taighde a úsáidtear, an tIdirlíon san áireamh, a admháil. Ní ghnóthófar marc ar bith as ábhar taighde a chóipeáil go díreach ón Idirlíon ná as foinse ar bith eile agus a chur i láthair mar do chuid oibre féin.

9. Ní mór an obair chúrsa le haghaidh measúnú a chur i láthair ar bhealach tarraingteach agus bronnfar marcanna as an gcur i láthair.

10. Ní mór an obair chúrsa a bheith críochnaithe faoi **Dé hAoine, 16 Eanáir 2015**.

Tasc an Dalta – Gnáthleibhéal – An Ardteistiméireacht, 2015

Is minic a smaoiníonn daoine ar lúibíní cufa mar oiriúintí tábhachtacha faisin agus mar shaothair ealaíne. Is féidir iad a dhéanamh as éagsúlacht d'ábhair dhifriúla, e.g. miotal, clocha luachmhara, gloine nó meascán d'ábhair éagsúla. Tá roinnt slite éagsúla ann chun na lúibíní cufa a choinneáil ina n-áit.

(A) Déan imscrúdú dearaidh i bhformáid ghrafach ar lúibíní cufa atá ann cheana féin. Bá chóir go mbeadh anailís san áireamh i d'imscrúdú ar an gcruth, ar na gnéithe, ar an dath, ar na hábhair, etc.

agus

(B) Taispeáin go grafach conas a dhéanfá athrú fisiciúil ar na lúibíní cufa a roghnaíonn tú chun an dearadh foriomlán a fheabhsú.

nó

Déan coincheap nua dearaidh do lúibíní cufa, bunaithe ar théama roghnaithe nó dírithe ar spriocmhargadh áirithe, a fhorbairt agus a chur in iúl go grafach.

Ba chóir an struchtúr a thugtar sna nótaí marcála thíos a leanúint sa tasc.

Tasc an Dalta - Gnáthleibhéal

			Teideal na Roinne	Tuairisc	Líon lch A3 a mholtar	Marc
Beidh an cur i láthair, an próiseas smaointeoireachta, an machnamh & an chéim dheacrachta á mbreithniú i rith an ama.	Cuid (A) - Déantúsáin atá ann cheana féin	1	Taighde Dearaidh	Na treoracha dearaidh a thaiscéaladh agus déantúsáin atá ann cheana féin a chur i láthair i bhformáid ghrafach.	1-2	50
		2	Comparáid idir na Gnéithe Dearaidh	Roghnaigh 2 íomhá agus léirigh/mínigh na príomhghnéithe dearaidh. Cuir isteach na príomhthoisí. Cuir príomhghnéithe dearaidh an dá cheann i gcomparáid agus i gcodarsnacht le chéile agus úsáid á baint as sceitsí saorláimhe oiriúnacha agus as teicnící cur i láthair eile.	1-2	
		3	Léiriú Grafach Saorláimhe	Roghnaigh ceann amháin de na déantúsáin agus déan léiriú mionsonraithe grafach den déantúsán sin. Ba chóir go mbeadh líníocht scáthaithe saorláimhe 3T d'ardchaighdeán san áireamh sa léiriú.	1	
		4	Comhaid SolidWorks Parts, Cóimeáil, Líníocht agus eDrawing	Samhail mhionsonraithe ríomhaireachta ina mbeidh 3 pháirt ar a laghad, Cóimeáil, Líníocht agus eDrawing den déantúsán roghnaithe. Cuirfear an struchtúr riachtanach comhdúcháin san áireamh sa phróiseas marcála.	Comhaid Leictreonacha SolidWorks ar dhlúthdhiosca	60
		5	Aschur cruachóipe ó SolidWorks	Clónna mionsonraithe ortagrafacha. Cló scáthaithe pictiúrtha. Cló scartha.	1-3	
		6	Léiriú Fótairéalaíoch	Íomhá(nna) f(h)ótairéalaíoch(a) den déantúsán a rinneadh ar ríomhaire.	1	
	Cuid (B) - Athrú Dearaidh nó Coincheap Dearaidh	7	Taiscéalaíocht ghrafaice ar réitigh dhearaidh	Anailís ar na treoracha dearaidh agus léiriú grafach ar réitigh fhéideartha. An réiteach/na réitigh a roghnaíodh a chosaint.	1-2	50
		8	Dearadh Athraithe / Coincheap Dearaidh a chur i láthair	Cur i láthair mionsonraithe grafach ar an Dearadh Athraithe / ar an gCoincheap Dearaidh. Ba chóir go mbeadh líníocht scáthaithe saorláimhe 3T d'ardchaighdeán san áireamh sa chur i láthair.	1	
		9	Aschur cruachóipe ó SolidWorks	Samhail CAD (Páirt/Cóimeáil, Líníocht agus eDrawing) agus na cruachóipeanna a bhaineann léi, clónna ortagrafacha leis na sonraí cuí agus íomhánna scáthaithe pictiúrtha san áireamh chun do dhearadh a chur in iúl.	1-3 (Móide comhaid leictreonacha SolidWorks ar dhlúthdhiosca)	
					Iomlán	**160**

Tasc an Dalta – Ardleibhéal – An Ardteistiméireacht, 2015

Tá tóirsí in úsáid mar fhoinsí iniompartha solais ó thosach aimsire. Tá dearadh eirgeanamaíoch ar na tóirsí nua-aimseartha a oibríonn ar leictreachas, agus tá siad ar fáil i réimse leathan foirmeacha, cruthanna, méideanna, ábhar, dathanna, etc. Tá cinn lámhshaora ann freisin a rinneadh le riachtanais áirithe a shásamh.

(A) Déan imscrúdú dearaidh ar an gcumraíocht fhisiciúil ar thóirse agus ar a chuid gnéithe. Ba chóir d'imscrúdú a bheith bunaithe ar eolas maith ar fhorbairt an earra in imeacht na haimsire.

agus

(B) Taispeáin go grafach conas a dhéanfá tóirse atá ann cheana féin a athrú go fisiciúil chun a dhearadh foriomlán a fheabhsú.

nó

Déan coincheap nua dearaidh do thóirse a fhorbairt agus a chur in iúl go grafach. Bíodh sé bunaithe ar théama nó ar fheidhm roghnaithe, agus dírithe ar spriocmhargadh áirithe.

Ba chóir an struchtúr a thugtar sna nótaí marcála thíos a leanúint sa tasc.

Tasc an Dalta - Ardleibhéal

			Teideal na Roinne	Tuairisc	Líon lch A3 a mholtar	Marc
Beidh an cur i láthair, an próiseas smaointeoireachta, an machnamh & an chéim dheacrachta á mbreithniú i rith an ama.	Cuid (A) - Déantúsáin atá ann cheana féin	1	Taighde Dearaidh	Na treoracha dearaidh a thaiscéaladh agus déantúsáin atá ann cheana féin a chur i láthair i bhformáid ghrafach.	1-2	50
		2	Comparáid idir na Gnéithe Dearaidh	Roghnaigh 2 íomhá agus léirigh/mínigh na príomhghnéithe dearaidh. Cuir isteach na príomhthoisí. Cuir príomhghnéithe dearaidh an dá cheann i gcomparáid agus i gcodarsnacht le chéile agus úsáid á baint as sceitsí saorláimhe oiriúnacha agus as teicnící cur i láthair eile.	2-3	
		3	Léiriú Grafach Saorláimhe	Roghnaigh ceann amháin de na déantúsáin agus déan léiriú mionsonraithe grafach den déantúsán sin. Ba chóir go mbeadh líníocht scáthaithe saorláimhe 3T d'ardchaighdeán san áireamh sa léiriú.	1	
		4	Comhaid SolidWorks Parts, Cóimeáil, Líníocht agus eDrawing	Samhail mhionsonraithe ríomhaireachta ina mbeidh 5 pháirt ar a laghad, Cóimeáil, Líníocht agus eDrawing den déantúsán roghnaithe. Cuirfear barainneacht maidir le dearadh, rún an dearaidh agus an struchtúr riachtanach comhdúcháin san áireamh sa phróiseas marcála.	Comhaid Leictreonacha SolidWorks ar dhlúthdhiosca	50
		5	Aschur cruachóipe ó SolidWorks	Clónna mionsonraithe ortagrafacha. Cló scáthaithe pictiúrtha. Cló scartha.	2-4	
		6	Léiriú Fótairéalaíoch	Íomhá(nna) f(h)ótairéalaíoch(a) den déantúsán a rinneadh ar ríomhaire.	1	
	Cuid (B) - Athrú Dearaidh nó Coincheap Dearaidh	7	Taiscéalaíocht ghrafaice ar réitigh dhearaidh	Anailís ar na treoracha dearaidh agus léiriú grafach ar réitigh fhéideartha. An réiteach/na réitigh a roghnaíodh a chosaint, aeistéitic, feidhmiúlacht agus inbhuanaitheacht imshaoil san áireamh.	2-4	60
		8	Dearadh Athraithe / Coincheap Dearaidh a chur i láthair	Cur i láthair mionsonraithe grafach ar an Dearadh Athraithe / ar an gCoincheap Dearaidh. Ba chóir go mbeadh líníocht scáthaithe saorláimhe 3T d'ardchaighdeán san áireamh sa chur i láthair.	1	
		9	Aschur cruachóipe ó SolidWorks	Samhail CAD (Páirt/Cóimeáil, Líníocht agus eDrawing) agus na cruachóipeanna a bhaineann léi, clónna ortagrafacha leis na sonraí cuí, íomhánna scáthaithe pictiúrtha agus íomhánna fótairéalaíocha san áireamh chun do dhearadh a chur in iúl	2-4 (Móide comhaid leictreonacha SolidWorks ar dhlúthdhiosca)	
					Iomlán	**160**