Leaving Certificate Examination, 2019

Technology

Coursework Briefs

Ordinary Level and Higher Level

200 marks

The Thematic Briefs for the Leaving Certificate Examination 2019 are given overleaf.

The Coursework must be available for assessment by Friday 29 March 2019.

Leaving Certificate Technology

Ordinary Level and Higher Level 2019

Instructions to candidates:

1. The coursework submitted for assessment must consist of two components:
   - a design folio *and*
   - an artefact.

2. If **either** assessment component (written examination or coursework) is submitted at Ordinary Level, the subject is graded at Ordinary Level.

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

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

5. Your coursework must not be removed from the school setting under **any** circumstances as doing so may result in such coursework being considered invalid.

6. The design folio should record all stages of your work and should document how the artefact meets the stated thematic brief.

7. 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.

8. The coursework should display knowledge and skills developed through your study of the core and chosen options.

9. All important operating features of the artefact must be clearly visible and be easily accessible without dismantling.

10. Where an electrical supply is used to operate the artefact, it should be of low voltage output. Where specialised equipment is required, it must be set up by you, have clear operating instructions and be ready to use.

11. The coursework presented for assessment must be displayed in an attractive manner. Multimedia presentations, where submitted, must be of **maximum** 3 minutes duration, must be set up by the candidate and must be ready for viewing.

The coursework must be available for assessment by Friday 29 March 2019.

Leaving Certificate 2019 - Ordinary Level

Thematic Brief

Weather events can be unexpected, unusual, unseasonal or even severe in nature.
In recent years more locations are experiencing extreme weather events for the first time.

The impact weather has on our lives is far-reaching. It can influence the clothing we wear, the activities we plan, the travel arrangements we make and the precautions taken to deal with extreme weather conditions.

Technologies can play a useful role when dealing with weather. They can assist in monitoring, forecasting, activating alert systems, and in helping to protect lives, livelihoods and property.

In this context, design and make a working model of a device, system or aid beneficial when responding to a weather event in a context of your choice.

Using modern materials and technologies, your model should incorporate an electronic and/or mechanical system and should be well presented.

Note: The maximum dimension of the artefact you present for assessment should not exceed 500 mm.
If multimedia presentations are used to enhance your display, a hardcopy printout and a digital file (USB flash drive) must be included in your portfolio.

Coursework at Ordinary Level is weighted as follows:

- Design Folio - 40% of marks
- Artefact - 60% of marks

Total - 200 marks

Design Folio - Ordinary Level - 80 marks			
No.	***Heading***	***Description***	***Marks***
1	Analysis, research and investigation	Analysis of thematic brief. Research into chosen area. Analysis of existing solutions.	10
2	Overall management of the project	Analysis of available resources, time and budget constraints; proposed timeframe etc.	5
3	Environmental impact	Impact of materials and production processes; product use; suitability for reuse/recycling.	5
4	Design ideas and selection of optimum solution	Annotated **freehand** sketches outlining three possible solutions. Optimum solution identified and justified.	10
5	Sketches and drawings for manufacture	Detailed annotated sketches and drawings including all elements/aspects of solution; circuit diagrams/ flowcharts/ models/prototypes/dimensions/scale/assembly details.	15
6	Production planning	Materials and component lists; scheduling, work breakdown structure, costing.	10
7	Product realisation	Sequence of manufacture including photographic record.	15
8	Evaluation and testing	Testing against chosen brief. Evaluation of final artefact. Comparison of planned schedules and actual schedules. Suggested modifications with justification.	5
9	Presentation and ICT	Correct sequence of presentation. Quality of material presented. ICT skills in production of folio.	5

Artefact - Ordinary Level - 120 marks			
No.	***Heading***	***Description***	***Marks***
1	Artefact meets theme & specification	Solution presented fulfils the thematic brief and specifications.	15
2	Creativity	Creativity in design, aesthetics & ergonomics. Creative and appropriate use of materials.	15
3	Production skills	Processing of materials. Assembly of materials and components. Range and depth of skills.	30
4	Functionality	Artefact works well. Appropriate/limited use of commercial components/solutions.	30
5	Quality and finish	High quality manufacture. Artefact well finished. Due regard for health and safety.	20
6	Presentation	Coursework well presented. Parts well integrated and labelled where appropriate.	10

Note: ***While the general headings and marks above will largely remain the same, breakdowns may vary depending on the actual brief for any given year.***

Leaving Certificate 2019 - Higher Level

Thematic Brief

Mens sana in corpore sano is a Latin phrase usually translated as "a healthy mind in a healthy body". It is widely used to highlight the positive relationship between physical and mental good health.
With regular studies and reports detailing increasing rates of mental and physical ailments experienced by many people of all ages, it is impossible to ignore the importance of fitness and wellbeing in our lives.

Technology can be used to promote physical and mental activity and to positively influence behaviour. For some time now, pedometers, accelerometers, and heart rate monitors have been used as training and motivational tools. Other technologies used to promote physical and mental engagement and activity include geographic information systems (GIS), global positioning systems (GPS), interactive video games, and 'persuasive technology'.

Some examples of areas where technologies are used in fitness and wellbeing include:

- Cardiovascular/Aerobic Conditioning
- Strength Training and Muscular Development
- Relaxation
- Education and awareness.

In this context and with a focus on modern materials and processes, design and manufacture a working model of a device, system or technological aid that would be of benefit in an area of fitness and/or wellbeing. Your solution should include an electro-mechanical element and should also be well presented.

Note: The maximum dimension of the artefact you present for assessment should not exceed 500 mm.
If multimedia presentations are used to enhance your display, a hardcopy printout and a digital file (USB flash drive) must be included in your portfolio.

Coursework at Higher Level is weighted as follows:

- Design Folio - 50% of marks
- Artefact - 50% of marks

Total - 200 marks

Design Folio - Higher Level - 100 marks			
No.	***Heading***	***Description***	***Marks***
1	Analysis of thematic brief	Evidence of research of the broader context of the theme. Specification of chosen parameters.	10
2	Overall management of the project	Analysis of available resources, time and budget constraints; proposed timeframe/Gantt chart, etc.	5
3	Environmental impact of the project	Demonstration of environmental awareness during **design and realisation**. Analysis of materials chosen for manufacture. Consideration of energy requirements, reuse/recycling etc.	10
4	Research, investigation and specifications of brief	Further research into chosen area. Analysis of existing solutions. A statement outlining the candidate's final brief and related specifications.	10
5	Design ideas and selection of optimum solution	Annotated **freehand** sketches **related to your design specification**, outlining three possible solutions. Optimum solution identified and justified.	15
6	Sketches and drawings for manufacture	Detailed annotated sketches and drawings including all elements/aspects of solution; circuit diagrams/flowcharts/models/prototypes/ dimensions/scale/assembly details.	15
7	Production planning	Materials and component list and costings; scheduling, work breakdown structure; Gantt charts, critical path diagrams.	10
8	Product realisation	Sequence of manufacture including photographic record.	10
9	Testing, evaluation and critical reflection	Testing against chosen brief. Evaluation of final artefact. Comparison of planned schedules and actual schedules. Suggested modifications with justification. Critical reflection on the entire process	10
10	Presentation and ICT	Correct sequence of presentation. Quality of material presented. ICT skills in production and presentation of folio.	5

Artefact - Higher Level - 100 marks			
No.	***Heading***	***Description***	***Marks***
1	Artefact meets theme and specifications	Solution presented fulfils the thematic brief and the specifications as identified by the candidate.	10
2	Originality and creativity	Originality and creativity in design, aesthetics and ergonomics. Creative and appropriate use of materials.	15
3	Production skills	Processing of materials. Assembly of materials. Range and depth of skills.	30
4	Functionality	Artefact works well. Appropriate/limited use of commercial components/solutions.	20
5	Quality and finish	High quality manufacture. Artefact well finished. Due regard for health and safety.	15
6	Presentation	Coursework well presented. Parts well integrated and labelled where appropriate.	10

Note: ***While the general headings and marks above will largely remain the same, breakdowns may vary depending on the actual brief for any given year.***