



*Leaving Certificate Examination, 2017*

# ***Technology***

## *Coursework Briefs*

*Ordinary Level and Higher Level*

*200 marks*

*The Thematic Briefs for the Leaving Certificate Examination 2017 are given overleaf.*

***The Coursework must be available for assessment by Friday 7 April 2017.***

# Leaving Certificate Technology

## Ordinary Level and Higher Level 2017

### 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 7 April 2017.**

## Leaving Certificate 2017 - Ordinary Level

### Thematic Brief

**All-Terrain Vehicles** (ATV's) are typically vehicles with a seat which is straddled by the operator and usually have handlebars for steering and control of braking and acceleration. As the name implies, they are designed to travel safely over a wide variety of surfaces and environments.

The manoeuvrability and adaptability of ATVs makes them suitable for use in a wide range of applications including:

Construction, emergency medical services, management of forestry and parklands, military/border patrol duties, farming and herding, oil and mineral exploration, etc.

*In this context, design and make a working model of an ATV that could be used in any of the above applications or in an application 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 CD 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

<b>Design Folio - Ordinary Level - 80 marks</b>			
<b>No.</b>	<b>Heading</b>	<b>Description</b>	<b>Marks</b>
1	Analysis, research and investigation	Analysis of thematic brief. Research into chosen area. Analysis of existing solutions.	30
2	Overall management of the project	Analysis of available resources, time and budget constraints; proposed timeframe etc.	
3	Environmental impact	Impact of materials and production processes; product use; suitability for reuse/recycling.	
4	Design ideas and selection of optimum solution	Annotated sketches and drawings outlining three possible solutions. Optimum solution identified and justified.	
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.	40
6	Production planning	Materials and component lists; scheduling, work breakdown structure, costing.	
7	Product realisation	Sequence of manufacture including photographic record.	
8	Evaluation and testing	Testing against chosen brief. Evaluation of final artefact. Comparison of planned schedules and actual schedules. Suggested modifications with justification.	10
9	Presentation and ICT	Correct sequence of presentation. Quality of material presented. ICT skills in production of folio.	

<b>Artefact - Ordinary Level - 120 marks</b>			
<b>No.</b>	<b>Heading</b>	<b>Description</b>	<b>Marks</b>
1	Artefact meets theme & specification	Solution presented fulfils the thematic brief and specifications.	30
2	Creativity	Creativity in design, aesthetics & ergonomics. Creative and appropriate use of materials.	
3	Production skills	Processing of materials. Assembly of materials and components. Range and depth of skills.	60
4	Functionality	Artefact works well. Appropriate/limited use of commercial components/solutions.	
5	Quality and finish	High quality manufacture. Artefact well finished. Due regard for health and safety.	30
6	Presentation	Coursework well presented. Parts well integrated and labelled where appropriate.	

**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 2017 - Higher Level

### Thematic Brief

High standards of hygiene, cleanliness and an orderly tidiness are taken for granted in many facets of life in developed countries. The need to achieve these standards can be found in the home, at work, at leisure and in public areas such as the streets, parks and playgrounds of cities and towns.

Cleaning, litter control and waste disposal is carried out for many reasons including the protection of health and to improve visibility, operational conditions and safety. Cleaning and maintenance operations can also help to extend the useful life cycle of a product or can contribute to an environment functioning/performing at its optimum.

Ongoing improvements in the application of technologies has seen many devices and systems developed or refined to aid the processes of cleaning and maintenance. Examples of such devices include vacuum cleaners, high rise work platforms and scissor lifts, road cleaning machines, sterilisation systems, handwashing units and countless others. Some applications operate to a predetermined schedule, some actuate in response to changes in their environment and others rely on human activation and control but all contribute to a cleaner, safer world.

*In this context and with a focus on modern materials and processes, design and manufacture a model of a device, system or technological aid that could be used in a process of cleaning or maintenance in a context of your choice. 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 500mm.

If multimedia presentations are used to enhance your display, a hardcopy printout and a CD 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

<b>Design Folio - Higher Level - 100 marks</b>			
<b>No.</b>	<b>Heading</b>	<b>Description</b>	<b>Marks</b>
1	Analysis of thematic brief	Evidence of research of the broader context of the theme. Specification of chosen parameters.	50
2	Overall management of the project	Analysis of available resources, time and budget constraints; proposed timeframe/Gantt chart, etc.	
3	Environmental impact	Demonstration of environmental awareness during design and realisation. Analysis of materials chosen for manufacture. Consideration of energy requirements, reuse/recycling etc.	
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.	
5	Design ideas and selection of optimum solution	Annotated sketches and drawings <b>related to your design specification</b> , outlining three possible solutions. Optimum solution identified and justified.	
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.	35
7	Production planning	Materials and component lists; costing; scheduling, work breakdown structure; Gant charts, critical path diagrams.	
8	Product realisation	Sequence of manufacture including photographic record.	
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	15
10	Presentation and ICT	Correct sequence of presentation. Quality of material presented. ICT skills in production and presentation of folio.	

<b>Artefact - Higher Level - 100 marks</b>			
<b>No.</b>	<b>Heading</b>	<b>Description</b>	<b>Marks</b>
1	Artefact meets theme and specifications	Solution presented fulfils the thematic brief and the specifications as identified by the candidate.	30
2	Originality and creativity	Originality and creativity in design, aesthetics and ergonomics. Creative and appropriate use of materials.	
3	Production skills	Processing of materials. Assembly of materials. Range and depth of skills.	45
4	Functionality	Artefact works well. Appropriate/limited use of commercial components/solutions.	
5	Quality and finish	High quality manufacture. Artefact well finished. Due regard for health and safety.	25
6	Presentation	Coursework well presented. Parts well integrated and labelled where appropriate.	

**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.*