



Coimisiún na Scrúduithe Stáit  
State Examinations Commission

**LEAVING CERTIFICATE EXAMINATION, 2021**

**ENGINEERING – TECHNOLOGY PROJECT: MANUFACTURE**

**Ordinary Level – 150 marks**

**PROJECT MUST BE COMPLETED BY FRIDAY 5<sup>th</sup> MARCH, 2021**

**PLEASE READ CAREFULLY**

**General directions to candidates**

1. The project you submit for examination must be **your own individual work**, carried out in the school under the supervision of the teacher.

**Your own individual work** is intended to include the practical activities of making the model and compiling a folio.

Proof of **your own individual work** must be obvious from both the model and folio presented for examination otherwise marks will be lost.

**Note:** Where computer aided manufacture (CAM) is used, supporting CAD files/drawings must accompany the design folio to authenticate **your own individual work**.

2. A detailed Marking Scheme is included on this paper. Your teacher will help you to familiarise yourself with the Marking Scheme.
3. Read the Project Brief carefully commencing with the **Introduction**. Plan and present your individual project as outlined in the instructions given under the headings **Planning and Organisation** and **Project Manufacture**.
4. Your completed project consisting of a model and design folio, **both clearly identified with your examination number**, must be available to the visiting examiner.

# Project Brief

## 1. Introduction

Make a **Model eRacer** according to the example shown or according to an alternative design **based on the example shown (Page 3 of 4)**.

## 2. Planning and Organisation (40 marks)

You are required to compile a folio detailing the following aspects of your work:

- (a) **Planning details** required before undertaking the task or alternative design details;
- (b) **Parts list** and **working drawings**;
- (c) Organisational plan, indicating the **manufacturing processes, materials and finishing treatments** to be used;
- (d) **Testing and evaluation** of the finished model including special instructions, if necessary, regarding the testing of the model by an examiner.

**Note: Marks are awarded as shown in Marking Scheme (Page 4 of 4).**

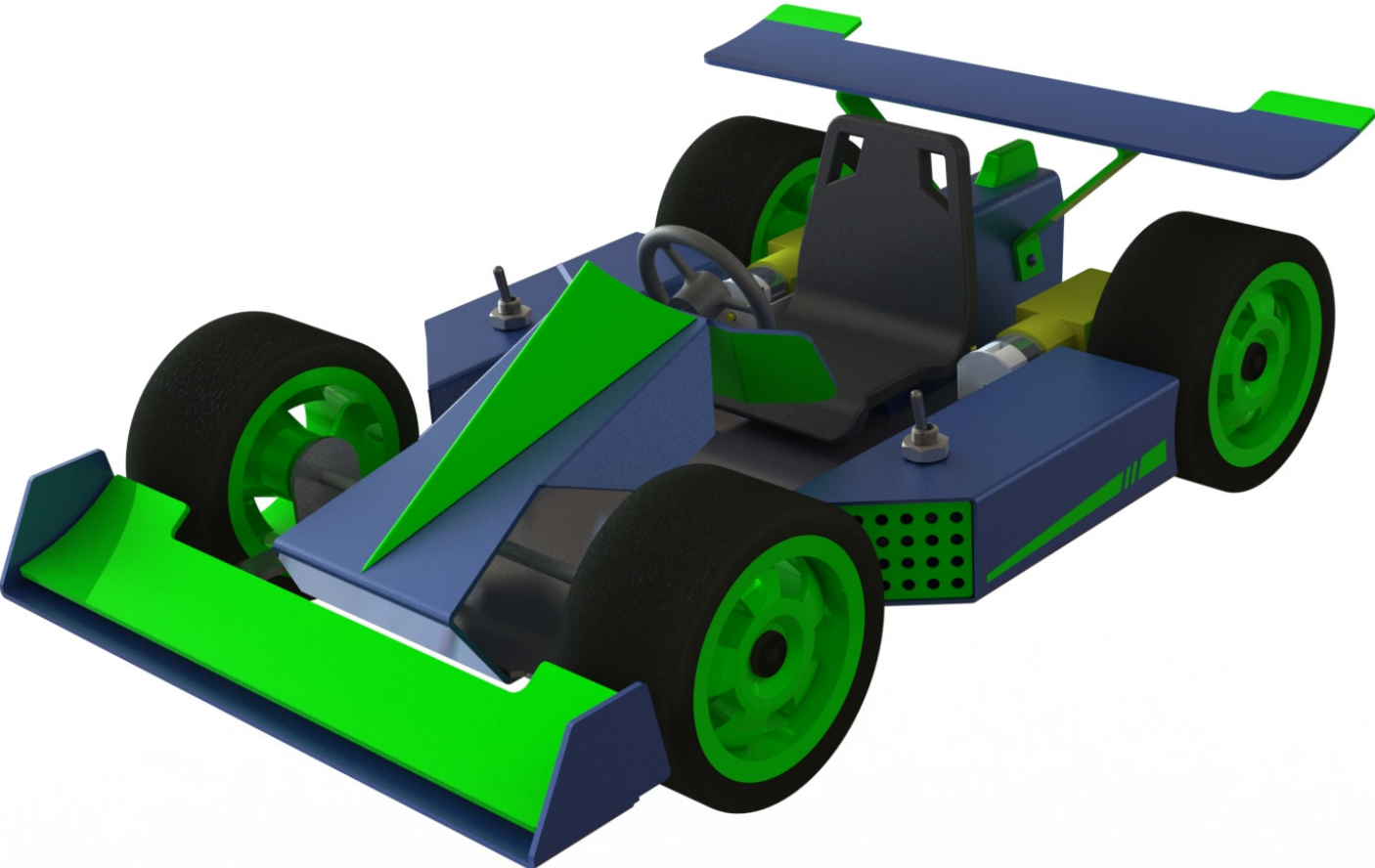
## 3. Project Manufacture (110 marks)

**Special Note: Modified toys or recycled projects are not acceptable.**

- (a) Using appropriate materials and processes make the model according to your plans which should include:
  - (i) An electrical drive for the model by means of an ON/OFF switch;
  - (ii) Seating for one person.
- (b) **The use of bought-in electronic solutions will result in lost marks.**
- (c) All main operating features of the completed model to be **clearly visible without dismantling**.
- (d) The longest dimension should not exceed **350 mm**.
- (e) Electric power should not exceed **9 volts**.

**Note: Marks are awarded as shown in Marking Scheme (Page 4 of 4).**

**MODEL *eRACER***



#### 4. Project presentation

Your completed project consisting of a model and folio, **both clearly identified with your examination number**, must be available to the visiting examiner.

Marks are awarded for **quality of presentation and finished appearance of both folio and model.**

### MARKING SCHEME

ORDINARY LEVEL	
MARKING CRITERIA - FOLIO	
Planning/Alternative design details	5 marks
Parts list/Working drawings	10 marks
Work plan/Manufacturing processes	10 marks
Materials and finishes	5 marks
Testing and Evaluation	5 marks
Presentation of Folio	5 marks
<b>TOTAL</b>	<b>40 marks</b>

**Note:** Where computer aided manufacture (CAM) is used, supporting CAD files/drawings must accompany the design folio to authenticate **your own individual work.**

ORDINARY LEVEL	
MARKING CRITERIA - MODEL	
Model satisfies specification	10 marks
Constraints observed	10 marks
Use of materials	10 marks
Use of processes	10 marks
Function (does it work?)	10 marks
Safety considerations	10 marks
Assembly techniques	10 marks
Suitability of parts and functions	10 marks
Application of skills	10 marks
Quality of work	5 marks
General and detailed appearance	5 marks
Presentation of model	10 marks
<b>TOTAL</b>	<b>110 marks</b>