

5.1.4 Product Development

 IT2.2, WO1.1, WO1.2, WO2.1, LP1.2, PS2.2

Candidates should be able to:

- (a) conduct testing or trialling to make decisions on materials, production processes and selection of pre-manufactured standard components;
- (b) model the final design to determine the degree of accuracy required for the product to function as planned;
(1g)
- (c) determine as a result of modelling, testing or trialling the critical dimensions and tolerances that will determine the method for production of a small batch;
(1e)
- (d) make any necessary modifications;
(1f)
- (e) consider the possibilities and implications for batch production as well as for a prototype;
- (f) use graphic techniques and ICT, including computer-aided design (CAD), to generate, develop, model and communicate design proposals.
(1g)

Range of activities:

appropriate testing to determine: optimum sizes of product, materials, degree of accuracy, production method and appearance

modification of component values and product packaging

mounting of PCB's, batteries, etc.
determine all the details needed to manufacture the product in a batch of 50 using the facilities available. *Use CAD to model and test (Prodesktop, Autocad)*

mounting of switches, sockets, etc.
using appropriate marking and machining

text, computer images, working drawings, PCB layout, material/components lists

graphic techniques and computer-aided design (CAD) used to generate, develop, model and communicate design proposals

5.1.5 Product Planning

 WO2.2, LP1.1, LP2.1, PS2.2

Candidates should be able to:

(a) produce and use a detailed plan of work including:

- manufactured items;
- materials;
- equipment;
- tools and processes;
- consideration of health and safety issues against a realistic time schedule.

(1d) (3b)

(b) prepare materials economically allowing for waste and fine finish; use pre-manufactured standard components appropriately.

Range of activities:

a proposed work plan which sets realistic deadlines *and identifies critical points*

efficient material preparation
Use of database to identify components.