

Summary

Topic 1 - Human Factors and Ergonomics

Subject	Year	Start date	Duration
Design Technology	IB1	Week 1, October	4 weeks 12 hours

Course Part

Description

The areas of study within this topic are:

- Anthropometrics
- Psychological factors
- Physiological factors

Inquiry & Purpose

? Inquiry / Higher Order Questions

Type

Inquiry Questions

Concept-based

Are products designed with the user in mind or modified to suit the user after the conceptual design?

Curriculum

🎯 Aims

Enable students, through the overarching theme of the nature of design, to develop:

Initiative in applying thinking skills critically and creatively to identify and resolve complex social and technological problems through reasoned ethical decision-making

◇ Objectives

Demonstrate knowledge and understanding of

design methodology and technology

📖 Syllabus Content

Core

1. Human factors and ergonomics

1.1a Anthropometrics

Anthropometric data: static and dynamic data, structural and functional data

Primary data versus secondary data

Percentiles and percentile ranges

Range of sizes versus adjustability

Clearance, reach and adjustability

1.1b Psychological factors

Psychological factor data

Human information processing systems

Effect of environmental factors

Alertness

Perception

1.1c Physiological factors

Physiological factor data

Comfort and fatigue

Biomechanics

Concepts

- Anthropometric data: static and dynamic data, structural and functional data
- Primary data versus secondary data
- Percentiles and percentile ranges
- Range of sizes versus adjustability
- Clearance, reach and adjustability
- Psychological factor data
- Human information processing systems
- Effect of environmental factors
- Alertness
- Perception
- Physiological factor data
- Comfort and fatigue
- Biomechanics

ATL Skills

Approaches to Learning

Thinking

- In this unit, we will
 - give students time to think through their answers before asking them for a response
 - ask open questions
 - set students a task which required higher-order thinking skills (such as analysis or evaluation)

Social

- In this unit, we will
 - encourage students to consider alternative points of view or to take the perspective of others

Developing IB Learners

Learner Profile

-  Inquirers
-  Thinkers
-  Caring

Assessment

Assessment criteria

SL Criteria

External Assessment

Paper 2

- A: Data-based and short-answer questions on the core material
- B: Extended-response question on the core material

HL Criteria

External Assessment

Paper 2

- A: Data-based and short-answer questions on the core material
- B: Extended-response question on the core material

IB DP IB1 DT 2020/21 HL (IB1)

Description