

Unit 3 - Week 1

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| ○ Lecture 3 : Design Stages |
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| ○ Lecture 5 : The Design Spiral |
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Assignment 1

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-09-30, 23:59 IST.

- 1) Which of the following affect(s) the Customer Specifications? 1 point
- Market requirements
 Operational requirements
 Forecasts of the economic situation in future
 Technological developments
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
Market requirements
Operational requirements
Forecasts of the economic situation in future
Technological developments
- 2) Which of the following task(s) is/are carried out during Conceptual Phase of aircraft design? 1 point
- Estimate component masses, performance, and cost
 Freeze the configuration
 Ensure design practicality
 Carry out initial sizing & layout
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
Estimate component masses, performance, and cost
Carry out initial sizing & layout
- 3) Which of the following task(s) is/are carried out in the Preliminary Design Stage? 1 point
- Evaluating the competing concepts
 Establishing the performance goals
 Selecting the preferred concepts
 Carrying out the refined sizing
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
Carrying out the refined sizing
- 4) Which of the following tasks are not carried out in the Conceptual Design Stage? 1 point
- Establish concept feasibility
 Identify requirements that drive the design
 Ensure design practicality
 Carry out initial sizing & layout
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
Ensure design practicality
- 5) Initial sizing in the aircraft design stands for 1 point
- the initial geometrical sizing of the aircraft based on the specified requirements and operational constraints
 determination of the aircraft layout and configuration on the specified requirements and operational constraints
 the first estimate of the design gross weight based on the specified requirements and operational constraints
 the first estimate of the engine requirements for the specified requirements and operational constraints
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
the first estimate of the design gross weight based on the specified requirements and operational constraints
- 6) Which of the following statement(s) is/are TRUE according to the concept of Design Spiral? 1 point
- The scope for taking decisions becomes smaller as we progress in the aircraft design process
 We get more knowledge and information about the aircraft design as we progress in the design process
 Aircraft Design revolves around the Decision, Synthesis and Analysis of the various concepts
 Decisions taken in the initial stages stages of the aircraft design process will affect the room available for decision making in the later stages
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
The scope for taking decisions becomes smaller as we progress in the aircraft design process
We get more knowledge and information about the aircraft design as we progress in the design process
Aircraft Design revolves around the Decision, Synthesis and Analysis of the various concepts
Decisions taken in the initial stages stages of the aircraft design process will affect the room available for decision making in the later stages
- 7) On what basis is/are the "Airworthiness Requirements" specified ? 1 point
- customer satisfaction survey
 previous experience
 safety of operation
 uniformity & standardization in reporting data
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
previous experience
safety of operation
uniformity & standardization in reporting data
- 8) Match the tasks carried out with their respective stages in the aircraft design process. 1 point
- Tasks:
a. Establishing the performance goals
b. Development of the test and analytical base
c. Identification of the requirements that drive the design
d. Refined sizing
e. Detailed performance estimation
- Aircraft Design Stages:
1. Conceptual Design Stage
2. Preliminary Design Stage
3. Detailed Design Stage
- a - 1, b - 2, c - 1, d - 2, e - 3
 a - 1, b - 1, c - 2, d - 2, e - 3
 a - 1, b - 2, c - 1, d - 3, e - 3
 a - 2, b - 2, c - 1, d - 1, e - 3
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
a - 1, b - 2, c - 1, d - 2, e - 3
- 9) What fraction of the Life Cycle Cost is committed by the decisions taken in the Concept Exploration phase ? 1 point
- around 10 - 15 %
 around 20 - 25 %
 around 40 - 45 %
 around 60 - 65 %
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
around 60 - 65 %
- 10) What is the percentage of total effort involved in the Conceptual Design stage ? 1 point
- around 0.5 %
 around 1 %
 around 5 %
 around 10 %
- No, the answer is incorrect.**
Score: 0
Accepted Answers:
around 1 %