NOCTI

Partner Credential Blueprint

SREB

Aerospace Engineering - Course 3

Code: 9032

AEROSPACE ENGINEERING – COURSE 3

Test Code: 9032
Version: 01

Specific Competencies and Skills Tested in this Assessment:

Information about the AC course standards can be found in the front of the AC course teacher guide.

CTE
1C Conduct Model CTE
2. Data Collection CTE
2A Create Testing CTE
3B Analyze Flight CTE
3G Analyze Aircraft CTE
4C Select and Defend Materials CTE
5A Using Navigation Tools CTE
7A Predict and Analyze CTE
7C Design Practical CTE
7F Design and Create CTE
7H Design Environments CTE
8 Remote Vehicle Systems CTE
9E Design and Create CTE
Create Programming CTE
10E Critique Methods CTE
10F Use Industry Standard CTE

Literacy
RST 11-12.1 Literacy
11-12.1 Literacy
11.12.2 Literacy
RST 11.12.4 Literacy
RST.11-12.10 Literacy

Aerospace Engineering – Course 3 (continued)

Math
A.CED.2 Math
F.IF.7 Math
G.SRT.8 Math
G.SRT.11 Math
S.ID.6 Math

Science
HS-ETS 1-1 Science
HS-ETS 1-2 Design Science
HS-ETS 1-3 Evaluate Science
HS-ETS 1-4 Science
HS-ETS 1-4 Using a Computer Science
HS-PS 2-6 Communicate Science

Written Assessment:

Administration Time: unlimited
Number of Questions: 51

Areas covered:

53%	CTE
22%	Literacy
10%	Math
16%	Science

Sample Questions:

Why are details so important in documenting your model prototypes?
A. Cost is the most important constraint
B. You should clearly explain why carbon fiber materials have much higher strength in some dimensions
C. You should explain why epoxy resins are used to create carbon fiber composites
D. You should explain why aluminum is inferior to carbon fiber

Letting P(8, 4, 5) and Q(-2, 6, 1) be vectors, what is the length and magnitude of the resultant vector P + Q?
A. P + Q = (10, 10, 6); Magnitude = $\sqrt{26}$
B. P + Q = (10, 10, 6); Magnitude = $2\sqrt{59}$
C. P + Q = (6, 10, 6); Magnitude = $2\sqrt{43}$
D. P + Q = (6, 10, 6); Magnitude = $\sqrt{22}$

Why should you use a simulator to experiment with the design of an aircraft?
A. Simulation allows designers to explore a wide variety of designs quickly without the time and expense of building physical prototypes
B. Simulation provides designers a way of showing customers what the end product may look like
C. Simulation simplifies the mathematics behind the interaction of systems and components
D. Simulation can identify potential failure modes