

Open Systems and Advanced Manufacturing Technologies L1



[1]

[2]

[3]

Level 1

Level 1, Unit 1 - The Understanding of Rocket Design and Manufacture (3 credits)

1. 1. Understanding the environment rockets work in and the materials used

[1.1 I can list a number of materials used for rocket manufacture](#) [4]

[1.2 I can explain some of the material properties](#) [7]

[1.3 I can list the environmental issues that inform rocket manufacture](#) [10]

[1.4 I can explain how the environment affects design decisions](#) [13]

[1.5 I can explain my findings and thoughts to an audience for feedback](#) [16]

2. 2. Testing and making a variety of rockets and exploring their construction

[2.1 I can experiment with materials and make notes for manufacture](#) [5]

[2.2 I can test the aspects of materials for rocket making](#) [8]

[2.3 I can explain the properties of materials and relate these to the rocket's possible success](#) [11]

[2.4 I can test built rockets on simple flight tasks](#) [14]

[2.5 I can summarise my findings in a clear way](#) [17]

3. 3. Investigating uses for rockets and materials

[3.1 I can list the different ways rockets are currently used](#) [6]

[3.2 I can common on future uses for rocket technology](#) [9]

[3.3 I can explain new manufacturing tools and techniques used for rocket production](#) [12]

[3.4 I can explain the most suitable approaches to manufacturing I have discovered](#) [15]

[3.5 I can predict some developments in rocket manufacturing in the coming years](#) [18]

Level 1, Unit 2 - The Understanding of Microsatellite Design and Manufacture (3 credits)

1. 1. Understanding why microsatellites are made and the manufacturing guidelines

[1.1 I can list some of the current uses of microsatellites](#) [20]

[1.2 I can explain some of the dangers of microsatellites](#) [23]

[1.3 I can list the advances in manufacturing that have helped microsatellite production](#) [26]

[1.4 I can list the materials used in microsatellites](#) [29]

[1.5 I can comment on the suitability of manufacturing materials and processes](#) [32]

2. 2. Designing, creating and testing a microsatellite

[2.1 I can create some rough sketched designs of a new microsatellite](#) [21]

[2.2 I can label my designs for clarity and explain their purpose](#) [24]

[2.3 I can turn my sketches into digital images](#) [27]

[2.4 I can explain the equipment used in my design](#) [30]

[2.5 I can include the needs of a potential client in my designs](#) [33]

3. 3. Explaining how and why my microsatellite will be used

[3.1 I can list the main uses of microsatellites](#) [22]

[3.2 I can explain the data microsatellites can capture](#) [25]

[3.3 I can explain, with examples, the features of my microsatellite](#) [28]

[3.4 I can list the uses for my design](#) [31]

[3.5 I can explain to a potential client the purpose of my microsatellite design](#) [34]

Level 1, Unit 3 - The Exploration of Robotics and Artificial Intelligence (3 credits)

1. 1. Understanding the different uses for robots and AI

[1.1 I can list the different types of robot used by sector](#) [36]

[1.2 I can list the way AI is](#)

2. 2. Testing different robot devices and AI systems

[2.1 I can explain with an industry example how robots are controlled](#) [37]

[2.2 I can investigate some](#)

3. 3. Exploring the future uses of robotics and AI and the impact on my world

[3.1 I can make a prediction about the uses of robots in the future](#) [38]

[3.2 I can make a](#)

[used in different sectors](#) [39]

[of the materials used in robot manufacture](#) [40]

[prediction about the use of AI in the future](#) [41]

[1.3 I can explain the ways robots are controlled](#) [42]

[2.3 I can practice controlling a robot](#) [43]

[3.3 I can explain how robots and AI might affect my future](#) [44]

[1.4 I can comment on some of the issues for society posed by robots and AI](#) [45]

[2.4 I can list how AI is used in key industries](#) [46]

[3.4 I can discuss ways that robots and AI will help the world](#) [47]

[1.5 I can explain my concerns about robots and AI](#) [48]

[2.5 I can test the AI functions of a common system](#) [49]

[3.5 I can discuss the ways robots and AI might harm the world](#) [50]

Level 1, Unit 4 - Working with and Understanding Unmanned Vehicles (3 credits)

1. 1. Understanding the range of unmanned vehicles

[1.1 I can list a variety of unmanned vehicles](#) [52]

[1.2 I can list some of the uses for unmanned vehicles](#) [55]

[1.3 I can explain some of the uses of unmanned vehicles](#) [58]

[1.4 I can explain some of the limitations of unmanned vehicles](#) [61]

[1.5 I can explain some future uses of unmanned vehicles](#) [64]

2. 2. Testing and evaluating unmanned vehicles for particular uses

[2.1 I can list materials used in unmanned vehicles](#) [53]

[2.2 I can explain the choice of materials used in unmanned vehicles](#) [56]

[2.3 I can test the basic functions of an unmanned vehicle](#) [59]

[2.4 I can explain the limitations of unmanned vehicles I have found](#) [62]

[2.5 I can explain the impact of unmanned vehicles on general manufacturing processes](#) [65]

3. 3. Exploring the use of unmanned vehicles and their future uses

[3.1 I can comment on the need for unmanned vehicles](#) [54]

[3.2 I can explain the issues surrounding unmanned vehicles](#) [57]

[3.3 I can list the benefits of unmanned vehicles](#) [60]

[3.4 I can explain the dangers of unmanned vehicles](#) [63]

[3.5 I can present my findings on the future of unmanned vehicles](#) [66]

Source URL: <https://theingots.org/community/rocketry1>

Links

- [1] http://theingots.org/community/rocket_resources
- [2] <https://register.ofqual.gov.uk/Detail/Index/41233?category=qualifications&query=TLM%20Level%201%20Certificate%20in%20Open%20Systems%20and%20Advanced%20Manufacturing%20Technologies>
- [3] https://theingots.org/community/RQF_Levels
- [4] <https://theingots.org/community/osamtl1u1x#1.1>
- [5] <https://theingots.org/community/osamtl1u1x#2.1>
- [6] <https://theingots.org/community/osamtl1u1x#3.1>
- [7] <https://theingots.org/community/osamtl1u1x#1.2>
- [8] <https://theingots.org/community/osamtl1u1x#2.2>
- [9] <https://theingots.org/community/osamtl1u1x#3.2>
- [10] <https://theingots.org/community/osamtl1u1x#1.3>
- [11] <https://theingots.org/community/osamtl1u1x#2.3>
- [12] <https://theingots.org/community/osamtl1u1x#3.3>
- [13] <https://theingots.org/community/osamtl1u1x#1.4>
- [14] <https://theingots.org/community/osamtl1u1x#2.4>
- [15] <https://theingots.org/community/osamtl1u1x#3.4>
- [16] <https://theingots.org/community/osamtl1u1x#1.5>
- [17] <https://theingots.org/community/osamtl1u1x#2.5>
- [18] <https://theingots.org/community/osamtl1u1x#3.5>
- [19] <https://theingots.org/community/osamtl1u1i>
- [20] <https://theingots.org/community/osamtl1u2x#1.1>
- [21] <https://theingots.org/community/osamtl1u2x#2.1>
- [22] <https://theingots.org/community/osamtl1u2x#3.1>
- [23] <https://theingots.org/community/osamtl1u2x#1.2>
- [24] <https://theingots.org/community/osamtl1u2x#2.2>
- [25] <https://theingots.org/community/osamtl1u2x#3.2>
- [26] <https://theingots.org/community/osamtl1u2x#1.3>
- [27] <https://theingots.org/community/osamtl1u2x#2.3>
- [28] <https://theingots.org/community/osamtl1u2x#3.3>
- [29] <https://theingots.org/community/osamtl1u2x#1.4>
- [30] <https://theingots.org/community/osamtl1u2x#2.4>
- [31] <https://theingots.org/community/osamtl1u2x#3.4>
- [32] <https://theingots.org/community/osamtl1u2x#1.5>
- [33] <https://theingots.org/community/osamtl1u2x#2.5>
- [34] <https://theingots.org/community/osamtl1u2x#3.5>
- [35] <https://theingots.org/community/osamtl1u2i>
- [36] <https://theingots.org/community/osamtl1u3x#1.1>
- [37] <https://theingots.org/community/osamtl1u3x#2.1>
- [38] <https://theingots.org/community/osamtl1u3x#3.1>
- [39] <https://theingots.org/community/osamtl1u3x#1.2>
- [40] <https://theingots.org/community/osamtl1u3x#2.2>
- [41] <https://theingots.org/community/osamtl1u3x#3.2>
- [42] <https://theingots.org/community/osamtl1u3x#1.3>
- [43] <https://theingots.org/community/osamtl1u3x#2.3>
- [44] <https://theingots.org/community/osamtl1u3x#3.3>
- [45] <https://theingots.org/community/osamtl1u3x#1.4>
- [46] <https://theingots.org/community/osamtl1u3x#2.4>
- [47] <https://theingots.org/community/osamtl1u3x#3.4>
- [48] <https://theingots.org/community/osamtl1u3x#1.5>
- [49] <https://theingots.org/community/osamtl1u3x#2.5>
- [50] <https://theingots.org/community/osamtl1u3x#3.5>
- [51] <https://theingots.org/community/osamtl1u3i>

- [52] <https://theingots.org/community/osamtl1u4x#1.1>
- [53] <https://theingots.org/community/osamtl1u4x#2.1>
- [54] <https://theingots.org/community/osamtl1u4x#3.1>
- [55] <https://theingots.org/community/osamtl1u4x#1.2>
- [56] <https://theingots.org/community/osamtl1u4x#2.2>
- [57] <https://theingots.org/community/osamtl1u4x#3.2>
- [58] <https://theingots.org/community/osamtl1u4x#1.3>
- [59] <https://theingots.org/community/osamtl1u4x#2.3>
- [60] <https://theingots.org/community/osamtl1u4x#3.3>
- [61] <https://theingots.org/community/osamtl1u4x#1.4>
- [62] <https://theingots.org/community/osamtl1u4x#2.4>
- [63] <https://theingots.org/community/osamtl1u4x#3.4>
- [64] <https://theingots.org/community/osamtl1u4x#1.5>
- [65] <https://theingots.org/community/osamtl1u4x#2.5>
- [66] <https://theingots.org/community/osamtl1u4x#3.5>
- [67] <https://theingots.org/community/osamtl1u4i>