

**apprenticeship Initial Needs Assessment (sYSTEMS ENGINEERING)**

The purpose of this assessment is to understand where you have previous knowledge and skills that are also included as part of your apprenticeship. Loughborough University is required to work with you to understand these and assess whether these would be duplicated in your apprenticeship. If we decide to reduce your apprenticeship and accredit your prior learning this will reduce the time and cost of your apprenticeship.

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| Apprentice Name  |  | ULN | *Provided by Loughborough University* | Application No |  |
| Phone |  | Email  |  |
| Organisation  |  |
| Apprenticeship | Level 7 Systems Engineering |
| **SECTION 1 PRIOR QUALIFICATIONS & LEARNING**  |
| **Please select one box below that best describes your current highest level of educational or vocational learning**  |
| [ ]  (9) Entry level[ ]  (7) Other qualifications below level 1[ ]  (1) Level 1[ ]  (2) Full level 2[ ]  (3) Full level 3 | [ ]  (10) Level 4[ ]  (11) Level 5[ ]  (12) Level 6[ ]  (13) Level 7 and above | [ ]  (97) Other qualification, level not known[ ]  (98) Not known[ ]  (99) No qualifications |
| **Please detail any qualifications fully or partly achieved in the last 5 years (please include all qualifications, whether related to this apprenticeship/your current role or not)**  |
| **Year Achieved** | **RefNo.** | **Qualification or / and Apprenticeship Name and Level**  | **Content Overview****Please describe the main modules or topics studies in each qualification** | **Awarding Organisation/ Certificate Number**  |
|  | **1** |  |  |  |
|  | **2** |  |  |  |
|  | **3** |  |  |  |
| **Functional Skills Maths and English** |
| I confirm that I hold an English & Maths GCSE or equivalent qualification I confirm I have already uploaded documentary evidence of this  | Yes [ ]  No[ ] Yes [ ]  No[ ]  | I am unable to provide evidence of an English & Maths GCSE or equivalent qualification and will require a Functional Skills assessment, in preparation for an English and/or Maths qualificationEnglish [ ]  Maths [ ]  Both [ ]  |

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| SECTION 2 SKILLS SCAN |

You are required to assess your current competencies against the Level 7 Systems Engineering assessment plan. On pages 2 and 3, you need to work through each group, which covers the various assessments you undertake during the apprenticeship and confirm on a scale of 1-4 your current competency level against the minimum levels required. To navigate the document please press Ctrl key and click on each group hyperlink to be taken to the specific section you are reviewing in the assessment plan.

1. I have no experience of this and will need support to gain experience and evidence.
2. I need to do this. I do not do this in my current role, and I need experience of this.
3. I currently do this in my job, but I need further training and experience.
4. I do not need this. I have formal training in the underpinning theories. I can **confidently demonstrate** these skills and behaviours **and can provide evidence** to support this.

| **Competency** | **KSB** | **Minimum competency level** | **How competent am I?** | **Comments** | **Follow up?** |
| --- | --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** |
| [**Group 1. Assessment 1: Report, Presentation and Questions**](#_Group_1._Assessment)(pg 5-6) |
| System Thinking | S2, B1 | Practitioner  | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Requirements Definition  | K3, S3 | Practitioner | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 1. Assessment 2: Professional Discussion**](#_Group_1._Assessment_1)(pg 7) |
| Ethics and Professionalism  | K15, B4, B5 | Supervised Practitioner | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 2. Assessment 1: Report, Presentation and Questions**](#_Group_2._Assessment)(pg 8-9) |
| Lifecycles | K1, S1 | 1 at Practitioner1 at Supervised Practitioner1 at Awareness | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Capability Engineering | K2 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Critical Thinking  | B3 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 2. Assessment 2: Professional Discussion**](#_Group_2._Assessment_1) (pg 10-11) |
| Systems Modelling and Analysis | K5, S5 | 1 at Practitioner1 at Awareness | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| General Engineering | K14 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 3. Assessment 1: Report, Presentation and Questions**](#_Group_3._Assessment)(pg 11) |
| Communications | S12 | Supervised Practitioner  | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 3. Assessment 2: Professional Discussion**](#_Group_3._Assessment_1)(pg 11-13) |
| Technical Leadership | K6, S6, S21, B7 | 1 at Supervised Practitioner 1 at Awareness | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Negotiation | B2 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 4. Assessment 1: Report, Presentation and Questions**](#_Group_4._Assessment)(pg 13-15) |
| Design for… | K8 | 1 at Practitioner 1 at Awareness | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Verification | K11, S10 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 4. Assessment 2: Professional Discussion**](#_Group_4._Assessment_1)(pg 15-23) |
| System Architecting | K7, S7, S22 | 1 at Practitioner 2 at Supervised Practitioner 3 at Awareness  | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Integration | K9, S9 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Interfaces | K10, S8 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Validation  | K12, K13, S11 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Transition | K12, S13 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Operation and Support | K16, S15, S14, B6 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 5. Assessment 1: Report, Presentation and Questions**](#_Group_5._Assessment)(pg 23-25) |
| Planning | K19, S20 | 1 at Practitioner1 at Supervised Practitioner | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Risk and Opportunity | K4, S4 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 5. Assessment 2: Professional Discussion**](#_Group_5._Assessment_1)(pg 25-27) |
| Monitoring and Control | S14 | 1 at Practitioner1 at Supervised Practitioner 1 at Awareness | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Information Management  | K20, S19 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Configuration Management | K20, S18 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 6. Assessment 1: Report, Presentation and Questions**](#_Group_6._Assessment)(pg 27-28) |
| Project Management | K17, K19, S16 | Supervised Practitioner | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| [**Group 6. Assessment 2: Professional Discussion**](#_Group_6._Assessment_1)(pg 28-29) |
| Finance | K18 | 3 at Awareness | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Logistics | K21 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |
| Quality | S17 | [ ]  | [ ]  | [ ]  | [ ]  |  | [ ]  |

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| Group 1. Assessment 1: Report, Presentation and Questions [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Systems Thinking** |
| S2 Define context of a system from a range of viewpoints including system boundaries and external interfaces  | **Applied Systems Thinking****Systems Architecture****Group Systems Project****Verification and Validation****Systems Design****Holistic Engineering****Engineering and Managing Capability****Modelling, Simulation and Visualization for Engineering****Manufacturing Processes and Automation** | n/a | n/a | Has* Selected and applied appropriate systems thinking approaches to demonstrate this skill
* Lead a team systems thinking activity aligned to purpose of an activity in which they were involved
 |
| B1 Adopt an holistic thinking approach to system development  | n/a | n/a | Can explain * Enterprise and technology issues affecting design of a system and their application of systems thinking techniques to address them

Can identify * Systems concepts in the behaviour of a complex project or system and identify and apply systems methods to resolve issues

Can evidence * Leadership of systems thinking activities in a complex project
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Requirements definition**  |
| K3 The characteristics of good quality requirements and the need for traceability | **Applied Systems Thinking****Systems Architecture****Group Systems Project****Verification and Validation****Systems Design****Individual Project****Engineering and Managing Capability** | n/a | n/a | Can define * Governing requirements elicitation and management plans, processes and appropriate tools

Can explain * Elicitation and validation of stakeholder requirements
* How to establish acceptance criteria for requirements
* How to establish a complete and consistent requirement set for the system of interest.
* How to assess the impact of changes to requirements on the solution and program.

Can describe* Qualities of good, consistent requirements
 |
| S3 Use appropriate methods to analyse stakeholder needs to produce good quality, consistent requirements with acceptance criteria and manage them throughout system development | n/a | n/a | Has * Demonstrated this skill independently or has managed others.
* Written good quality and consistent requirements for a system of interest, including resolution and negotiation where applicable
 |
| Group 1. Assessment 2: Professional Discussion [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Ethics and Professionalism |
| K15 How to take account of health and safety legislation and sustainable development requirements in the relevant industry | **Innovation and Entrepreneurship in Engineering****Holistic Engineering****Engineering and Managing Capability****Engineering and Sustainable Development** | n/a | Can describe* How systems engineering activities are performed with integrity
* Health and safety considerations relevant to systems development
 | Can identify* Appropriate health and safety legislation relevant to development of a specific system or system element
 |
| B4 Take personal responsibility for health and safety practices and sustainable development | n/a | Evidence of* Health and safety considerations and sustainable development considerations in system design activities, carried out under supervision
 | Evidence of* Health and safety considerations and sustainable development considerations in system design activities, carried out independently or supervising others
 |
| B5 Operate with integrity and in an ethical manner, and ensure that team members perform with integrity and in an ethical manner | n/a | Can describe* Ethical considerations and appropriate behaviours with reference to real or hypothetical projects in employer’s business domain
 | Can explain with reasoned argument* Ethical considerations and appropriate behaviours with reference to real or hypothetical projects in employer’s business domain
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| Group 2. Assessment 1: Report, Presentation and Questions [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Lifecycles** |
| K1 Systems engineering lifecycle processes | **Applied Systems Thinking****Group Systems Project****Verification and Validation****Holistic Engineering****Engineering and Managing Capability****Systems Architecture****Systems Design** | Can describe* Different lifecycles and their characteristics
 | Can describe* Systems Engineering lifecycle processes

Can identify* Life cycle processes on a project upon which they are working and the suitable activities at system or systems element level

Can explain* Advantages and disadvantages of different systems development lifecycles and where to apply them advantageously
* Importance of considering future lifecycle stages during the current stage
 | Can identify* Project, enterprise and technology needs that affect choice of lifecycle model governing a project
* Dependencies between lifecycle stages of different system elements requiring alignment in a project

Can explain* Plans for transitions between lifecycle stages in a project
* Application of enterprise-level policies, procedures, guidance, and best practice to lifecycle selection in a project
* Preparation of future lifecycle phases, taking into account the impact on current phase and improvement of current activities
 |
| S1 Select appropriate lifecycle for a system or element of a system and establish its lifecycle stages and the relationships between them | Can explain* Why selection of lifecycle is important
* Why an appropriate lifecycle process model should be defined
* Why different engineering approaches are required in different lifecycle phases
 | Has* Demonstrated this skill under supervision or in the role of assistant
 | Has* Demonstrated this skill independently or has managed others
* Used enterprise-level policies, procedures, guidance and/or best practice to select lifecycles governing the project and defined dependencies and transitions between lifecycle stages
 |
| **Capability Engineering** |
| K2 The role a system plays in the super system of which it is a part | **Systems Architecture****Group Systems Project****Engineering and Managing Capability** | Can explain* The concept of capability and how it is useful to characterise systems
* How capability requirements may be satisfied by integrating several systems
* How super system capability needs may impact the development of contributing systems
 | Can identify * Capability issues from the wider system that will affect the design of the system of interest

Can explain* How super system capability needs impact on the development of each system that contributes to the capability.

Can describe * Different elements that make up capability within a project
 | Can identify* Capability issues of the wider (super) system which affect the design of a system and translate them into system requirements

Can describe * Assessment of existing super system capability and identification of gaps, leading to recommendations for reduction or elimination of deficit
 |
| **Critical Thinking**  |
| B3 Adopt a critical thinking approach using a logical critique of work including assumptions, approaches, arguments, conclusions, and decisions | n/a | Can explain* Why ideas, arguments, and solutions need to be critically evaluated
* Why bias may occur in arguments
 | Evidence in technical approach of* Clear statement of assumptions
* Careful selection of methods
* Logical deductions and conclusions
 | Evidence in technical approach of* Examination of impact of assumptions or weak logic and looks for substantive arguments
* Effective challenging of team assumptions, decisions and/or conclusions
* Constructs robust and detailed logical argument
 |
| Group 2. Assessment 2: Professional Discussion [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Systems Modelling and Analysis** |
| K5 The benefits and risks associated with modelling and analysis | **Systems Architecture****Understanding Complexity****Verification and Validation****Systems Design****Modelling, Simulation and Visualization for Engineering****Applied Systems Thinking****Individual Project****Sensors and Actuators for Control****Holistic Engineering****Computer Aided Engineering****Digital Signal Processing** | Can explain* Why systems representations are needed and the benefits they offer
* Relevance of model outputs and how these relate to system development

Can describe* Scope and limitations of models
* Different types of modelling and simulation
 | Can explain* Why models are developed for a specific purpose or use and provides examples
* Why models and simulations have a limit of valid use, and the risks of using models and simulations outside those limits.
* How modelling or simulation have been used to represent a specific system or system element, including choice of tools and techniques, model development, analysis and interpretation
 | Can define* Governing modelling and analysis plans, processes and appropriate tools for a project, and explain their use to monitor and control systems modelling and analysis activities for a system or system element
* Management strategy for models produced within a project

Can explain* Selection of appropriate representation of a specific systems or systems element and appropriate tools and techniques for its

modelling and analysis |
| S5 Generate a physical, mathematical, or logical representation of a system entity, phenomenon or process | Can describe* a variety of system analysis techniques which can be used to derive information about a system.
 | Has* Demonstrated this skill by applying scientific or engineering principles under supervision or mentor
 | Has* Demonstrated this skill independently, as leader of a team, or as a technical mentor to others
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **General Engineering** |
| K14 Scientific, technical,engineering, and mathematics fundamentals and a broad technical domain knowledge for the relevant industry | **Individual Project****Understanding Complexity****Sensors and Actuators for Control****Engineering and Sustainable Development****Manufacturing Processes and Automation****Additive Manufacturing****Computer Aided Engineering****Digital Signal Processing****Communication Networks****Telecommunications Network Security** | Has* Knowledge of core principles of science and engineering
 | Can describe* Application of suitable scientific or engineering theory, methods, and tools for system development
 | Can explain and justify* Determination of scientific and mathematical theory for use in system development
* Application of suitable scientific or engineering theory, methods, and tools for system development
* Engineering decisions underpinned by engineering principles and theory
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| Group 3. Assessment 1: Report, Presentation and Questions [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Communications** |
| S12 Communicates effectivelywith all stakeholders of the project | **Applied Systems Thinking****Group Systems Project****Individual Project****Sensors and Actuators for Control****Innovation and Entrepreneurship in Engineering****Engineering and Managing Capability** | * n/a
 | Can provide evidence of* Effective communication using appropriate media and means to influence project outcomes
 | Can provide evidence of* Effective communication using appropriate media and means to influence project outcomes
* Development of communicating culture within team or stakeholder group
 |
| Group 3. Assessment 2: Professional Discussion [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Technical Leadership  |
| K6 How creativity, ingenuity,experimentation and accidents or errors, often lead to technological and engineering successes and advances | **Group Systems Project****Individual Project****Systems Architecture** **Understanding Complexity****Sensors and Actuators for Control****Innovation and Entrepreneurship in Engineering****Holistic Engineering****Modelling, Simulation and Visualization for Engineering****Engineering and Sustainable Development** **Manufacturing Processes and Automation** **Engineering Design Methods** | Can explain* The role of technical leadership in systems engineering
* The importance of collaboration in systems engineering
* Why understanding strategy is important to systems engineering leadership
 | Can describe* How creativity, ingenuity, experimentation, an accidents or error has led them to a solution or engineering success
* How their innovative ideas have been communicated to peers and other stakeholders
* How ideas have been modified or developed as a result of peer review or criticism
 | Can describe and explain* An exemplar of their use of creativity, innovation, or problem solving techniques to develop strategies or resolve team or project issues

Can explain* The interpretation of a vision for a project team and how to gain acceptance across the team
* How constructive criticism enabled self- improvement and modification or development of strategy or ideas
 |
| S6 Apply creativity, innovationand problem solving techniques to system development or operation | Can explain* How creativity, ingenuity, and experimentation leads to technological and engineering success
 | Has* Demonstrated this skill for a small project or systems, within the context of the business and can identify the creative, innovative, or key problem solving steps
 | Has* Demonstrated this skill for a complex project or system within the context of the business, or led an innovation team.
* Can identify the creative, innovative, or key problem solving steps
 |
| S21 Identify concepts and ideas in sciences, technologies and engineering disciplines beyond their own discipline that could benefit the projectsolution | Can explain* How different sciences impact the technology and engineering domain
 | Evidence of* Maintaining knowledge of across engineering and/or scientific disciplines
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| B7 Maintain awareness of developments in sciences, technologies and relatedengineering disciplines | Can describe* How to keep abreast of science and technology advances
 | Can evidence* Ongoing technical learning, drawing on examples from logbook
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Negotiation**  |
| B2 Perform negotiations with stakeholders recognizing different styles of negotiating parties and adapts own style accordingly |  | Can describe* When negotiation may be necessary and what it entails
 | Can describe* Different stakeholder positions within a negotiation Evidence of
* Support to a negotiating team through provision of data and information
 | Evidence of* Successful negotiations conducted within a system development or operation activity, conducted independently or in a leadership role
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| Group 4. Assessment 1: Report, Presentation and Questions [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Design for… |
| K8 Non-functional designattributes such as manufacturability, testability, reliability, maintainability, affordability, safety, security, human factors, environmental impacts, robustness and resilience, flexibility, interoperability, capability growth, disposal, cost, natural variations, etc | **Systems Architecture****Group Systems Project****Individual Project****Systems Design****Innovation and Entrepreneurship in Engineering****Engineering and Managing Capability****Modelling, Simulation and Visualization for Engineering****Engineering and Sustainable Development** **Manufacturing Processes and Automation****Engineering Design Methods****Lean and Agile Manufacture****Telecommunication Network Security**  | Can explain* Why the requirements of all lifecycle stages must be accommodated
* The importance of integrating design specialties into the solution and how this may lead to conflicting requirements

Can describe* Relationships between “ilities”
 | Can explain* The process and tools selection to manage and control selected specialty engineering activities
* Selection and balancing of design attributes in support of specialty engineering needs
* How techniques and tools are used to ensure design meets specialty needs

Can identify* Design attributes and how they influence the design
* Relationships pertinent to the integration of specialisms within a project

Can describe* The operational environment in ways appropriate to support specialty engineering activities
* How trade studies influence characteristics of proposed solutions
 | Can explain* Definition of governing specialty engineering plans, processes and appropriate tools to monitor and control specialty engineering activities
* How to select and balance design attributes throughout the design process in support of specialty engineering needs
* Selection and application of appropriate techniques to characterize the operational environment and trade studies to determine and characterize specialty characteristics of proposed solutions
* The integration of specialisms within a project
* Can justify
* Trade-offs involving conflicting demands from design specialisms
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Verification** |
| K11 Systems verification againstspecified requirements and characteristics and the need to execute it in a logical sequence. | **Group Systems Project****Individual Project****Verification and Validation****Systems Design****Group Systems Project****Individual Project****Verification and Validation****Systems Design****Modelling, Simulation and Visualization for Engineering** | Can explain* The purpose of verification
* Why there is a need to verify a system in a logical sequence
 | Can describe* The verification environment
* Can identify
* Required evidence for verification of small projects
* Can explain
* Verification plans, including selection of standards, methods, and definition of timing for small projects, in context of business domain
* How evidence establishes that a system meets requirements
 | Can explain* How to define governing verification plans, processes and select tools to monitor and control verification activities
* How to write verification plans, including selection of standards, methods, and definition of timing for complex systems or projects, in context of business domain
* How to write detailed verification procedures

Can identify* Suitable verification environment
* Required evidence for verification of complex projects

Can show* Traceability between verification requirements and system requirements
 |
| S10 Define verification plans (including tests) to obtain objective evidence that a system of system element fulfils its specified requirements and characteristics | Can explain* Why verification should be planned
 | Has* Assisted with the development of verification plans
* Written verification plans independently for small projects of systems
* Carried out verification tasks under supervision
 | Has* Developed verification plans independently or as supervisor to others
* Written verification plans and procedures for complex systems
* Carried out verification tasks independently or as supervisor of others
 |
| Group 4. Assessment 2: Professional Discussion [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Systems Architecting |
| K7 Different types of systemsarchitecture and techniques used to support the architectural design process (i.e. the specification of systems elements and their relationships) | **Applied Systems Thinking****Systems Architecture****Group Systems Project****Verification and Validation****Systems Design****Modelling, Simulation and Visualization for Engineering****Sensors and Actuators for Control****Engineering and Managing Capability** | Can describe* The principles of architectural design
* Different types of architecture
 | Can explain* The choice of architecture type and techniques used for a specific system or systems element
* How analysis techniques have been used in the architectural design process
* How architectural attributes relate to requirements
* How functional analysis is conducted for a specific system

Can describe* Concept feasibility and design trade-off applied to a system or systems element
 | Can explain* How to define governing systems architecting plans, processes, and appropriate tools for system architectural design activities.
* How to partition a system into realizable system elements that can be brought together to meet the requirements
* Monitoring or an evolving design solution and how key aspects are used to adjust the architecture of a system

Can justify* Choice of techniques, architectural analysis and selection of an optimum solution based on an example system
 |
| S7 Define the systemsarchitecture and derived requirements to produce an implementable solution that enables a balanced and optimum result that considers all stakeholder requirements across all stages of the lifecycle | Can explain* The need for functional models of a system
* The process and key artefacts of functional analysis
* How outputs from functional analysis lead to overall system design
 | Has* Contributed to the architectural design process through provision of solely produced artefacts as a team member or under supervision
 | Has* Contributed substantially to the architectural design process, offering alternative designs, and conducting analysis to support decision making. Works independently or supervises others
 |
| S22 Partition between discipline technologies and work with specialists to derive discipline specific requirements | Can explain* Why alternative discipline technologies can be used to satisfy the same requirement
 | Has* Applied systems architecting approaches to derive discipline specific requirements
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Integration |
| K9 Integration as a logicalsequence to confirm the system design, architecture, and interfaces | **Systems Architecture****Group Systems Project****Individual Project****Systems Design****Holistic Engineering****Engineering and Managing Capability****Sensors and Actuators for Control****Verification and Validation****Manufacturing Processes and Automation** **Additive Manufacturing****Engineering Design Methods** | Can explain* Why integration is important and how it confirms the systems design, architecture and interfaces
* Why a system should be integrated in a logical sequence
 | Can explain* The development of integration plans for a small project, within the context of their business domain, including applicable methods and timing

Can identify* Evidence to be gathered during integration in support of downstream test and acceptance activities
* Simple faults typically found during integration activities and describe how they will be documented and communicated to stakeholders
* Appropriate corrective actions for typical faults found during integration activities

Can describe* The integration environment for a small project within the context of their business domain
 | Can explain* How to define governing integration plans, processes and appropriate tools to monitor and control integration activities
* How to develop integration plans for larger, more complex systems or projects, within the context of their business domain including applicable methods and timing and how standards influence the plans
* The management of integration activities for a system, product or service

Can identify* Evidence to be gathered during integration in support of downstream test and acceptance activities
* Complex faults typically found during integration activities and describe how they will be documented and communicated to stakeholders
* Appropriate corrective actions for typical faults found during integration activities

Can describe* The integration environment for a more complex systems or projects, within the context of their business domain
 |
| S9 Assemble a set of system elements and aggregate into the realised system, product, or service using appropriate techniques to test interfaces, manage data flows, implement control mechanisms, and verify that elements and aggregatesperform as expected | Can explain* Why planning and management of integration is necessary
 | Has* Assisted in the development of integration plans and carried out integration tasks under supervision
 | Has* Developed integration plans and carried out integration tasks independently or as supervisor of others
 |
| **Interfaces** |
| K10 Interface management and its potential impact on the integrity of the system solution | **Group Systems Project****Systems Design****Engineering and Managing Capability****Individual Project****Verification and Validation****Modelling, Simulation and Visualization for Engineering** | Can explain* The impact of interface definition on the system solution
 | Can explain* How to identify and define simple interfaces

Can describe* Governing processes to manage and control interfaces
 | Can explain* Definition of governing interface management plans, processes, and tools to monitor and control interface management activities

Can describe* Possible sources of complexity for interface definition and management

Can identify* System element interfaces and define and them
* Consequences of changes to interfaces at systems element, system, or systems of systems level
 |
| S8 Identify, define, and control interactions across system or system element boundaries | Can describe* How an interface may be defined
 | Has* Identified and defined simple interfaces
 | Has* Identified and defined multiple types of interface in complex systems
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Validation** |
| K12 The relationship betweenverification, validation, and acceptance | **Group Systems Project****Individual Project****Verification and Validation****Modelling, Simulation and Visualization for Engineering****Sensors and Actuators for Control****Systems Design****Holistic Engineering****Engineering and Managing Capability****Manufacturing Processes and Automation****Communication Networks** | Can describe* The relationship between verification, validation, and acceptance
 | Can describe* Appropriate verification, validation, and acceptance tests for a system
* How evidence gathered in verification and validation testing supports qualification, certification, and acceptance testing
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| K13 The purpose and importanceof system validation in relevant commercial context | Can explain* The purpose of validation
 | Can describe* Development of validation plans based on standards and corporate processes

Can explain* Use of terminology for validation to engage customer and end user appropriately
* Procedures used to record results, identify anomalies, and resolve failures during validation
 | Can explain* How to define governing validation plans, processes and select tools to monitor and control validation activities
* How to write validation plans, including selection of standards, methods, and definition of timing for complex systems or projects, in context of business domain
* How to write detailed validation procedures
* Use of terminology for validation to engage customer and end user appropriately

Can show* Traceability between validation requirements and user and customer requirements
 |
| S11 Provide objective evidence that the operational system fulfils its business or mission objectives and stakeholder requirements and expectations | Can explain* How validation should be planned
 | Has* Assisted with the development of validation plans
* Conducted validation activities under supervision
 | Has* Developed validation plans independently or as supervisor of others
* Interacted with customer effectively
* Carried out validation activities independently or as the supervisor of others
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Transition** |
| K12 The relationship betweenverification, validation, and acceptance | **Group Systems Project****Individual Project****Verification and Validation****Systems Design****Holistic Engineering****Engineering and Managing Capability****Lean and Agile Manufacture** | Can describe* The relationship between verification, validation, and acceptance
 | Can describe* Appropriate verification, validation, and acceptance tests for a system
* How evidence gathered in verification and validation testing supports qualification, certification, and acceptance testing
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| S13 Integrate a system into itsoperational environment, including the provision of support activities (e.g. specification of site preparation, training, logistics, etc.) | Can explain* How transition may be performed

Can list* Activities and work products required for transition
 | Has* Carried out transition activities in accordance with plan and under supervision
 | Has* Developed transition plan independently or as supervisor to others
* Interacted with user effectively
* Carried out transition activities independently or as supervisor to others
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Operation and Support |
| K16 The relationship of servicequality to user satisfaction and cost, risk, and availability of the operational system | **Innovation and Entrepreneurship in Engineering****Engineering and Managing Capability****Individual Project****Sensors and Actuators for Control****Systems Design****Group Systems Project****Verification and Validation****Manufacturing Processes and Automation****Additive Manufacturing****Communication Networks** | Can describe* Support needed for systems or products in service
* Management of obsolescence and upgrade
 | Can describe* The governing processes and tools to plan and control a system, product or service operations, maintenance and support related activities

Can identify* Appropriate operational data for collection in order to assess system performance
* Design changes to improve system performance or overcome system failure

Can identify and evaluate* Evolving user needs, new technologies, and obsolescence issues, and recommend system updates in response
 | Can explain how to* Define governing operation and support plans, processes and appropriate tools to
* monitor and control system, product or service operation, maintenance and support activities
* Monitor and address changes to system operational environment or external interfaces
* Ensure technical support data (e.g. procedures, guidelines, checklists, training and maintenance materials) remain current

Can identify* Data to be collected in order to assess system, product or service operational performance
* System elements approaching obsolescence and explain how to conduct studies to identify suitable replacements
 |
| S15 Initiate design change proposals in response to system failure or degradation | Can describe* Difference between preventative and corrective maintenance
 | Has* Assisted in operation and support activities to assess systems performance, failures, and obsolescence, and evolving user needs, and new technology opportunities to initiate system design changes and update.
 | Has* Managed, independently or as supervisor of others, operation and support activities to assess systems performance, failures, and obsolescence, and evolving user needs, and new technology opportunities to initiate system design changes and update.
 |
| S14 Define and collect operational data for monitoring and control of a system | Can identify* Data needs and collection methods for operational support
 | Has* Assisted with monitoring and control of systems engineering activities, including measurement assessment and reporting of tasks against plans
* Identified corrective actions if necessary
 | Has* Monitored and controlled systems engineering activities, including measurement assessment and reporting of tasks against plans independently or as supervisor of others
* Identified and applied corrective action if necessary
* Managed and traded technical margins horizontally and/or vertically through the project hierarchy, if needed
 |
| B6 Take a proactive and systematic approach to resolving operational issues | Can explain* How to identify and rectify system faults
 | Can evidence* Examples of activities during operation carried out to identify in advance and avoid operational issues, under supervision

Can describe* Key system features or behaviours that ensure user satisfaction
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |

|  |
| --- |
| Group 5. Assessment 1: Report, Presentation and Questions [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Planning** |
| K19 The role of systemsengineering planning as part of an overall project/programme plan | **Group Systems Project****Individual Project****Holistic Engineering****Telecommunications Network Security**  | * n/a
 | Can describe * Development of systems engineering plan for a project
* Linkage of systems engineering plan to project management plan

Can identify* Key design parameters required to track critical aspects of design during development
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| S20 Coordinate and maintain effective and workable plans across multiple disciplines | * n/a
 | Has* Assisted in the development and implementation of systems engineering plans under supervision
 | Has* Developed and implemented systems engineering plans independently or as a supervisor of others
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Risk and Opportunity |
| K4 The distinction between risk,issue, and opportunity and the different forms of treatment available | **Innovation and Entrepreneurship in Engineering****Holistic Engineering****Engineering and Managing Capability****Applied Systems Thinking****Group Systems Project****Individual Project****Verification and Validation****Telecommunications Network Security**  | * n/a
 | Can describe* Governing processes for risk and opportunity management
* Communication of risk and opportunity status to affected stakeholders.

Can explain* Application of risk and opportunity processes (including identification, assessment, analysis, treatment) to a specific project
* Monitoring and management of systems engineering risks and opportunities to a specific project
 | Can explain* The definition of risk and opportunity management plans, processes, and tools used to control and monitor risk and opportunity management activities in a specific project
* The project risk and opportunity profile including context, likelihood,, consequences, thresholds, priority and risk action and status of a specific project
* The generation of a risk action plan for risks that exceed the threshold for a specific project
 |
| S4 Identify, analyse, recommend treatment, and monitor and communicate risks and opportunities throughout project | * n/a
 | Has• Assisted with preparation of risk and opportunity processes• Assisted with risk and opportunity management activities, including identification, assessment, analysis,treatment, mitigation, monitoring, and communication of risk and opportunity status. | Has• Established a project risk and opportunity profile including context, probability, consequences, thresholds, priority and risk action and status• Carried out risk and opportunity management activities independently or has managed others |
| Group 5. Assessment 2: Professional Discussion [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Monitoring and Control** |
| S14 Define and collect operation data for monitoring and control of a system | **Group Systems Project****Individual Project****Sensors and Actuators for Control****Verification and Validation****Systems Design****Manufacturing Processes and Automation****Additive Manufacturing****Communication Networks** | Can explain* The role of monitoring and control in a project

Can describe* Typical systems engineering metrics
* Different types of technical and non- technical review across the system lifecycle
 | Can describe* Application of suitable scientific or engineering theory, methods, and tools for system development
 | Can explain and justify* Determination of scientific and mathematical theory for use in system development
* Application of suitable scientific or engineering theory, methods, and tools for system development
* Engineering decisions underpinned by engineering principles and theory
 |
| Information Management |
| K20 The legal, commercial, andsecurity constraints that affect the management of data and information (e.g. General Data Protection Regulation, handling of specific commercial contract restrictions) | **Innovation and Entrepreneurship in Engineering****Holistic Engineering****Engineering and Managing Capability****Group Systems Project****Individual Project****Sensors and Actuators for Control****Telecommunications Network Security** | Can identify* Relevant legal and commercial constraints on information management
 | Can describe* The principles for obtaining, transferring, distributing, maintaining, and transforming data in accordance with integrity, security, privacy requirements and data rights
* The principles and methods through which valid sources of information and associated authorities are defined
* The principles through which data and information is retired, archived and curated
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| S19 Plan, execute, and control the storage and provision of information to stakeholders | Can describe* Various types of information that should be managed in a systems engineering process and how it should be managed
 | Has* Assisted with information management at all stages of information lifecycle
* Assisted with provision of information to stakeholders
* Assisted with sharing lessons learned beyond the project boundary
 | Has* Conducted information management at all stages of the information lifecycle, working independently or supervising others
* Determined appropriate media choices and processes for information provision
* Provided lessons learned beyond the project boundary
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Configuration Management**  |
| K20 The legal, commercial, andsecurity constraints that affect the management of data and information (e.g. General Data Protection Regulation, handling of specific commercial contract restrictions) | **Innovation and Entrepreneurship in Engineering****Holistic Engineering****Engineering and Managing Capability****Group Systems Project****Individual Project****Verification and Validation****Systems Design****Modelling, Simulation and Visualization for Engineering****Telecommunications Network Security**  | Can identify* Relevant legal and commercial constraints on information management
 | Can describe* The principles for obtaining, transferring, distributing, maintaining, and transforming data in accordance with integrity, security, privacy requirements and data rights
* The principles and methods through which valid sources of information and associated authorities are defined
* The principles through which data and information is retired, archived and curated
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| S18 Manage and control system elements and configuration over the project or programme lifecycle ensuring overall coherence of the design is maintained in a verifiable manner throughout the lifecycle | Can explain* How configuration management supports design integrity

Can describe* Key activities performed as part of configuration management
 | Has* Assisted with configuration management under supervision or with mentor support.
* Generated documentation for change control activities
 | Has* Lead configuration control activities, including selection of configuration items and associated documentation, conducting change control review with customer, and configuration status accounting reports and audits
 |

|  |
| --- |
| Group 6. Assessment 1: Report, Presentation and Questions [Back to skills scan assessment page](#_SECTION_B_) |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| **Project Management**  |
| K17 The elements of a projectmanagement plan (including statement of work, work breakdown structure, resource allocation, scheduling, management plan, monitoring, risk management, change requests, record keeping,and acceptance) | **Group Systems Project****Individual Project****Holistic Engineering****Engineering and Managing Capability****Lean and Agile Manufacture**  | * n/a
 | Can describe* Project scheduling and resourcing, work breakdown structure, monitoring and control, initiating and terminating project
 | Can explain* How to conduct project scheduling and resourcing, work breakdown structure, monitoring and control, initiating and terminating project
 |
| K19 The role of systems engineering planning as part of an overall project/programme plan | * n/a
 | Can describe* Development of systems engineering plan for a project
* Linkage of systems engineering plan to project management plan

Can identify* Key design parameters required to track critical aspects of design during development
 | Can explain* How to define governing process and appropriate tools to plan and control systems engineering activities for a project
* Linkage of systems engineering plan to overall project management plan
* How to estimate and secure sufficient systems engineering effort for a project

Can identify* Key design parameters required to track critical aspects of design during development
 |
| S16 Create and maintain project management plan, including work breakdown structure, scheduling, and risk management | * n/a
 | Has* Assisted with development of a project plan for a substantial project and with implementation of the plan including monitoring, control, and

reviews | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| Group 6. Assessment 2: Professional Discussion [Back to skills scan assessment page](#_SECTION_B_)  |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Finance |
| K18 The commercial and financialenvironment in which a project is being executed (e.g. procurement model, interest rates, exchange rates) | **Innovation and Entrepreneurship in Engineering****Holistic Engineering****Engineering and Managing Capability****Engineering Design Methods****Lean and Agile Manufacture** | Can explain* Why it is necessary to estimate budgets and control costs
* Impact of project decisions on costs
 | Can describe* Cost estimation, budget determination and funding requirements, life-cycle cost planning, cost monitoring, and corrective actions to manage finance
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| **Competency/KSB** | **Module(s)** | **Awareness** | **Supervised Practitioner** | **Practitioner** |
| Logistics |
| K21 Support and sustainability needs of a deployed system or product | **Group Systems Project****Systems Design****Engineering Design Methods** | Can explain* The importance of considering logistics support during system design
* The concept of life cycle costs

Can list* Key logistics support activities
 | Can describe* How to analyse supportability requirements for a system, or system element
* How to manage and control spares, repairs, and supplies for a deployed system
* How to assess packing, handling and transportation required for system sustainment

Can identify and analyse* Data and documentation needed for sustainment of a system
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |
| **Quality** |
| S17 Balance project scope, time,cost, risk, and resources to optimise product or service quality and return on investment | **Group Systems Project****Individual Project****Innovation and Entrepreneurship in Engineering****Holistic Engineering****Engineering and Managing Capability****Lean and Agile Manufacture** | Can list* Appropriate quality standards

Can describe* Purpose and importance of quality assurance

Can explain* Impact of project decisions on system or product quality
 | Has* Assisted with identification, measurement, monitoring, and analysis of quality measures and characteristics to improve project quality
* Assisted with verification of product or system conformity to appropriate standard
 | * Not required at practitioner level; use same criterion as supervised practitioner
 |

# SECTION 3: APPRENTICE SELF-ASSESSMENT & OBJECTIVES

## 3.1 Self-assessment

|  |  |
| --- | --- |
| **Briefly outline why you think the apprenticeship programme is appropriate for your development needs. What are the main benefits expected for you and your employer (e.g., improve the performance of your department)? How will you know these benefits have been achieved (e.g., achieve cost savings)?** | Click or tap here to enter text. |

## 3.2 Objectives

The apprentice Individual Learning Plan includes objectives for you as you embark on your apprenticeship. As you progress through the apprenticeship, we will work with you and your workplace mentor to ensure these objectives are achieved. To help us prepare your Training Plan we would be grateful if you would complete the section below with up to three objectives you would like to achieve during or as a result of the programme.

|  |  |  |
| --- | --- | --- |
| **Objective** | **How will you measure this objective?** | **How will you know you have met this objective?** |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |

# SECTION 4: MODERATOR ASSESSMENT

|  |  |
| --- | --- |
| **Applicant initial Skills Scan rating** | Click or tap here to enter text. |
| **Agreed rating** | Click or tap here to enter text. |

## 4.1 Prior Learning and Experience

Please complete the following based on prior qualifications detailed in the Apprentice Initial Assessment Form. If the specific content of prior qualifications is unclear, you must request further information from the applicant.

|  |  |
| --- | --- |
| **What is the applicant’s highest level of qualification?** | Click or tap here to enter text. |
| **Does the applicant have prior management qualifications and/or qualifications with a management element? If yes, please state qualification and content that might relate to the apprenticeship.** | Click or tap here to enter text. |
| **Does the apprenticeship offer the applicant training that is materially different from any prior qualification or a previous apprenticeship?** | Click or tap here to enter text. |
| **Please describe any additional information that has been used to confirm the apprenticeship is materially different from applicants’ prior qualifications (summarised discussion with applicant, copy of relevant email with applicant, etc).** | Click or tap here to enter text. |

## 4.2 Applicant Skills Scan and Self-Assessment

Please complete the following sections having reviewed the applicant's skills scan and self-assessment (Section 2 and 3 tabs).

|  |  |
| --- | --- |
| **Does the scoring show a sensible pattern of gaps in the applicant’s knowledge, skills and behaviours indicating the apprenticeship will offer the applicant opportunity for growth and development?** | Click or tap here to enter text. |
| **Did you agree with the applicant’s self-assessment? Where you disagree, please explain why and state what additional information has been used to support your decision.** | Click or tap here to enter text. |

## 4.3 Line manager support

Please complete the following sections having discussed the applicant's skills scan and the apprenticeship requirements with the applicant's line manager.

|  |  |
| --- | --- |
| **Did the line manager’s assessment confirm the applicant’s self-assessment?** | Click or tap here to enter text. |
| **Does the line manager’s assessment confirm that the apprenticeship will provide the apprentice with opportunities for further growth and development?** | Click or tap here to enter text. |
| **Having read the line manager’s statement are you confident that there is understanding of the off-the-job requirement and the organisational requirement to accommodate this?** | Click or tap here to enter text. |

## 4.4 Conclusions on Prior Learning

Please complete the following having reviewed all aspects of the Apprentice Initial Assessment Form.

|  |  |
| --- | --- |
| **Does the applicant have any prior learning which needs to be considered in their individual learning plan? If yes, please provide details.** | Click or tap here to enter text. |
| **Does the applicant have any prior learning that will lead to module exemption? If yes, please complete the Section 5 to outline which modules will be exempted.** | Click or tap here to enter text. |
| **All academic exemptions are subject to Associate Dean (Education and Student Experience) and Registry Approval. Exemptions against dual accredited modules will need approval of the relevant Professional Body (please see note above). Please tick the box to confirm that you have discussed the implications of any exemption with the applicant.** | Click or tap here to enter text. |
| **Please detail your assessment of the applicant's current level of competency against the requirements of the standard** | Click or tap here to enter text. |

# SECTION 5: RECOGNITION OF PRIOR LEARNING & MODULE EXEMPTIONS

Please complete one of the following tables (depending on the candidate’s chosen route) where prior learning and module exemption has been identified.

## 5.1 Strategic Leadership route

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Module title** | **Credits** | **N/A** | **Full exemption** | **Partial exemption** | **Comments** |
| **WSP062** | Applied Systems Thinking |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP072** | Systems Architecture |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP085** | Group Systems Project |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP065** | Individual Project |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP074** | Machine Learning - Principles and Applications for Engineers |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP068** | Mechatronic System Design |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WPT067** | Verification and Validation |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP066** | Systems Design |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP069** | Innovation and Entrepreneurship in Engineering |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP071** | Holistic Engineering |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP460** | Engineering and Managing Capability |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP076** | Modelling, Simulation and Visualization for Engineering |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP409** | Engineering and Sustainable Development |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP600** | Manufacturing Processes and Automation |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP637** | Introduction to Additive Manufacturing |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP331** | Computer Aided Engineering |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP415** | Engineering Design Methods |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP006** | Fundamentals of Digital Signal Processing |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP009** | Communication Networks |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP233** | Lean and Agile Manufacture |  |[ ] [ ] [ ]  Click or tap here to enter text. |
| **WSP016** | Telecommunications Network Security |  |[ ] [ ] [ ]  Click or tap here to enter text. |

##  5.3 Comments

|  |
| --- |
| Click or tap here to enter text. |

# SECTION 6: INITIAL ASSESSMENT SUMMARY AND DECLARATIONS

|  |  |
| --- | --- |
| **Interview date** | Click or tap to enter a date. |

This section should be completed by the Loughborough moderator (or other appropriate individual) following discussion of results of the initial assessment interview.

## 6.1 Training provider declaration & signatures

I confirm I have discussed the outcome of the initial knowledge skills and behaviours assessment with the learner and given all necessary advice and guidance relating to the suitability of planned qualifications and explained that the analysis of prior qualifications and the impact of prior learning will be taken into account with their planned learning. I have also discussed with the learner the need for at least 20% of their working hours (based on 30 hours per week, the exact minimum hours will be confirmed in the Apprenticeship Agreement and Training Plan) to be in “off the job” development and the learner has agreed to fulfil this.

|  |  |  |
| --- | --- | --- |
| **I confirm that the apprenticeship is an appropriate training programme for the individual** | [ ]  Yes | [ ]  No |
| **I confirm that the job role is appropriate to implement all of the skills and behaviours required** | [ ]  Yes | [ ]  No |
| **I confirm that the applicant still needs an apprenticeship with a minimum of minimum duration of 12 months with at least six hours of off the job training per week excluding weeks on statutory leave in order to complete the practical period of learning** | [ ]  Yes | [ ]  No |

Or

|  |  |  |
| --- | --- | --- |
| **I confirm the apprenticeship is not suitable for funded training, a commercial route is required for this applicant (only if any of the previous boxes are “No”)** | [ ]  Yes | [ ]  No |

|  |  |
| --- | --- |
| **Date** | Click or tap to enter a date. |
| **Training provider name** | Click or tap here to enter text. |
| **Training provider signature** |  |

## 6.2 Apprentice declaration & signatures

|  |  |  |
| --- | --- | --- |
| **I understand I will be acquiring substantive new skills and confirm that the content of the training is materially different from any prior qualification, or a previous apprenticeship undertaken** | [ ]  Yes | [ ]  No |
| **I agree with the results and outcome of the initial assessment of the apprenticeship and applied recognition of prior learning** | [ ]  Yes | [ ]  No |

|  |  |
| --- | --- |
| **Date** | Click or tap to enter a date. |
| **Apprentice name** | Click or tap here to enter text. |
| **Apprentice signature** |  |

## 6.3 Line manager declaration & signatures

Please ensure you have reviewed your employee’s skills scan above before answering/signing below.

|  |  |  |
| --- | --- | --- |
| **Do you agree with the areas where your employee has given a self-assessment of 1? (A self-assessment of 1 means that your employee already has formal training at Level 7 (e.g., MSc) in the relevant underpinning theories; and that they are able to provide evidence to demonstrate these skills and behaviours).** | [ ]  Yes | [ ]  No |
| **Having reviewed your employee’s self-assessment above, what benefits do you think this programme will provide for your employee and your organisation?** | Click or tap here to enter text. |
| **As this person’s line manager do you support the off-the-job requirement for the programme? The off-the-job requirement includes: the taught delivery time; time to research and write assignments; and the provision of opportunities at work to gain and develop relevant skills. Workplace opportunities may be necessary for the person to gather evidence for their End Point Assessment, in order to demonstrate ability against all the Systems Engineer standards (as listed in the skills scan above).** | [ ]  Yes | [ ]  No |
| **What specific arrangements are you planning to put in place to facilitate the off-the-job requirement? For example, you may be planning to provide project work so that the individual can gain experience in areas outside of their regular job role; or to facilitate others, in the individual’s team, to cover work in the individual’s absences** | Click or tap here to enter text. |

On behalf of the employer, I declare the following that:

1. I have the authority within the organisation to make this agreement
2. I agree with the results and outcome of the initial assessment and that all relevant prior learning and experience has been identified and properly accounted for in the design of the training plan, which has been adjusted accordingly
3. I agree that the apprenticeship is the most appropriate programme, and I am satisfied that the apprenticeship standard aligns with the applicant’s job role at the appropriate level
4. The applicant has a productive job role with a direct link to the apprenticeship standard
5. Appropriate supervision and support will be given to the applicant to carry out their job role including where the apprentice works flexibly from home (where applicable)
6. The applicant will be given the opportunity to embed and consolidate knowledge skills and behaviours of the apprenticeship standard within the workplace
7. Details of all parties will work together to achieve the apprenticeship (i.e., roles and responsibilities of the provider, employer, and apprentice) have been set out and agreed within the training plan
8. The price of the apprenticeship has been agreed, taking into account the outcome of the initial assessment, and has been recorded on the training services agreement (contract)
9. Off-the-job activity will take place in paid time or time off in lieu
10. Where planned off the job activity cannot take place as planned, we will work with the University to replan this time

|  |  |
| --- | --- |
| **Date** | Click or tap to enter a date. |
| **Line manager name** |  |
| **Line manager signature** |  |