OMG Standards Development Organization

SYSML MODEL USER EXAM

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Duration

90 mins in native English-speaking countries. 120 mins in all others.
Note: Extra time confirmed via email following exam order completion.

Fee

US$350 + taxes
(regional currency equivalent and taxes)

Format

Multiple choice
(text and images)

Languages

English & Japanese. Use of translation apps during the exam is prohibited.

Passing Score

>=56/90 correct answers
or >=62% correct answers

Prerequisites

None

Technical Issues

Contact Pearson VUE Customer Service. Make sure to perform a System Test on your computer before scheduling an online exam.

Validity

Certifications expire 3 years after exam date. Take the same or higher level exam to extend certification validity.

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STANDARD COVERED

- System Modeling Language (SysML) v1.2

RECOMMENDED STUDY MATERIALS

- **A Practical Guide to SysML: The Systems Modeling Language, 3rd Edition (Friedenthal, Moore and Steiner)**: Chapters 3 (Getting Started with SysML) and 4 (An Automobile Example Using the SysML Basic Feature Set). *Authors contributed to the standard and exam
- **Systems Engineering with SysML/UML: Modeling, Analysis, Design (Weilkiens)**: *Authors contributed to the standard
- **SysML Distilled: A Brief Guide to the Systems Modeling Language (Delligatti)**
- **SysML for Systems Engineering (Perry)**: *Authors contributed to the standard
- The OMG SysML Tutorial
- Simulation-Based Design Using SysML: Part 1: A Parametrics Primer (Peak)
- Hybrid SUV Example (SysML v1.2)
- SysML Notations and Conventions
- Model-Based Systems Engineering (MBSE) with the Systems Modeling Language (SysML) (Wolfrom)

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36%	**MODELS OF SYSTEM STRUCTURE** **Interpreting System Structure on Block Diagrams (22%)**: Block definition and description, including definition vs. usage, valuetype (with units), block features including value properties, parts, references and operations. Block Definition Diagram description, purpose, and benefits, compartments, relationships between blocks including specialization and associations (including composite but not shared aggregation), multiplicities. Internal Block Diagram description, purpose, and benefits, enclosing block, flow ports and standard ports, connectors and item flows as well as representation of parts. **Interpreting Model Organization on Package Diagrams (7%)**: Package Diagram description, purpose, and benefits, aspects of packages including ownership of elements and defining a namespace, relationships including containment and dependency, and concepts of view and viewpoint. **Interpreting System Constraints on Block Definition Diagrams and Parametric Diagrams (7%)**: Interpreting constraint blocks on Block Definition Diagrams, Parametric Diagram description, purpose and benefits, constraint properties, parameters and expressions, connecting constraint properties and value properties with binding connectors.
30%	**MODELS OF SYSTEM BEHAVIOR** **Interpreting Flow-Based Behavior on Activity Diagrams: (13%)** Activity Diagram description, purpose, and benefits, I/O flow including object flow, parameters, parameter nodes and pins, control flow including control nodes, activity partitions (swimlanes) and actions including decomposition of activities using call behavior action, send signal action, as well as accept event action. **Interpreting Event-Based Behavior on State Machine Diagrams (10%)**: State Machine Diagram description, purpose, and benefits, states and regions including state, regions, initial state and final state, transitions including trigger by time and signal events, guard and action (i.e., effect), as well as behaviors including entry, exit and do. **Interpreting Message-Based Behavior on Sequence Diagrams (7%):** Sequence Diagram description, purpose and benefits, lifelines, asynchronous and synchronous messages, and interaction references (to elements outside the diagram).
20%	**CROSS-CUTTING CONSTRUCTS** **Interpreting Allocations Across Multiple Diagram Types; Other Topics:** Allocation description, purpose and usage, AllocatedFrom and AllocatedTo, representation including callouts, compartments, allocate activity partitions, and tables, special notations for comment, rationale, problem and constraint. Some concepts relating to diagrams: diagram frames, ports, parameters and anchors on diagram frames, diagram header and diagram description as well as stereotype.
14%	**MODELS OF REQUIREMENTS** **Interpreting Requirements on Requirement Diagrams (7%)**: The concept of "requirement", key relationships including derive, verify, satisfy, refine, trace, containment as well as the Requirement Diagram description, purpose and benefits **Interpreting System Functionality on Use Case Diagrams (7%)**: Use Case Diagram description, purpose and benefits, use case structure encompassing use case, actor and subject, as well as basic relationships including association, include, extend and generalization.