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<th>Exam Series Code</th>
<th>OMG-OCUP2-ADV300</th>
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<tr>
<td>Exam Duration</td>
<td>105 minutes in native English-speaking countries and 135 minutes in all others. <strong>Note:</strong> When scheduling your exam in a non-native English-speaking country, you will not see this extra time until you complete your exam order.</td>
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<td>Exam Fee</td>
<td>US$350 (or local equivalent)</td>
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<td>Exam Type</td>
<td>Multiple choice (text and UML diagrams)</td>
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<tr>
<td>Exam Pass Score</td>
<td>&gt;=57 of 90 questions answered correctly (&gt;=63%)</td>
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<td>Exam Prerequisite(s)</td>
<td>Passing scores on the OCUP 2 Foundation and and OCUP 2 Intermediate certification exams.</td>
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<tr>
<td>Exam Specification</td>
<td>Unified Modeling Language (UML) v.2.5.1</td>
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| Recommended Exam Study Guides | 1. UML 2.0 in a Nutshell (Pitman)  
                           | 2. UML 2 for Dummies (Schardt)                                                      |
| Additional Reading     | The Value of Modeling (IBM Software Group)                                         |
|                        | Why Model? (Epstein)                                                               |
|                        | Business Modeling: A Practical Guide to Realizing Business Value-Excerpt from Chapter 7: Model Value Analysis (Zahavi) |
|                        | Why Domain Modeling (Wirfs-Brock)                                                  |
|                        | Model Organization with Packages and the Package Diagram (Baker)                   |
|                        | Concurrency in UML (Stachecki)                                                     |
| Useful Knowledge       | Modeling using UML, BPMN, SysML, or Realtime software development principles.       |
| Exam Training Options (not required) | NobleProg (Worldwide: Scroll to ‘Other Countries’ section to change region) |
| Exam Voucher Program   | View our Voucher Program for potential discounts.                                   |
| Testing Accommodations | For hearing, learning, physical and/or visual disability accommodations, please contact certification@omg.org with proof of your most recent diagnosis thereof so we can officially request accommodation(s) on your behalf via Pearson, and once approved, provide you with further instructions on scheduling your exam(s) with your requested accommodation(s). |
| Exam Registration      | Pearson VUE: create an account, locate a test center, view available tests, (re)schedule a test (online or at a test center), cancel your exam (contact Pearson VUE >24 hours prior to exam for a full refund or you forfeit the full exam price), view exam scores and Contact Pearson VUE (for any technical issues-use chat feature to expedite a response). |
| Online Exam Check-In & Requirements | Visit Pearson VUE Online Proctoring for detailed info. Log in at least 30 minutes early (online verification may take 15-20 minutes). Late arrivals will not be allowed to take the exam. |
| Test Center Check-In & Requirements | Arrive at least 30 minutes early. Late arrivals will not be allowed to take the exam. Bring two forms of ID (at least one with photo and both with signature): alien registration card, bank card, credit card, employee badge, government issued, green card, military, passport, school and state ID. Do not bring any items (personal or otherwise) other than the two forms of ID to a test center. |
| Technical Issues       | Contact Pearson VUE (use chat feature to expedite a response).                    |
| Exam Languages         | This exam is only offered in English. You cannot use a translation app during the exam. |
| Review Your Answers    | Before completing your exam, you will be presented with a screen to review your answers to all questions. |
| Exam Score Reports     | Whether at a test center or online, pass or fail, you will be provided with a score report on your computer screen immediately following your exam. A hardcopy of your score report will be provided before an individual leaves a test center with their score in each major section. You can also review your exam score reports via your Pearson VUE account. If you fail your exam, you can review general sections where you scored poorly to assist when you decide to retake your exam. |
Those who pass their exam will immediately receive an email from Credly (admin@credly.com - check Junk folder) to claim their verifiable digital badge. Credly provides certified professionals with the option to share their certification credentials with others via the Credly Network, social media, print to .pdf or hardcopy certificate, and other avenues.

If you failed your exam, contact certification@omg.org to request a 30% discounted exam retake voucher.

Your certification expires 5 years from the date you passed your exam. The same or a higher-level certification must be taken prior to the previous certification’s expiration date to extend your certification.

While the original UML certification is still recognized by some, the UML 2 certification will demonstrate modeling knowledge and skills required in today’s complex IT environment.

### General Areas Tested in the UML 2 Advanced Exam

<table>
<thead>
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<th>Common Structure</th>
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<td>The MOF &amp; Metamodeling</td>
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<td>Activities</td>
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<tr>
<td>Interactions</td>
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<td>Structured Classifiers</td>
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<tr>
<td>Actions</td>
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### Comprehensive Areas Tested in the UML 2 Advanced Exam

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<th>Structural Diagrams</th>
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<th>Deployments</th>
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<td>Behaviors-Reentrant Events-Event Pool FunctionBehavior</td>
<td>Fragments Interaction Overview Interactions Interaction Uses Lifelines Messages Occurrences</td>
<td>Behavior StateMachines Protocol StateMachines StateMachine Redefinition</td>
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<td>Activity Groups</td>
<td>Control Nodes</td>
<td>Exception Executable Nodes</td>
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<td>Object Actions-ValueSpecificationActions</td>
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| The MOF and Metamodeling | Architectural alignment Metamodels Models Models and what they model Semantics of languages The MOF |
The following provides UML 2 Advanced exam coverage. Please refer to the Unified Modeling Language (UML) v.2.5.1 specification for a more in-depth look at the corresponding chapters and sections cited below.

CHAPTER 6: GENERAL TOPICS

Backus-Naur Form (BNF)

- This exam uses BNF where appropriate to specify textual notation, similar to the way it is used in the UML specification itself. BNF is defined in Ch. 6 on page 9 (UML 2.5 Specification, Beta 1). Also in Ch. 6 is a (very!) brief description of execution scope, a term that will be used later in several contexts.

Abstract Syntax

- Every first-level subsection of the UML specification starts with a UML diagram labeled Abstract Syntax. The OCUP 2 exams do not ask about these diagrams explicitly, but they are good examples of the language you're studying(!) and represent the relationships linking the elements to be presented in the sections that follow in a particularly clear and concise way. As an Advanced candidate, you presumably know how to read these diagrams and use the information they display. If you don't have this skill, you should develop it. It will provide an advantage to your study, and your work in the field at this level.

CHAPTER 7: COMMON STRUCTURE

- 7.3 Templates -
  o Add Templates. Postponed until now, Templates and the many elements that support them are covered at this Advanced level. Coverage is fairly complete, encompassing elements and attributes defined for Templates here in Section 7.3 and later on (String Expressions and Name Expressions, e.g.; most have "Template" somewhere in their names). There are many of these scattered throughout the specification but we will not point out, for each, that it is now included. We will, however, specifically mention the following:
    o Add Template Signatures, Template Bindings, Bound Element Semantics, and Template Notation
- 7.4 Namespaces - Add:
  o NamedElement association with StringExpression, and having both a name and a nameExpression.
- 7.7 Dependencies - Add:
  o Realization

CHAPTER 8: VALUES

- 8.3 Add: String Expressions

CHAPTER 9: CLASSIFICATION

- 9.2 Classifiers
  o Classifiers: Add Classifier may own CollaborationUses and UseCases
  o Generalization: Add Substitutability
  o Redefinition: Add redefinitionContext
  o Substitution: All
- 9.2.4 Notation: NOTE: UML allows a conforming tool to suppress the drawing of individual compartments or features of a classifier. Scenarios in this examination may use this ability.
- 9.3 Classifier Templates: All
• 9.4 Features: Add: concurrency property, effect property, notation of feature redefinitions
• 9.5 Properties: Add: Note the reference to qualifiers. Add ternary and higher-order associations, redefinition, composition and transitive deletion, subsetted property, isDerivedUnion.
• 9.6 Operations: Add featuringClassifier, isQuery, owningClassifier context
• 9.7 Generalization Sets - Add: powertypes

CHAPTER 11: STRUCTURED CLASSIFIERS

• 11.2 Structured Classifiers: Add: contracts, n-ary Connectors
• 11.4 Classes: Add: the stereotype «Metaclass»
• 11.5 Associations: Add: n-ary Associations (n>2), Subsetting, Specialization, qualifiers and qualified Association end, derivation of an Association, navigability via Class:ownedAttribute and Association:ownedEnd
• 11.6 Components: Add: Profiles based around components, wiring dependency, details of the "white-box" view beyond the treatment at Intermediate level, execution time semantics of a Connector, and «Specification» and «Realization» stereotypes
• 11.7 Collaborations: Add: extension of collaborationRole in a specialization

CHAPTER 12: PACKAGES

• 12.3 Profiles: Includes All except MOF-equivalent semantics and non-UML metamodels. Also exclude XMI Serialization.

CHAPTER 13: COMMON BEHAVIOR

• 13.2 Behaviors Add: reentrant Behavior, Function Behavior, Behavior owned as a nestedClassifier
• 13.3 Events Add: Event handling by context object, event pool, wait point, SignalBroadcastAction

CHAPTER 14: STATEMACHINES

• 14.2 Behavior StateMachines: Add: event pool
• 14.3 StateMachine Redefinition: All
• 14.4 Protocol StateMachines: Add: Declarative and Executable ProtocolStateMachines, use of sophisticated forms of modeling as detailed in the section, multiple ProtocolStateMachines per Classifier, use of other types of events, ProtocolStateMachine refinement, Protocol Conformance. NOTE: Unexpected trigger reception and unexpected behavior will not be covered in OCUP 2.

CHAPTER 15: ACTIVITIES

• 15.2 Activities:
  o Activities and Activity Nodes: Add: isControlType
  o Activity Edges: Add: Object tokens flowing over ControlFlow edges, object tokens accepted by ExecutableNodes, managing contention between multiple nodes, the weight property
  o Object Flows: Add: remainder of subsection. (Basic definition and null token already covered.)
  o Variables: All Except the discussion of variable setting in the Note paragraph.
  o Activity Execution: Add: remainder of subsection. (Material preceding isSingleExecution has already been covered.)
  o Activity Generalization: All.
• 15.3 Control Nodes
CHAPTER 16: ACTIONS

- 16.1 Summary: Add dependence of Actions on Activities, basic definition of concrete syntax, and of execution engine
- 16.2 Actions:
  - Actions: Add isLocallyReentrant and isReentrant.
  - Pins: Add ordering and isOrdered, token behavior on StructuredActivityNodes, fromActions
  - Actions and Pins in Activities: Add: disallowing of acceptance of more tokens than will be consumed by one execution of an Action, isLocallyReentrant, isControl, isControlType.
- 16.3 Invocation Actions
  - Call Actions: Add StartObjectBehaviorAction, classifierBehavior, non-reentrant and reentrant Behavior, matching owned Parameters to Pins by ordering
  - Send Actions: BroadcastSignalAction, SendObjectAction, ordering of owned and inherited Properties of a Signal, effects of local or remote target object.
  - Invocation Actions and Ports: All
- 16.4 Object Actions
  - Summary: All
  - ValueSpecificationAction: All
- 16.5 - 16.9: Material in these sections is not covered in OCUP 2.
- 16.10 Accept Event Actions
  - Accept Call Actions: Add triggering by an asynchronous call, methodBehavior caveat
  - Reply Actions: All
- 16.11 Structured Actions
  - Structured Activity Nodes: Add: Variables, semantics of activity edge when contained or not contained by a StructuredActivityNode
  - Isolation: All
- 16.13 Other Actions
  - Raise Exception Actions: All

CHAPTER 17: INTERACTIONS

- 17.1 Summary
  - Interactions in detailed design phase, all discussion of role of interactions, interleaving
  - NOTE THAT ALL discussion of disallowed or invalid traces in this chapter is included. This Coverage Map does not list specific references to disallowed or invalid traces.
  - Interaction Diagram Variants: Add Interaction Overview Diagram
- 17.2 Interactions
  - Add Specializing and redefining an Interaction
17.3 Lifelines
   - Add coregion

17.4 Messages
   - Add representation of ConnectableElement with a Type, wildcard argument
   - Messages: Add assignment-target, value-specification
   - Notation: As in all other sections, notation of covered elements is included automatically. For this subsection, which includes some notation for elements not mentioned previously, we point out that All of the notation section is included.

17.5 Occurrences
   - General Orderings: All

17.6 Fragments
   - Consider Ignore Fragments: All
   - Continuations: All
   - Negative: All
   - Critical Region: All
   - Ignore/Consider: All
   - Assertion: All

17.7 Interaction Uses
   - Notation: InteractionUse, CollaborationUse, strict, and return value

17.8 Sequence Diagrams
   - Sequence Diagram Notation: Add Continuation, coregion
   - Graphic Paths: Add GeneralOrdering

17.9 Communication Diagrams
   - Sequence expression: Add iteration notation for concurrent execution

17.10 Interaction Overview Diagrams: All

CHAPTER 18: USE CASES

18.1 UseCases

   - 18.1.3 Semantics
     - Use Cases and Actors: Add description through a Collaboration; being owned by a Classifier.

CHAPTER 19: DEPLOYMENTS

   - 19.1 Summary: Add: extending the package
   - 19.2 Deployments Add: extending in profiles, Property and InstanceSpecification as targets
   - 19.3 Artifacts Add: organizing into composition hierarchies, extending especially as profiles

CHAPTER 20: INFORMATION FLOWS

   - 20.1 InformationFlows
     - Add InformationFlow sources and targets, channels, InformationItems

COVERAGE OF METAMODELING INCLUDES THESE TOPICS:

Our coverage of metamodelling and the functionality that it enables (executable UML, e.g.) is intended as a survey, and the experts who wrote the exam questions did not expect you to study these specifications in enough depth to be able to work with the language. Learn the basics of these topics well and try to retain this knowledge as your
modeling work evolves so that, when you come to a point in a project that calls for metamodeling or generating a UML model intended for execution, you know where to look for solutions.

Metamodeling and the MOF, from **UML 2.5.1**:

- 6.2 Architectural alignment: All
- 6.3.1 Models and What They Model: All except Execution Scope, which was covered in the main exam

Metamodeling and the MOF, from **fUML v1.5**:

- 6.2 On the Semantics of Languages and Models: All
- 6.3 On the Semantics of Metamodels: All

Metamodeling and the MOF, from **OMG White Paper**:

- Meta-Modeling and the OMG Meta Object Facility (MOF): All

Metamodeling and the MOF, from the **MOF 2.5 specification**:

- 9.1, 9.2 Reflection: All
- 10.1, 10.2 Identifiers: All
- 11.1, 11.2 Extension: All

Semantics of a Foundational Subset for Executable UML Models (fUML), from **fUML v1.5**:

- 1 Scope: All
- 4 Terms and Definitions: All
- 7.1 Abstract Syntax: Overview
- 8.1 Execution Model: Overview, Behavioral Semantics

Action Language for Foundational UML (Alf), from **Alf v1.1**:

- 1 Scope: All
- 2.3 Semantic Conformance: All
- 6.1 Overview - General: All
- 6.2 Integration with UML Models: All
- 6.4 Lexical Structure: All