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| **Minor Award Name** | Object Oriented Programming |
| **Minor Award Code** | 6N2108 |
| **Level** | 6 |

**Suggested resources to support delivery:**

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| --- | --- | --- | --- | --- |
| **Theme/Topic** | **Type** | **Relevance** | **Author/Source** | **Web Link** |
| **Software Downloads** | |  |  |  |
| IDE for Java | Software Download | Eclipse is a free, open source and cross platform IDE used for developing and unit testing Java applications (but plugins available for other languages including C, C++ and PHP). | Eclipse Foundation | <https://eclipse.org/downloads/> |
| IDE for C++ | Software Download | Code::Blocks is a free, open source and cross platform IDE used for developing C++ applications (but plugins available for C and Fortran). | The Code::Blocks team | <http://www.codeblocks.org/downloads> |
| IDE for Java and C++ | Software Download | NetBeans is a free, open source and cross platform IDE primarily intended for developing Java applications (but C++ plugin is available). | Oracle Corporation | <https://netbeans.org/downloads/> |
| IDE for C++ | Software Download | Visual Studio Community is a free, fully-featured, and extensible IDE for creating C++ applications. | Microsoft | <https://www.visualstudio.com/en-us/products/visual-studio-community-vs.aspx> |
| Non IDE | Software Download | Use Notepad++ and a compiler instead of using an IDE (Windows Environment).  MinGW (C++ Compiler)  JavaC (Java Compiler contained in the Java Development Kit) | Don Ho  Oracle Corporation  Oracle Corporation | <https://notepad-plus-plus.org/download/v6.8.6.html>  <http://sourceforge.net/projects/mingw/files/>  <http://www.oracle.com/technetwork/java/javase/downloads/index.html> |
| Installing Code::Blocks | Video | Addresses problems that students might have when installing Code::Blocks. | The New Boston | <https://www.thenewboston.com/videos.php?cat=16> |
| Design tool | Software Download | Pencil is free, open source software that gives the student a suite of tools that they can use to design solutions for GUI interfaces. Pencil is available for all platforms. | Evolus | <http://pencil.evolus.vn/Downloads.html> |
| UML Modelling Tool | Software Download | ArgoUML is free, open source software that gives the student a suite of tools that they can use to model a problem in UML. This software also allows the student to convert a UML diagram to Java code. | Eclipse Foundation | <http://argouml.tigris.org/> |
| Testing Software | PDF | This document contains detailed guidelines on how to fully and comprehensively test a program. It includes Unit Testing, Link/Integration Testing, Function Testing, System Testing and Acceptance Testing. It clearly explains how testing should be conducted and documented. | The Government of the Hong Kong Special Administrative Region | <http://www.ogcio.gov.hk/en/infrastructure/methodology/system_development/doc/g20.pdf> |
| **History of Programming Languages** | |  |  |  |
| History of programming languages | Website  Website | History of programming languages in detail, with internal links for further reading.  Visual representation providing a clear overview of the development of programming languages. | Wikipedia  O’Reilly books | <https://en.wikipedia.org/wiki/History_of_programming_languages>  <http://cdn.oreillystatic.com/news/graphics/prog_lang_poster.pdf> |
| The Triumph of the Nerds: The Rise of Accidental Empires | Video | Three part documentary that shows the insight look at the history of computers, from its rise in the 1970s to the beginning of the Dot-com boom of the late 1990s. | IMDB | <http://www.imdb.com/title/tt0115398/> |
| **Quick Reference** | |  |  |  |
| Reference Sheet | Website  PDF | This site is a useful reference for checking the syntax of Java statements.  This one-page document is useful as a quick reference for C++ syntax. | Dummies  DreamInCode | <http://www.dummies.com/how-to/content/java-for-dummies-cheat-sheet.html>  <http://www.dreamincode.net/downloads/ref_sheets/cpp_reference_sheet.pdf> |
| Dictionary | Website | The Free On-line Dictionary of Computing (FOLDOC) is an online, searchable, encyclopaedic dictionary of computing subjects. | Denis Howe, Imperial College London | <http://foldoc.org/> |
| Object Oriented Terminology | Website  PDF  DOC | Glossary of Object Oriented terminology.  Click on OOP Terms link | Wikipedia  J. E. Akin  L. Dodds | <https://en.wikipedia.org/wiki/Index_of_object-oriented_programming_articles>  <https://www.clear.rice.edu/mech517/Books/oop14.pdf>  <http://ldodds.com/lectures/intro2java/> |
| Reserved Keywords | Website | Reserved keywords in C++ and Java at a glance, with links to their usage. | Microsoft  Wikipedia | <https://msdn.microsoft.com/en-us/library/2e6a4at9.aspx>  <https://en.wikipedia.org/wiki/List_of_Java_keywords> |
| Style Guides | Website | Guide to the dos and don'ts of writing C++ and Java code. |  | <https://google.github.io/styleguide/cppguide.html>  <https://google.github.io/styleguide/javaguide.html> |
| **Tutorials** |  |  |  |  |
| Series of video tutorials on C++ and Java | Website | This site contains clear videos on Classes, Operator Overloading, Inheritance and Polymorphism using C++ and Java. | The New Boston | <https://www.thenewboston.com/videos.php?cat=16>  <https://www.thenewboston.com/videos.php?cat=31> |
| Series of video tutorials on C++ | Video | These tutorials consist of self-contained videos on how to create and use classes and objects and how to implement inheritance in C++. | Programminghelporg (YouTube) | <https://www.youtube.com/playlist?list=PL318A5EB91569E29A> |
| Series of video tutorials on Java | Video | This sequence of video tutorials consists of a suite of videos that explain Object Oriented concepts in Java, in relatively short videos. | Absolute Zero | <https://www.youtube.com/user/AbsoluteZeroBelow/videos> |
| Series of written tutorials on C++ and Java | Website | This site offers a collection of individual topics in C++ and Java, from basic statements to advanced Object Oriented Concepts. | TutorialsPoint | <http://www.tutorialspoint.com/cplusplus/cpp_functions.htm>  <http://www.tutorialspoint.com/java> |
| Series of written tutorials on C++ topics | Website | These tutorials explain the C++ language from its basics up to the newest features introduced by C++ 11. Chapters have a practical orientation, with example programs in all sections. | CPlusPlus | <http://www.cplusplus.com/doc/tutorial/> |
| Series of written tutorials on Java topics | Website | The Java Tutorials are practical guides for programmers who want to use the Java programming language to create applications. They include hundreds of complete, working examples, and dozens of lessons. Groups of related lessons are organised into "trails". | Oracle | <https://docs.oracle.com/javase/tutorial/> |
| **Quizzes** |  |  |  |  |
| Quiz Creator | Software | This software is not specific to Object Oriented programming, but Hot Potatoes is a useful piece of software that includes five applications that can help create exercises for students to complete. | University of Victoria Humanities Computing and Media Centre | <https://hotpot.uvic.ca/> |
| Questions and Answers | Website | This site offers questions and answers in C++ and Java, including interview questions, online quizzes, online quick tests and online mock tests. |  | <http://www.tutorialspoint.com/questions_and_answers.htm> |
| **Books** |  |  |  |  |
| Objects, classes, operator overloading, inheritance, polymorphism, templates and files. | Book | “A guide to C++ Programming” is currently out of print, but it is available second hand. Chapters 8 onwards provide clear explanations on objects, classes, operator overloading, inheritance, polymorphism, templates and files. | Paul Kelly | <http://www.aguidetoc.net/> |
| Classes, Objects, Inheritance, Encapsulation, Polymorphism | eBook | Chapter 14 onwards provides clear explanations of many of the Object Oriented concepts for this module (using C++). Each chapter has a summary and exercises. | Richard L. Halterman | <http://python.cs.southern.edu/cppbook/progcpp.pdf> |
| **Media** |  |  |  |  |
| Codes that changed the world. | Podcasts | Interesting podcasts on different programming languages. | BBC Radio 4 | <http://www.bbc.co.uk/programmes/b05qqhqp/episodes/downloads> |
| General | Website | News site | DHI Group, Inc. | <http://developers.slashdot.org/> |

**Useful Organisations:**

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| **Name** | **Contact Information** |
| NITTA (National Information Technology Teachers Association) | Become a member of the Nitta Brown Bag Sessions to share information: <https://sites.google.com/a/cfedundrum.com/nitta-brown-bag-sessions-beta/> |
| Oracle Technology Network | <http://www.oracle.com/technetwork/index.html> |
| Quality and Qualifications Ireland | [www.qqi.ie](http://www.qqi.ie) |
| Further Education Support Service (FESS) | [www.fess.ie](http://www.fess.ie) |
| **MOOCs (Massive Online Open Courses)** | |
| Free access to online courses  Search regularly for new courses and new start dates | <https://www.mooc-list.com/> |