

# Text Resources

Text Resources (resources prepended with "[\*]" are downloadable.)

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## Optional Textbooks

There is no required text for this course. However, these three books cover much of the material.

- Baldwin, Carliss Y. and Kim B. Clark.  
[\*Design Rules, Vol. 1: The Power of Modularity.\* \(Links to an external site.\)](#)  
The MIT Press, March 15, 2000.
- Taylor, R. N., N. Medvidovic, and E. M. Dashofy.  
[\*Software Architecture: Foundations, Theory, and Practice.\* \(Links to an external site.\)](#)  
Wiley, January 9, 2009.
- Qian, Kai, Ziang Fu, Lixin Tao, Chong-Wei Xu, and Jorge L. Di'az-Herrera.  
[\*Software Architecture and Design Illuminated.\* \(Links to an external site.\)](#)  
Jones and Bartlett, 2010.
- Craig Larman.  
[\*Applying UML and Patterns, An Introduction to OO Analysis and Design, 3d Edition\* \(Links to an external site.\)](#)  
Prentice-Hall, 2004.  
Available electronically from the GT Library: Select ebooks, then Safari. Search for Larman.
- Amy Brown and Greg Wilson (Eds.).  
[\*The Architecture of Open Source Applications\* \(Links to an external site.\)](#)  
Published under the Creative Commons Attribution 3.0 Unported license, 2012.

Also, if you don't already own one, access to a Software Engineering introductory text such as [Pressman \(Links to an external site.\)](#) or [Sommerville \(Links to an external site.\)](#) may be helpful.

## Required Readings

- Emmerich, Wolfgang.  
[\[\\*\] "Software Engineering and Middleware: A Roadmap".](#)  
*International Conference on Software Engineering - Future of Software Engineering Track*, 117-129, 2000.
- Gamma, Erich, Richard Helm, Ralph Johnson, and John Vlissides.  
[\[\\*\] \*Design Patterns: Elements of Reusable Object-Oriented Software.\*](#)  
Addison-Wesley, pp. 6-9, pp. 275-343, 1995.

- Garlan, David, and Mary Shaw.  
[\[\\*\] "An Introduction to Software Architecture."](#)  
 Carnegie Mellon University Technical Report, CMU-CS-94-166, January 1994.
  
- Harel, David.  
[\[\\*\] "On Visual Formalisms."](#)  
*Communications of the ACM*, 32(5):514-530, May 1988.
  
- Kruchten, Philippe.  
[\[\\*\] "The 4+1 View Model of Architecture."](#)  
*IEEE Software*, 12(6):42-50, November-December 1995.
  
- Martin, Robert.  
[\[\\*\] "Granularity." \(Links to an external site.\)](#)  
 Excerpt from *The C++ Report*, Vol. 8, No. 10, November 1996.
  
- Martin, Robert.  
[\[\\*\] "Heuristics and Coffee."](#)  
 Chapter 11 in *UML for Java Programmers*, Prentice Hall, 2003.
  
- Medvidovic, N., and R. N. Taylor.  
[\[\\*\] "A Classification and Comparison Framework for Software Architecture Description Languages."](#)  
*IEEE Transactions on Software Engineering*, 26(1):70-93, January 2000.
  
- Mehta, Nikunj R., Nenad Medvidovic, and Sandeep Phadke.  
[\[\\*\] "Towards a Taxonomy of Software Connectors."](#)  
*Proceedings of the 22nd International Conference on Software Engineering*, Limerick, Ireland, pp. 178-187, 2000.
  
- Object Management Group.  
[\[\\*\] OCL Specification V2.3.1.](#)  
 January, 2012.
  
- Object Management Group.  
[\[\\*\] UML Superstructure Specification V2.4.1.](#)  
 August, 2011.

## Additional Texts

### Books

- Baldwin, Carliss Y. and Kim B. Clark.  
[Design Rules, Vol. 1: The Power of Modularity Hardcover. \(Links to an external site.\)](#)  
 The MIT Press, March 15, 2000.
  
- Booch, Grady, James Rumbaugh, and Ivar Jacobson.  
[The Unified Modeling Language User Guide, 2nd Edition. \(Links to an external site.\)](#)  
 Addison-Wesley, 2005.
  
- Jan Bosch.  
[Design and Use of Software Architectures \(Links to an external site.\)](#)  
 Addison-Wesley, May 19, 2000.

- Clements, Paul, Felix Bachmann, Len Bass, David Garlan, James Ivers, Reed Little, Robert Nord, and Judith Stafford.  
[\*Documenting Software Architectures: Views and Beyond.\* \(Links to an external site.\)](#)  
Addison-Wesley, 2003.
- Czarnecki, Krzysztof, and Ulrich Eisenecker.  
[\*Generative Programming: Methods, Tools, and Applications.\* \(Links to an external site.\)](#)  
Addison-Wesley, 2000.
- Fowler, Martin.  
[\*Patterns of Enterprise Application Architecture.\* \(Links to an external site.\)](#)  
Addison-Wesley, 2003.
- Fowler, Martin.  
[\*UML Distilled: Applying the Standard Object Modeling Language, 3rd Edition.\* \(Links to an external site.\)](#)  
Addison-Wesley, 2003.
- Fowler, Martin, Kent Beck, John Brant, William Opdyke, and Don Roberts.  
[\*Refactoring: Improving the Design of Existing Code.\* \(Links to an external site.\)](#)  
Addison-Wesley, 1999.
- Gamma, Erich, Richard Helm, Ralph Johnson, and John Vlissides.  
[\*Design Patterns: Elements of Reusable Object-Oriented Software.\* \(Links to an external site.\)](#)  
Addison-Wesley, 1995.
- Martin, Robert.  
[\*Clean Code / A Handbook of Agile Software Craftsmanship\* \(Links to an external site.\)](#)  
Prentice Hall, 2008.
- Norman, Don.  
[\*The Design of Everyday Things, Revised and Extended Edition.\* \(Links to an external site.\)](#)  
Newprint, 2013.
- Petroski, Henry.  
[\*The Evolution of Useful Things: How Everyday Artifacts-From Forks and Pins to Paper Clips and Zippers-Came to be as They are.\* \(Links to an external site.\)](#)  
Vintage, February 1, 1994.
- Prieto-Diaz, Ruben, and Guillermo Arango.  
[\*Domain Analysis and Software Systems Modeling.\* \(Links to an external site.\)](#)  
IEEE Computer Society Press, 1991.
- Riel, Arthur.  
[\*Object-Oriented Design Heuristics.\* \(Links to an external site.\)](#)  
Addison-Wesley, 1996.
- Rumbaugh, James, Ivar Jacobson, and Grady Booch.  
[\*The Unified Modeling Language Reference Manual, 2nd Edition.\* \(Links to an external site.\)](#)  
Addison-Wesley, 2004.

- Shaw, Mary, and David Garlan.  
[Software Architecture: Perspectives on an Emerging Discipline. \(Links to an external site.\)](#)  
Prentice Hall, 1995.
- Simon, Herbert.  
[The Sciences of the Artificial, 3rd Edition. \(Links to an external site.\)](#)  
MIT Press, 1996.
- Szyperski, Clemens.  
[Component Software, 2nd Edition. \(Links to an external site.\)](#)  
Addison-Wesley, 2002.
- Warmer, Jos, and Anneke Kleppe.  
[The Object Constraint Language. \(Links to an external site.\)](#)  
Addison-Wesley, 1999.
- Woodcock, Jim, and Martin Loomes.  
[Software Engineering Mathematics \(Links to an external site.\)](#)  
Addison-Wesley, 1989.

## Papers

- Aksit, M., K. Wakita, J. Bosch, L. Bergmans, and A. Yonezawa.  
"Abstracting Object-Interactions using Composition-Filters."  
*Object-based Distributed Processing*, R. Guerraoui, O. Nierstrasz, and M. Riveill (eds.), Springer-Verlag, 1993.
- Batory, Don.  
[\[\\*\] "Feature-Oriented Programming and the AHEAD Tool Suite." \(Links to an external site.\)](#)  
*Proceedings of the 26th International Conference on Software Engineering*, ICSE 2004, pp. 702-703.
- Batory, Don and Sean O'Malley.  
[\[\\*\] "The Design and Implementation of Hierarchical Software Systems with Reusable Components." \(Links to an external site.\)](#)  
*ACM Transactions on Software Engineering and Methodology (TOSEM)*, 1(4):355-398, October, 1992.
- Beugnard, Antoine, Jean-Marc Jezequel, Noel Plouzeau, and Damien Watkins.  
[\[\\*\] "Making Components Contract Aware." \(Links to an external site.\)](#)  
*IEEE Computer*, 32(7):38-45, July 1999.
- DeLine, Robert.  
[\[\\*\] "Avoiding Packaging Mismatch with Flexible Packaging." \(Links to an external site.\)](#)  
*International Conference on Software Engineering '99*, Los Angeles, California, 1999, pp. 97-106.
- Ehn, Pelle.  
[\[\\*\] "Scandinavian Design: On Participation and Skill." \(Links to an external site.\)](#)  
Chapter 4, Lawrence Erlbaum Associates, Hillsdale, New Jersey, 1993, pp. 41-77.
- Eichberg, Michael, Sven Kloppenburg, Karl Klose, and Mira Mezini.  
[\[\\*\] "Defining and Continuous Checking of Structural Program Dependencies." \(Links to an external site.\)](#)  
*ICSE '08: Proceedings of the 30th International Conference on Software Engineering*, Leipzig, Germany, May 2008, pp. 391-400.

- Fagan, M. E.  
["Design and Code Inspections to Reduce Errors in Program Development." \(Links to an external site.\)](#)  
*IBM Systems Journal*, 15(3):182-211, 1976.
  
- Fielding, Roy Thomas.  
["Architectural Styles and the Design of Network-based Software Architectures." \(Links to an external site.\)](#)  
 Department of Information and Computer Science, University of California, Irvine, 2000.
  
- Lau, Kung-Kiu, and Zheng Wang.  
[\[\\*\] "Software Component Models." \(Links to an external site.\)](#)  
*IEEE Transactions on Software Engineering*, 33(10):709-724, October, 2007.
  
- Medvidovic, N., D. S. Rosenblum, D. F. Redmiles, and J. E. Robbins.  
[\[\\*\] "Modeling Software Architectures in the Unified Modeling Language." \(Links to an external site.\)](#)  
*ACM Transactions on Software Engineering and Methodology*, 11(1):2-57, January, 2002.
  
- Meyer, Bertrand.  
 "On Formalism in Specifications."  
*IEEE Software*, 2(1):6-26, January, 1985.  
 Available [\[\\*\] here \(Links to an external site.\)](#), if you enter through the Georgia Tech Library.
  
- Parnas, David L.  
[\[\\*\] "On the Criteria to be Used in Decomposing Systems into Modules" \(Links to an external site.\)](#)  
*Communications of the ACM*, 15(12):1053-1058, September, 1972.
  
- Parnas, David L.  
[\[\\*\] "Designing Software for Ease of Extension and Contraction." \(Links to an external site.\)](#)  
*IEEE Transactions on Software Engineering*, SE-5(2):128-138, March, 1979.
  
- Parnas, David L.  
[\[\\*\] "On the Design and Development of Program Families." \(Links to an external site.\)](#)  
*IEEE Transactions on Software Engineering*, SE-2(1):1-9, 1976.
  
- Spitznagel, Bridget, and David Garlan.  
[\[\\*\] "A Compositional Formalization of Connector Wrappers." \(Links to an external site.\)](#)  
*25th International Conference on Software Engineering (ICSE'03)*, Portland, Oregon, May 3-10, 2003.
  
- Smaragdakis, Yannis and Don Batory.  
[\[\\*\] "Implementing Layered Designs with Mixin Layers." \(Links to an external site.\)](#)  
*ECOOP'98* "Object-Oriented Programming", pp. 550-570.
  
- Stirewalt, Kurt and Spencer Rugaber.  
["Automated Invariant Maintenance Via OCL Compilation." \(Links to an external site.\)](#)  
 \*Proceedings of Model Driven Engineering Languages and Systems'05,\* October 2-7, 2005, Montego Bay, Jamaica, Lionel C. Briand and Clay Williams, editors, Springer-Verlag, Lecture Notes in Computer Science, volume 3713, pp. 616-632.

## Web Resources

- [Acme Website \(Links to an external site.\)](#)
- [Allen Holub, \*JavaWorld\*, "Why extends is evil", August 2003 \(Links to an external site.\)](#)
- [Cunningham & Cunningham OO Wiki \(Links to an external site.\)](#)
- [\[\\*\] Design Study Template \(.doc\) \(Links to an external site.\)](#)
- [\[\\*\] First Order Logic Paper \(Links to an external site.\)](#)

- [Fowler Enterprise Patterns Page \(Links to an external site.\)](#)
- [JUnit A Cook's Tour \(Links to an external site.\)](#)
- [MSDN Chapter on Architectural Patterns and Styles \(Links to an external site.\)](#)
- [\[\\*\] OO Design Review Guidelines \(Links to an external site.\)](#)
- [Patterns Home Page \(Links to an external site.\)](#)
- [\[\\*\] Sample Exam Questions \(Links to an external site.\)](#)
- [Wikipedia article on Software Architecture Styles and Patterns \(Links to an external site.\)](#)

## Student Recommendations

- Eric Freeman, Elisabeth Robson, Bert Bates and Kathy Sierra. *Head First Design Patterns*. O'Reilly Media, October 25, 2004, [link \(Links to an external site.\)](#).