

David P. Voorhees, Ph.D.

Associate Professor

Director of Computer Science

Associate McDevitt Chair of CS

Le Moyne College

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Education

Doctor of Philosophy, Computer Science, Nova Southeastern University, Ft. Lauderdale, FL, 2005

Master of Science, Computer Science, Syracuse University, Syracuse, NY, 1983

Bachelor of Arts, Computer Science, SUNY Potsdam, Potsdam, NY, 1979

Professional Experience

Associate Professor, Department of Mathematics and Computer Science, Le Moyne College Aug. 2008 to Present

Assistant Professor, Department of Mathematics and Computer Science, Le Moyne College Aug. 2006 to Aug. 2008

Adjunct Instructor, Graduate School of Computer and Information Sciences, Nova Southeastern University Sept. 2005 to Sept. 2008

Visiting Assistant Professor, Department of Mathematics, Le Moyne College Aug. 1999 to Aug. 2006

IT Consultant, Computer Task Group, E. Syracuse, NY Feb. 1995 to Aug. 1999

- Provided consultation and project management services on IT related topics and issues.

Account Manager, Computer Task Group, E. Syracuse, NY Jan. 1992 to Feb. 1995

- Managed client accounts and software development projects.

Software Engineer, Computer Task Group, E. Syracuse, NY June 1982 to Jan. 1992

- Developed software using various life-cycles and development/target environments.

Programmer, American Telephone & Telegraph, Piscataway, NJ July 1979 to Aug. 1981

- Performance analysis of application programs, including file and database access.

Teaching

Curriculum Development

Undergraduate

- Designed, developed and obtained approval for a computer science minor program, which started in fall 2002. No computer science major or minor program had existed at Le Moyne College since 1994.
- Designed, developed and obtained approval for a computer science major program, which started in fall 2008.
- Designed, developed and obtained approval for a software engineering program and a dual major in information systems & software engineering. Worked in collaboration with the director of the information systems program.

Industry

- Participated in the design and development of the Quality Management “curriculum” used by Computer Task Group.

Course Development

Undergraduate

- Developed *body of knowledge* and associated course materials for a CS0 course (Introduction to Information Processing). Resulted in consistent delivery of topics across four to five class sections regardless of instructor.
- Designed and developed course materials for CS1 course (Introduction to Algorithms and Program Development). Implemented a depth-first approach to learning C++ which covered the imperative-style programming paradigm and then introduced object-orientation. After a few years teaching with this material, redesigned course materials from depth-first approach to breadth-first approach to C++. Focus was on iteratively introducing more details on sequence, selection, iteration, and subroutine constructs within C++. Course included imperative programming, programming with objects, and object programming paradigms. Redesigned course materials for fall 2010 due to switch from C++ to Python.
- Designed and developed course materials for CS2 course (Introduction to Algorithm Analysis and Data Structures). Redesigned course materials for spring 2011 due to switch from C++ to Python and C++.
- Designed and developed introduction to programming courses for COBOL, Visual Basic (version 6 and .NET), and Java (version 5.0) programming languages.
- Designed and developed programming language theory and survey course (Programming Du Jour). Covered an introduction to programming language theory as well as imperative, object-oriented, functional, and logic programming paradigms.
- Designed and developed course materials for a hardware architecture and operating systems course (Computing Environments). Focus is on operating system design and process management concepts and algorithms.
- Designed and developed a software design course (Structured Software Design). Focus is on user interface design, data modeling, structured software design techniques, quality assurance, and software design metrics.

- Design and developed course materials for a hardware architecture course (Hardware Computing Environments). To be taught for first time in fall 2010.
- Designed and developed a software design course (Object Oriented Software Design). Focus is on user interface design, data modeling, Unified Modeling Language techniques, quality assurance, and software design metrics. Taught for first time in spring 2011.
- Design and developed course materials for an operating system course (Software Operating Environments). Taught for first time in spring 2011.

Industry

- Design and developed OS/2 Presentation Manager course. Material used both internally within Computer Task Group and at client sites.
- Participated in the design and development of quality management courses for account managers, executives, and for sales representatives. Material used internally within Computer Task Group.

Courses Taught

	Times Taught	Date Last Taught
Undergraduate		
▪ COBOL Programming	3	Spring 2002
▪ Hardware Computing Environments (hw arch)	1	Fall 2010
▪ Computing Environments (hw arch & OS)	4	Spring 2009
▪ Introduction to Algorithm Analysis and Data Structures (CS2)	11	Spring 2012
▪ Introduction to Algorithms and Program Development (CS1)	18	Fall 2011
▪ Introduction to Information Processing (CS0)	27	Spring 2009
▪ Object Oriented Software Design	2	Spring 2012
▪ Programming Du Jour (programming languages: survey & theory)	3	Spring 2008
▪ Programming in Visual Basic	7	Fall 2008
▪ Programming with Java	1	Spring 2007
▪ Software Operating Environments (OS)	1	Spring 2011
▪ Structured Software Design	3	Fall 2011
	Times Taught	Date Last Taught
Graduate		
▪ Artificial Intelligence	1	Fall 2006
▪ Assembly Language and Architecture	9	Summer 2009
▪ Database Systems	1	Winter 2007
▪ Data Communications Networks	1	Summer 2006
▪ Java Programming Language	1	Spring 2006
▪ Programming Languages; Survey of Programming Languages	2	Summer 2008
▪ Software Engineering	1	Fall 2005

Industry

- C Programming
- OS/2 Presentation Manager
- Quality Management for Account Managers
- Quality Management for Executives
- Quality Management for Sales Representatives
- Software Engineering Development Program

Scholarship

Peer-reviewed Publications

Computer Science Pedagogy

- Voorhees, D. (2008). A New, Software Design Based, Financially Responsible Computer Science Major at a Small Liberal Arts College. *The Journal of Computing Sciences in Colleges*, 23(3), January, 2008.

Software Size

- Voorhees, D., Mitropoulos, F. (2007). A Software Size Measure for Estimating Effort based on a Software Development Life Cycle. *Proceedings of the 2007 International Conference on Software Engineering Theory and Practice*, July 9-12, 2007, Orlando, Florida, USA.

Software Design

- Voorhees, D. (1996). *The Business of Software Development*. Computer Task Group, Inc. (Peer-reviewed paper presented at company sponsored conference).

Research Interests

- Software size measures and software development effort prediction
- Software design and software quality
- Programming language pedagogy
- Computer science curriculum

Service

To the College

The following list summarizes service to Le Moyne College.

- Member of various search committees, including IT positions (programmer/analyst, systems administrator, desktop support, director of IT) and faculty positions (McDevitt CS Chair, CS tenure-track). Chair of search committees for McDevitt CS Chair and CS tenure-track.
- Faculty Liaison, Science Complex Building Project, June 2009 – present.
 - This involves coordinating all science faculty requests/needs with the architects and College administration, coordinating all science faculty meetings with the architects, participating in all

Science Complex Steering Committee meetings, and providing timely updates to the Provost on faculty requests and issues.

- Classroom Committee. Member, Fall 2007 – Spring 2009. Chair, Fall 2008 – Spring 2009.
- Program Director, Computer Science, August 2008 – present.
 - This involves attending major event day, first year orientations, accepted student day, scheduling courses, and advising computer science majors.
- Professional Rights and Welfare Committee. Member, Fall 2007 – Spring 2009.
- Faculty Senate Executive Board. Member, Fall 2004 – Spring 2006.
- Developed, administered, and compiled survey on student learning goals for mathematics, Department of Mathematics and Computer Science, Le Moyne, Fall 2004.
- Academic Technology Advisory Committee.
 - Member, Fall 2002 – Fall 2009. (Note: committee name changed over the years - Instructional Technology Advisory Committee, College Committee on Computing).
 - Secretary, Fall 2001 – Spring 2002.
- Member, Curriculum Subcommittee on Reviewing Physics Program, Fall 2003.
- Webmaster, Department of Mathematics and Computer Science, Le Moyne, Spring 2003 – present.

To the Profession

The following list summarizes service to the computing profession.

- Chair, Membership Committee, Syracuse Chapter of ACM, November 2008 – present.
- Provided peer-review of many papers for ITiCSE (Conference on Innovation and Technology in Computer Science Education), SIGCSE (ACM Special Interest Group on Computer Science Education) and CCSC (Consortium for Computing Sciences in Colleges) conferences, August 2005 – present.
- Judged student posters for CCSCNE (Northeast) and CCSCE (East) conferences.
- Judged science projects at Greater Syracuse Scholastic Science Fair, 2012.
- Member, Association of Computing Machinery (ACM), 1980 – present.

Awards

- Reverend Robert E. O'Brien, S.J., Service Award, Le Moyne College, April 15, 2011.