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Collection Assessment : Computational and Applied Mathematics, USFSP, 2017

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Library Assessment: Computational & Applied Mathematics
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Nelson Poynter Memorial Library
University of South Florida St. Petersburg
Prepared by Patricia Pettijohn

Overview of Library

The Nelson Poynter Memorial Library, University of South Florida St. Petersburg (USFSP), houses an extensive collection of materials that supports the educational, research, and service missions of USF St. Petersburg. USF St. Petersburg faculty, staff, and student have on-site access to the Poynter Library's collection of over 221,620 items, including monographs, current periodical and serial subscriptions, newspaper subscriptions, and audiovisual titles, as well as to the shared electronic resources of the USF System, providing USFSP students unlimited access to the vast holdings of a Carnegie Research 1 doctoral institution. This includes 1,934 journals in mathematics, over 1,800 journals in information technology, and core mathematics and computational sciences databases, e-book collections and reference resources. Currently, the USF Libraries subscribe to over 800 proprietary databases, and more than 26,000 electronic journals. Additionally, USFSP faculty and students can access documentaries and instruction videos available online through streaming media. All resources are available remotely to currently affiliated USF students, faculty, and staff. Efficient interlibrary loan and in-person borrowing privileges give access to the resources of State University system libraries. Through a series of formal agreements, USF St. Petersburg students and faculty freely borrow materials throughout the United States, and internationally.

The library is a three-story, 81,000 square feet building, offering 21 rooms for group study, seamless wireless access, an information commons with networked computers for student research and study, laptops for student check-out, and a dedicated instruction room. A wide variety of computer hardware and software is available to students, including networked collaboration areas with large monitors and shared access points, and a video production area freely available for student use.

Relevant Databases

- *AMS Journals (American Mathematical Society):* Fulltext articles published in journals of the American Mathematical Society.
- *Applied Science & Technology Source*, includes *Applied Science & Technology Index Retrospective*, *Applied Science & Technology Index*, *Applied Science & Technology Abstracts*,

Applied Science & Technology Full Text, *Computer & Information Systems Abstracts*, and *Computers & Applied Sciences Complete*. Full text for 1,400 journals; high-quality indexing and abstracts for thousands of academic journals, professional publications and other reference sources.

- *Lecture Notes in Mathematics*: A series from Springer that includes research monographs; lectures; and summer schools and intensive courses on topics of current research. Includes focus on mathematical texts analyzing new developments in modelling and numerical simulation.
- *MathSciNet*: database providing access to over 55 years of mathematical reviews and current mathematical publications from the AMS from 1940 to the present.
- *ArXiv.org e-Print Archive*: Archive and distribution server for research papers in physics and related disciplines, math, nonlinear sciences, and computer science.
- *AIP conference proceedings:* AIP Conference Proceedings report findings presented at many of the most important scientific meetings around the world. Published proceedings are valuable as topical status reports providing quick access to information before it appears in the traditional journal literature.
- *ACM Digital Library*: The Association for Computing Machinery digital library collection includes ACM journal and newsletter articles, conference proceedings and electronic books; it is the most comprehensive database of full-text articles and bibliographic literature covering computing and information technology.
- *AIAA Electronic Library - Meeting Papers:* The AIAA (American Institute of Aeronautics and Astronautics) electronic library contains more than four decades of technical information and documents online. AIAA Meeting Papers is a searchable full text database of all nonclassified papers presented at the American Institute of Aeronautics & Astronautics meetings, from 1963 to the present, available through the Institute's Electronic Library home page. AIAA publishes about 6,000 papers annually, from 20 to 30 technical conferences. The scope of the collection is diverse, covering areas associated with aerospace science. USF also subscribes to several of the journals included in the AIAA Electronic Library, including AIAA Journal, Journal of Aircraft, Journal of Guidance, Control and Dynamics, Journal of Spacecraft & Rockets, and Journal of Thermophysics and Heat Transfer.
- *Cambridge University Press Journals*: includes Acta Numerica, Advances in Applied Mathematics and Mechanics, Advances in Applied Probability, Annals of Actuarial Science, The ANZIAM Journal (Previous title: Journal of the Australian Mathematical Society. Series B. Applied Mathematics (1975 - 2000), ASTIN Bulletin: The Journal of the IAA, British Actuarial Journal, Bulletin of Symbolic Logic, Bulletin of the Australian Mathematical Society, Combinatorics, Probability and Computing, Communications in Computational Physics, Compositio Mathematica, East Asian Journal on Applied Mathematics, Ergodic Theory and Dynamical Systems, European Journal of Applied Mathematics, Forum of Mathematics, Pi, Forum of Mathematics, Sigma, Glasgow Mathematical Journal, Journal of Applied Probability, Journal of Fluid Mechanics, The Journal of Symbolic Logic, Journal of the Australian Mathematical Society (Previous title: Journal of the Australian Mathematical Society. Series A. Pure Mathematics and Statistics (1980 - 2000) (Previous title: Journal of the Australian Mathematical Society. Series A. Pure Mathematics (1975 - 1979), Journal of the Institute of Mathematics of Jussieu, LMS Journal of Computation and Mathematics, The Mathematical Gazette, Mathematical Proceedings of the

Cambridge Philosophical Society, Mathematical Structures in Computer Science, Mathematika, Nagoya Mathematical Journal, Network Science, Numerical Mathematics: Theory, Methods and Applications, Probability in the Engineering and Informational Sciences, Proceedings of the Edinburgh Mathematical Society, Proceedings of the Royal Society of Edinburgh Section A: Mathematics, The Review of Symbolic Logic.

- *Current Contents Connect* is a weekly table-of-contents database which presents the contents pages of current issues of the world's scholarly and technical journals, books, and proceedings literature.
- *Conference Proceedings Citation Index (1990 – Present)*: Web of Science Core Collection covers the published literature from the most significant conferences, symposia, seminars, colloquia, workshops, and conventions worldwide.
- *Engineering Village*: Global coverage of scientific and technical literature in the fields of physics, electrical engineering, electronics and computer science. Coverage from 1969 to the present.
- *IEEE/IET Electronic Library (IEL) / Institute of Electrical and Electronics Engineers Xplore*: Provides full-text access to IEEE transactions, IEEE and IEE journals, magazines, and conference proceedings published since 1988, and all current IEEE standards
- *InCites Essential Science Indicators:* Thomson Reuters *Essential Science Indicators* identifies influential individuals, institutions, papers, publications, and countries in hundreds of science disciplines.
- *Institute of Physics Electronic Journals*
- *ProQuest Computer Science Journals*: Discipline-specific coverage spanning thousands of publications, many in full text, inlcuding Computer Science; Information Systems; Computer Security; Database Design; Software Development; Web Commerce; LANs; WANs; Intranets; Internet.
- *SciELO Citation Index (1997 - Present):* Thomson Reuters Scientific Electronic Library Online Citation Index provides access to open access science journals from Africa, Latin American, Portugal, and Spain.
- *Scopus*: *Scopus* is a large multi-disciplinary abstract and citation database of peer-reviewed literature, including science journals, books and conference proceedings.
- *Springer Lecture Notes in Computer Science:* Focuses on new developments in computer science and information technology and original research results reported in proceedings and post proceedings. There are over 1000 volumes in this online collection.
- *Taylor & Francis Online Journals*: About 100 journals, with over 190,000 full text articles, within the category Mathematics and Statistics.
- *Turpion Publications*: Database of Russian Science journals, many in math and physics, in English translation.

Selected E-Book Collections

- *Cambridge Books Online*: Includes over 400 monographs from the *London Mathematical Society Lecture Note Series*, *Cambridge Studies in Advanced Mathematics*, *Cambridge Tracts in Mathematics*, *Lecture Notes in Logic*, *Perspectives in Logic*, *New Mathematical Monographs*, *AIMS Library of Mathematical Sciences*, *Australian Mathematical Society Lecture Series*, *Cambridge Monographs on Applied and Computational Mathematics*, *Cambridge Texts in Applied Mathematics*, *Learning in Doing: Social, Cognitive and Computational Perspectives*,

London Mathematical Society Student Texts, *Cambridge Monographs on Mathematical Physics*, Cambridge *Monographs on Mechanics*, *Cambridge Series in Statistical and Probabilistic Mathematics*, *Cambridge Tracts in Theoretical Computer Science*, *Canto Classics*, and *Institute of Mathematical Statistics Textbooks*.

- *CRCnetBASE*: The Science, Technology, Engineering and Medicine eBook platform from CRC Press, offers more than 15,000 references in over 400 subject areas and more than 40 collections.
- *The IEEE-Wiley Ebooks Library*: This collection of over 400 ebooks includes handbooks, introductory and advanced texts, reference works and professional books that cover a variety of disciplines in technology and computer science.
- *Oxford Scholarship Online: Mathematics*: The Oxford Scholarship Online Mathematics Collection covers the wide field of mathematics, from pure mathematics to the many applications of mathematics and statistics. Some key series within this collection are: Oxford Logic Guides, Oxford Statistical Science Series, and Oxford Studies in Probability, Numerical Mathematics and Scientific Computation. About 115 e-books.
- *ProQuest Computer Science Collection:* Global, comprehensive coverage of computer science topics, ranging from computer security to web commerce. This database also includes deep indexed tables & figures.
- *Springer eBook Collection in Mathematics & Statistics*: Part of an integrated full-text database for journals, books, protocols, eReferences, and book series published by Springer, with 4,821 Mathematics and Statistics eBooks.
- *Springer eBook Collection in Computer Science*: This collection covers the applications, concepts, theory and technology of computer science, mostly conference proceedings and reference resources.
- *Synthesis Digital Library of Engineering and Computer Science*: Organized into series, each pertaining to a different topic in the field of engineering and computer science. Series include: Artificial Intelligence and Machine Learning, Data Management, Digital Circuits & Systems, Power Electronics, and Tissue Engineering. Lectures can be found within each series consisting of 50- to 100-page e-books written by prominent contributors to the field. Some Lectures also include enhancements such as animations, code, and audio.

Selected Digital Reference Resources

- *The Concise Oxford Dictionary of Mathematics* (5 ed.), James Nicholson, ed. Oxford University Press, 2014: Over 3,000 entries covering pure and applied mathematics and statistics, with web links, and detailed appendices.
- *A Dictionary of Computer Science* (7 ed.), edited by Andrew Butterfield and Gerard Ekembe Ngondi, Oxford University Press, 2016: Over 6,500 entries
- *Dictionary of Algorithms, Data Structures, and Problems:* Online dictionary of algorithms, algorithmic techniques, data structures, problems, and related definitions. Some entries have links to further information and links to implementations with source code.
- *Encyclopedia of Mathematics and its Applications* (Cambridge)
- *Handbook of Mathematical Functions with Formulas, Graphs, and Math Tables*, by Milton Abramowitz; Irene Stegun, an online compendium of mathematical formulas, tables, and graphs.

- *Van Nostrand's Scientific Encyclopedia (VNSE)*: A comprehensive and authoritative resource broadly covering science and mathematics.

Selected General and Multidisciplinary Databases

- *Academic Search Premier*
- *Expanded Academic ASAP*
- *General OneFile*
- *ISI Web of Science (WOS):* Science Citation Index Expanded
- *JStor*: JStor Mathematics includes 58 journal titles.
- *OCLC PapersFirst*: Indexes over two million papers presented at conferences worldwide. Also covers congresses, expositions, workshops, symposiums, and other meetings.
- *OmniFile Full Text Mega Expanded* (EBSCO)
- *Project Muse*: Includes 3,110 e-Books and 13 Journals in the category of Science, Technology, and Mathematics.

Library Holdings by Library of Congress Classification:

LC Classification QA (Mathematics):	4,464 PRINT ITEMS USFSP LIBRARY
LC Classification QA (Mathematics):	13,735 ITEMS USF E-RESOURCES
LC Classification QA (Mathematics):	44,122 ITEMS USF TAMPA LIBRARY
LC Classification QA (Mathematics):	64,241 ALL ITEMS USF SYSTEM

LIBRARY SERVICES

A reference and instruction librarian, currently Patricia Pettijohn, is assigned to support specialized collection development and library instruction for the Mathematics and Computational sciences program as library liaison. Faculty members are encouraged to contact their liaison to request purchases of monographs, media, instructional materials, or new electronic resources. Liaisons also are available to develop and present specialized bibliographic instruction sessions for physics classes and programs. Liaisons also offer one-on-one reference sessions through the reference assistance program, RAP. Distance education courses and programs may receive reference and instruction support by both the librarian liaison and the Distance Education Instructional Designers. Distance Education support for students consists of phone and email reference assistance as well as bibliographic instruction support provided through online bibliographies and subject guides, and by librarians embedded within the online component of courses through Canvas. A broad array of library services are available online, including online renewal, and online forms may be submitted to request personalized instruction or suggesting materials for purchase. Reference and research assistance is also available by chat and email through the statewide Ask-A-Librarian service.

The Library hosts a variety of computing resources, services, and access points to support staff, student and public users. Student use computing environments including the Information Commons, Library Instructional Classroom, and public spaces such as Poynter's Corner, powered by USFSP's most dense and robust wireless network. The first floor open use computing area, the Information Commons, hosts

all of the hardware and software applications that students need. Students may also check out laptops from the circulation desk, which can be used throughout the building or in the 14 study rooms of the library.