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USMA Library
758 Cullum Road
West Point, NY 10996

MADN-LIB **31 August 2015**

Library Policy Operating Memorandum No. 3.6.15

USMA Library Support Statement
Department of Systems Engineers

1. **PURPOSE:** To assist the Department of Systems Engineering (D/SE) in its goals, the USMA Library will seek to advance the intellectual development of all cadets enrolled in the four majors of the department and the core engineering sequence. The Library will serve as the intellectual foundation for the continued development of faculty and for the lifelong learning of D/SE graduates.

2. **INFORMATION LITERACY OBJECTIVES AND OUTCOMES FOR MAJORS:**
We recognize the importance of educating cadets and faculty to be competent and astute users of information. The library maintains a curated guide to academic research for the D/SE on our website to support cadet and faculty information literacy.

As coursework for D/SE majors culminates in a Capstone Project that synthesizes the knowledge and skills gained over their studies, the library seeks to ensure that cadets completing their Capstone Project and major within the D/SE exhibit strong information literacy and research skills in support of their academic work. To that end, the library liaison to the D/SE will design and manage a program to offer both generalized and targeted information literacy instruction to

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cadets enrolled both in its core courses and its advanced courses. This program will include direct instruction by library staff and indirect instruction through regular classroom faculty who are equipped to teach these skills.

SKILL	COURSE
Locate and acquire monographs and scholarly articles through the USMA Library catalog, ConnectNY, WorldCat, interlibrary loan, and general and subject databases	SE 300, 301
Distinguish between primary/secondary sources	SE 300,301
Distinguish between scholarly/non-scholarly sources	SE 300, 301
Understand the Dean's Documentation of Written Work	SE 300, 301
Citation formatting and management	SE 400, 402, 403, 411, 420, 450
Bibliography review	SE 400, 402, 403, 411, 420, 450
Special tools: EBSCO, JSTOR, ASCE Research Library, Chemical Economics Handbook (CEH), Engineering Village, DTIC, Information Bridge,JANES, Knovel Library, NASA Technical Reports Server (NTRS),SAE, OECD, ScienceDirect, Compendex	SE 400, 402, 403, 411, 420, 450

D/SE should be aware of the highly significant research libraries in the area, for example, the New York Public Library, Yale University, Cornell University, and Columbia University. Graduates should also be comfortable with obtaining items through interlibrary loan and should know how to navigate that process with ease.

Cadets in all D/SE courses may use a wide range of styles for writing and citing their sources and for arranging their bibliographies. Often these styles are adaptions of major systems (such as AIP, MLA, APA or Chicago). The styles listed below are those found on the major professional societies' web sites.

- Chemical Engineering Citation Style
- Civil and Environmental Engineering Citation Style
- Computer Science and Engineering Citation Style
- Electrical Engineering Citation Style
- Industrial and Systems Engineering Citation Style
- Materials Science and Engineering Citation Style

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- Mechanical Engineering Citation Style

Cadets should also be familiar with bibliographic managers, such as EndNote or RefWorks, which often have templates and plugins.

3. **COLLECTION PRIORITIES**: The collection in Systems Engineering supports the curricular and research activities of the Systems Engineering Department. Material is acquired to support teaching at the undergraduate level. The department supports study leading to the B.S. in Systems Engineering, Engineering Management, Systems Management, and Operations Research.

The D/SE is particularly interested in obtaining materials found in the following Library of Congress classifications

- T (Systems Analysis, Operation Research)
- TA (Engineering Management, Systems Engineering)
- TD (Environmental Engineering)
- TL (Transportation Engineering)
- QA (Mathematics)
- QC (Computer Science)
- HD (Management)

The library liaison will work to collect materials in support of these programs according to the following criteria:

- Lasting value of the content
- Appropriateness of treatment level
- Strength of present holdings in same or similar subject areas
- Demand, as determined by, e.g. circulation data and interlibrary loan requests for material on the same or similar subjects

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- Cost effectiveness
- Suitability of format to content
- Authority of author
- Reputation of publisher
- Reviews in subject-specific and standard library reviewing sources

The general emphasis is to acquire and retain materials which are currently the most authoritative in their fields. The library recognizes the need for retrospective purchases and will use standard bibliographies and other evaluation tools to locate and fill gaps in the collection when warranted by curriculum changes and new program additions. However, it is most important to spend funds for valuable current publications of long-term worth, thus preventing a future need for retrospective buying.

Except for foreign language dictionaries and a small number of foreign language journals, the library acquires primarily English language reference and research sources.

Pamphlets are acquired only if substantial enough to justify cataloging. No pamphlet/vertical file is maintained.

Final selection of materials is the responsibility of the USMA Library liaison. Faculty members are encouraged to make recommendations for library acquisitions from their professional literature as well as for materials supporting their courses and students' research needs. Cadet requests for acquisition of materials are also welcomed, and are reviewed by the same standards as are requests from all other sources.

No contractual agreement for cooperative collection development exists between USMA Library and any other library. However, USMA is a member of the ConnectNY consortium of fifteen other academic libraries in the State of New York. Should the research materials required by faculty and cadets not be met by holdings of the USMA Library and ConnectNY, access to additional information resource is provided through interlibrary loan services from libraries around the world.

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4. **FORMAT OF MATERIALS**:

a. **MONOGRAPHS**:

USMA Library collects monographs in multiple formats, including paper, microform, and digital. All formats will be considered when purchasing monographs and the decision will be based on lasting value, expected use and cost.

b. **SERIALS:**

USMA Library collects serials in multiple formats including paper, microform, and digital. While all formats will be considered when purchasing serials, we will generally purchase digital materials unless there is a strong justification for acquiring print, microform or any other format.

c. **DIGITAL RESOURCES:**

Where possible, the USMA Library will seek to provide digital resources to support the curriculum except in cases where print materials are superior or required based on value, use, or cost.

Generally, digital resource should meet these goals:

- Support remote users
- Be directly accessible via the USMA network/ remote proxy
- Be licensed for multiple simultaneous users
- Deliver reliable access
- Be available 24 hours a day, 7 days a week
- Utilize a unified and intuitive interface

d. **GOVERNMENT DOCUMENTS:**

The Government Documents area of the USMA Library holds outstanding primary source materials for D/SE majors and faculty. Congressional hearings and committee reports should be invaluable for research.

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e. **DATASETS:**

The Department does not purchase datasets through USMA Library.

f. **OTHER NON-PRINT MATERIALS:**

Limited purchases of non-print materials (i.e. CDs for learning foreign languages, DVDs for leisure, image collections, etc) are evaluated on the same basis as monographs, with special emphasis on the suitability of the format to the content, and on the quality of the production.

5. **SPECIAL COLLECTIONS AND ARCHIVES**: The Special Collections and Archives division of the USMA Library is of great significance for the D/SE, possessing many items of enormous interest to students of the field as well as for instructions wanting to research the evolution of the D/SE.

6. **ROLE OF THE DEPARMENT OF SYSTEMS ENGINEERING CENTERS AND LABS AND ITS INTERACTION WITH THE USMA LIBRARY:** The USMA Library supports the community of instructors, researchers and students working in the multidisciplinary sphere of Systems Engineering by providing collections, services and instruction that will enhance the collaborative experience of each researcher who utilizes the below centers.

Operations Research Center of Excellence (ORCEN)
The Operations Research Center of Excellence (ORCEN) provides full-time analytical capability to the United States Military Academy, the United States Army, and the Department of Defense.

The Operations Research Center of Excellence (ORCEN) provides full-time analytical capability to the United States Military Academy, the United States Army, and the Department of Defense. The ORCEN provides projects to Academy faculty and cadets giving them the opportunity to investigate a wide range of interdisciplinary, systemic issues and to apply many of the Operations Research, Systems Engineering and Engineering Management concepts studied in the classroom. These projects demonstrate the relevance and importance of Operations Research and Systems Engineering in today's high-technology Army.

Organized under the Office of the Dean as an Academy Center of Excellence, the ORCEN was originally sponsored by the Assistant Secretary of the Army (Financial Management & Comptroller) through a Memorandum of Agreement between the Department of Systems Engineering (DSE) and the Department of Mathematics (DMath). Its establishment was born of the need for developing research opportunities to enrich DSE and DMath education. Fully staffed since Academic Year 1990-1991, the Operations Research Center has made significant contributions to cadet education, faculty development, and the Army at large.

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7. CENTER FOR NATION RECONSTRUCTION AND CAPACITY DEVELOPMENT (C/NRCD):

The Superintendent of the United States Military Academy officially approved the creation of the C/NRCD on 18 November 2010. Leadership from The Academy and Army along with other members of academia, realized that the US Army, as an agent of the nation, would continue to grapple with the burden of nation building for the foreseeable future.

The military has performed this role throughout history-ensuring the safety and security of the local populace, assisting with reconstruction, and providing basic sustenance and public services. Equally important, its military forces, in support of the civilian agencies charged with leading these complex endeavors, will play a vital role in nation reconstruction and capacity development in both pre and post conflict environments.

The C/NRCD takes an interdisciplinary and systems approach in facilitating and focusing research, training, information dissemination, and professional practice in the planning, preparation, execution, and assessment of efforts to construct infrastructure, policy, competency development, and governance to support to the transformation of communities and nations mainly in developing countries in a pre and post conflict environment or in the aftermath of a natural or manmade disaster. The C/NRCD supports cadet capstone projects and faculty research that align with its mission.

West Point and the Department of Systems Engineering afford the C/NRCD an interdisciplinary perspective making it uniquely postured to develop training, education, and research to support this mission. The C/NRCD is currently housed on the fourth floor of Mahan Hall (Bldg. 752).

8. **LIFECYCLE ACQUISITIONS MANAGEMENT LAB**: DSE is home to a state-of-the-art Visualization and Simulations laboratory for Student Capstone Research and Faculty Research.

9. **COMBAT SIMULATION LAB:** DSE is home to state-of-the-art technology that allows students to visualize and build models of their products.
The Combat Simulation Lab provides faculty and cadets the opportunity to investigate a wide range of interdisciplinary, systemic issues and to apply simulation software to visualize and test projects from the classroom and research. Lab assets include:

10**. INFANTRY WARRIOR SIMULATION (IWARS):** IWARS is a constructive, agent

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based, force on force combat simulation focused on individual and small unit dismounted combatants and their equipment used to assess operational effectiveness across a spectrum of missions, environment and threats.

11. **JOINT CONFLICT AND TACTICAL SIMULATION (JCATS):** A constructive simulation model designed to handle large scale exercises with the capabilities of handling large counts of entities-internal and external-to include their equipment. JCATS provides the capabilities of building systems and proving analytical output through batch run simulated exercises. The model provides a good source of an After Action Review Tool.

12. **ONE SEMI-AUTOMATED FORCE (OneSAF):** OneSAF is a next generation, entity-level simulation that supports both Computer Generated Forces (CGF) and Semi-Automated Forces (SAF) applications. This enables it to support a wide range of U.S. Army brigade and below constructive simulations and virtual simulators. OneSAF is currently being integrated by the SE Core program as the replacement SAF for virtual trainers such as Aviation Combined Arms Tactical Trainer (AVCATT), Close Combat Tactical Trainer (CCTT) and the Common Gunnery Architecture (CGA) and will serve as the basis for subsequent modernization activities for simulators across the U.S. Army. OneSAF was built to represent the modular and future force and provides entities, units and behaviors across the spectrum of military operations in the contemporary operating environment.

13**. VBS2:** Is a commercial off-the-shelf game-based training platform, incorporating a high-fidelity virtual environment, scenario and mission editors, AAR and a powerful development suite. Soldiers move in a shared, immersive, first person environment that supports mounted and dismounted operations. The system provides ground and air vehicles, small arms and vehicle mounted weapons, communications, and interactive opposing forces of the contemporary operational environment, including improvised explosive devices. War fighters

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learn to anticipate and respond to tactical situations by practicing existing and developing tactics, techniques and procedures. Trainers and leaders use VBS2 to rehearse tactical missions and conduct AARs of training sessions using easy-to-use authoring tools integrated in the simulation.

Below is a sample of some of the projects our Cadets, Staff, and Faculty have been involved with.

- XM25: We currently have a mock-up of the XM25 in our Lab which used IWARS and VBS2 in the simulation model.

- Cooperative Engagement (ORCEN /U.S. Army PEO STRI Project: The idea of this project was to mount a video feed in an Apache (Longbow) allowing the pilot situational awareness through the UAS's video camera. Enabling the Apache pilot a better ground to air communication when executing a cooperative engagement mission. The simulation model used for this project was VBS2.
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- Base Camp Development (Fort Leonard Wood, Mo./ORCEN Project) This project was to integrate a simulation model in their student curriculum to assist the students in a hasty base camp (FOB) with the potential growth of a 600-man base camp. The simulation model used for this project was VBS2.

Additionally, our Combat Simulation Lab is used for summer training programs such as Science Technology Engineering Math (STEM) Outreach and Summer Leaders Seminar Program (SLS).

14: **COLLECTION MANAGEMENT PRIORITIES**: The full text databases of JSTOR, EBSCO and Project Muse are utilized very often by the faculty. ScienceDirect remains an

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important database for the engineering, geology, oceanography, and climatology courses offered by the department. The Elsevier databases Compendex/ Engineering Village are used consistently by the environmental courses.

15. **EXISTING OR PROSPECTIVE GIFT SUPPORT**: While there are no gift funds specifically designated for the field, topical gift funds may be used to support materials for the D/SE.

16. **LIAISON ENGAGEMENT**: The liaison will attend department and program director meetings when requested. The liaison will assist faculty members with integrating library materials in the design of their curricula as well as with their own professional research. It will be extremely helpful to be on the e-mail distribution list.

17. **EXPIRATION:** The policy is effective until superseded or rescinded.

CHRISTOPHER D. BARTH
Librarian and Associate Dean, USMA