Examination And Implementation
Of A Proposal For A Ph.D. Program in Administrative Sciences

by

Robert D. Randall Jr.

March, 1992

ThesisAdvisor: Tung X. Bui
Co-Advisor: Kenneth W. Thomas

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Examination and Implementation Of A Proposal For A Ph.D. Program In Administrative Sciences

by

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Lieutenant, United States Navy
B.S., The University of West Florida 1985

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN INFORMATION SYSTEMS

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I. INTRODUCTION

The purpose of this study is to investigate the feasibility of a Ph.D. program in the Department of Administrative Sciences and to develop a final proposal for a Ph.D. program which may be submitted to the Academic Council. This study was initiated by the Administrative Sciences Departmental Ph.D. Feasibility Committee to determine whether a Ph.D. program is feasible and how it will be implemented.

A. ORGANIZATION OF THE THESIS

This chapter discusses the organization, purpose and elements of the thesis. Chapter II investigates the importance for the U.S. Navy and Department of Defense (DoD) of providing an advanced education in administrative sciences to military officers and DoD civilians. Chapter III briefly reviews standards and policies set forth by the Academic Council for Departments that plan to offer a Ph.D. program at the Naval Postgraduate School (NPS). The techniques used in collecting and analyzing the data are discussed in chapter IV. Finally, a summary of results is provided in chapter V. Appendix A excerpts sections from the Academic Council Policy Manual regarding the Ph.D. program. Appendix B is the proposal for a Ph.D. program. It addresses the criteria set forth by the Academic Council in its Policy Manual section 259. Appendix C is the proposed fields of study in Administrative Sciences. It is based on the requirements and procedures set forth in section 250, 255, and 256 of the Academic Council Policy Manual. Appendix D contains an introduction to the
faculty. It serves as a supplement to the proposal for a Ph.D. program and also addresses additional criteria listed in section 259. As previously cited, Appendix A of this thesis contains extracts of sections 250, 255, 256, and 259 from the Academic Council Policy Manual.

B. METHODOLOGY

The intent of this thesis is the preparation of a Ph.D. proposal for the Department of Administrative Sciences. To achieve this goal, the following research activities were undertaken:

- Data Collection (e.g., recent enrollment, graduation statistics; faculty publications, master's theses advised, and research topics).
- Curricula Reviews (e.g., Information Technology, Logistics, and Management).
- Study of Ph.D. programs offered by major academic institutions similar to the Naval Postgraduate School (e.g., New York University and University of California at Berkeley).
- Analysis of the NPS Academic Council guidelines for the establishment of a Ph.D. Program (i.e., Section 259 of A.C. policy manual).
- Review of two proposals recently approved by the Academic Council (i.e., Computer Science and Mathematics Departments).

C. SCOPE OF THE STUDY

Since WWII and through the computer age, the application of administrative science theory and methodologies from the behavioral sciences and quantitative methods from the applied sciences has resulted in an accelerated rate of knowledge and information acquisition. The professional development provided to military officers and DoD civilians through an advanced education in administrative sciences will provide the U.S. Navy and DoD with well educated
personnel. These personnel will make major contributions as future leaders and managers who will be identifying and solving future problems, as well as in the application of new technology and methodology to existing problems.

There are good reasons to argue that:

- The level of administrative sciences education provided by a master of science degree does not provide the U.S. Navy or DoD with adequately trained personnel in research methodologies.
- In today's highly information intensive government organizations, there is a shortage of doctorally trained people in administrative sciences while at the same time people with administrative sciences backgrounds are in great demand.
- Administrative Sciences scholars will fill vital and demanding roles in the U.S. Navy and DoD, providing people who firmly understand the technical and organizational aspects of computer-based systems which support the U.S. Navy and DoD.

This study will provide the Department of Administrative Sciences with guidance for the implementation of a Ph.D. program in the approved fields of study in administrative sciences.

D. RESEARCH QUESTIONS

- Is it feasible to implement a Ph. D. program in the Administrative Sciences Department?
- What are the faculty resources available to successfully implement and maintain a Ph.D. program in the Administrative Sciences Department?
- What are the requirements for a Ph. D. minor program in the Administrative Sciences?
- What are the administrative requirements, prescribed by the Academic Council, for starting a Ph.D. program?
- What are the approved fields of study for the Administrative Sciences?
II. IMPORTANCE OF AN ADVANCED EDUCATION IN ADMINISTRATIVE SCIENCES

A. INTRODUCTION

The field of administrative sciences encompasses accounting, economics, financial management, logistics support, behavioral sciences, management theory, operations analysis, statistics, information systems, and communications network systems. The ultimate goal of a Ph.D. education in administrative sciences is to educate students who will advance the state of knowledge in administrative sciences through research, study, and teaching of administrative sciences. An advanced education in administrative sciences will enable students not only to become critically familiar with the sophisticated technical and theoretical disciplines underlying the field of administrative sciences, but to develop the capacity to make major contributions in the creation and dissemination of innovative ideas.

B. ROLE OF A PH.D. PROGRAM IN ADMINISTRATIVE SCIENCES

The role of a Ph.D. program in Administrative Sciences at the Naval Postgraduate School is to serve the advanced educational needs of the Navy and to support the broad requirements of the NPS mission:
To conduct and direct the advanced education of commissioned officers, and to provide such other technical and professional instruction as may be prescribed to meet the needs of the Naval Service, and in support of the foregoing, to foster and encourage a program of research in order to sustain academic excellence. [Ref. 1: p. 7]

The Ph.D. program in Administrative Sciences also supports the expanded mission of NPS as set forth by the Secretary of Navy:

The Naval Postgraduate School exist for the sole purpose of increasing the combat effectiveness of the Navy and Marine Corps. It accomplishes this by providing post-baccalaureate degree programs in a variety of subspecialty areas not available through other educational institutions. NPS also supports the Department of Navy through the continuing programs of high-level naval and maritime research and through maintenance of operational commands, laboratories, systems commands and headquarters activities of the Navy and Marine Corps. [Ref. 1: p. 7]

A Ph.D. program in Administrative Sciences will provide an outstanding opportunity for the Navy and DoD to achieve its goal of maintaining its commitment to an operationally focused officer corps while increasing its pool of intellectual resources at the Ph.D. level in critical areas of advancing knowledge and technology. This opportunity is especially important with the Navy and DoD's present need to trim down its force structure while still maintaining its overall effectiveness and ability to advance in knowledge and technology. Without this program, it will be impossible for DoD to offset the
growing deficit in human resources educated in areas with acute shortages in Ph.D's, nor will it be possible to exploit new technologies such as expert systems and decision support systems, and the management of these technologies, to aid its next generation of managers [Ref. 2: p. 2-4].

C. BENEFIT OF A PH.D. PROGRAM IN ADMINISTRATIVE SCIENCES AT NPS

The Administrative Sciences best supports the NPS mission through several key educational elements. A Ph.D. program will:

- Provide military officers and selected Department of Defense (DoD) civilians with the best educational resources to pursue the highest levels of knowledge in the Administrative Sciences. The purpose of a Ph.D. program in Administrative Sciences is to educate the future leaders and managers of human and financial resources who will advance the state of knowledge in their specific fields. [Ref. 3: p. 2]

- Enhance significant research in all areas of Administrative Sciences relevant to DoD. Especially with the rapid developments in technology coupled with the explosive growth in the science of management and decision making areas [Ref. 4: p. 2]. It is important for a Ph.D. program to develop individuals who will make major contributions in the creation and dissemination of new research in areas vital to the Navy and DoD. The skills and knowledge base of its officers in a Ph.D. program will provide significant research as part of the process toward fulfillment of a Ph.D. program.

- Provide the opportunity for administrative sciences' researchers to interact with other universities, DoD agencies, industries and laboratories who are working on the leading edge of new ideas and technologies concerning management issues and information systems development. [Ref. 5: p. 3]

- Support the quality of advanced course offerings at NPS. The advanced research supported by a Ph.D. program will greatly enhance the development and implementation of advanced courses. In the end, the quality of research and teaching improves. [Ref. 6: p. 1]
Serve the Navy and DoD by providing future management and information science professionals to teach undergraduates at our service academies and ROTC units or to conduct research for the Navy and DoD.
III. ACADEMIC COUNCIL STANDARDS AND REQUIREMENTS FOR A PH.D. PROGRAM

A. PURPOSE

The Academic Council is an advisory board that provides advice and assistance to the Provost at his request. The major concern of the Academic Council is twofold: Quality control and educational development. With respect to quality control, the Academic Council is concerned with the school academic programs. With respect to educational development, the Academic Council is concerned with how to promote excellence in graduate education. [Ref. 7: p. 1]

The Academic Council is also charged with establishing, monitoring, reviewing, certifying, and advising the Provost on policies and procedures which will produce high academic standards for graduate education which are consistent throughout the Naval Postgraduate School. This mission is carried out by conducting reviews of all the schools curricula and degree programs. These reviews are implemented through the formulation of standards, policies and procedures; by reviewing requests for waivers and deviations from the standards for students with special circumstances. [Ref. 7: p. 2]

B. COMPOSITION OF THE ACADEMIC COUNCIL

The Academic Council consists of school representatives and academic activities representatives. The school representatives and academic activities representatives are respectively listed in Tables 3-1 and 3-2.
TABLE 3-1

ACADEMIC COUNCIL
SCHOOL REPRESENTATIVES

Academic Dean - Chairman
Dean of Academic Administration - Secretary
Dean of Science and Engineering
Dean of Information and Policy Sciences
Director of Programs
Chairman of Faculty Scholarship Committee

[Ref. 7: p. 3]

TABLE 3-2

ACADEMIC COUNCIL
ACADEMIC ACTIVITIES REPRESENTATIVES

Department of Computer Science
Department of Mathematics
Department of Administrative Sciences
Department of Operations Research
Department of National Security Affairs
Department of Physics
Department of Electrical Engineering
Department of Meteorology
Department of Aeronautics
Department of Oceanography
Department of Mechanical Engineering
Anti-Submarine Warfare Academic Group
Space Systems Academic Group
Electronic Warfare Academic Group
Command, Control, and Communications Academic Group

[Ref. 7: p. 3]
C. ORGANIZATION OF THE ACADEMIC COUNCIL DOCTORAL COMMITTEE

The Academic Council's Doctoral Committee is one of three standing committees (Doctoral Committee, Special Programs Committee, and Curricula and Degree Requirements Committee). Each standing committee consists of five members of the Academic Council. The responsibilities of the doctoral committee is to establish doctoral committees for students; approve changes to a candidate's doctoral committee; establish operating procedures and standards for the doctorate and review all items and issues that may fall within the responsibility of other committees, but which pertain to the doctoral degree. [Ref. 7: p. 6-8]

In addition to these specific responsibilities, the doctoral committee is required, upon the request of the Council or the Chairman, or on their own initiative to recommend Council action on agenda items; propose new items for the agenda; recommend changes to the Academic Council's policies, or if necessary, create an ad hoc committee to provide the Council with recommendations for changes to its current policies; and to support the actions of the Academic Council in accordance with section 110 of the Academic Council's Policy Manual and as specified by the Naval Postgraduate School Organization and Regulations Manual. [Ref. 7: p. 8]
D. ACADEMIC COUNCIL REQUIREMENTS AND PROCEDURES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

The procedures and requirements set forth by the Academic Council to obtain a degree of doctor of philosophy at the Naval Postgraduate School are outlined in section of 250 of the Academic Council policy manual. This section is reproduced in Appendix A of the thesis. It provides information concerning admission, the doctoral committee, qualifying examination, the language requirements and minor fields, advancement to candidacy, the dissertation research, the final examination, the time limits and re-examinations, the award of the degree, and termination of a candidate's program. Section 250 also contains a list of academic departments authorized to award the Ph.D.

E. ACADEMIC COUNCIL REQUIREMENTS AND PROCEDURES FOR DISSERTATIONS

Section 255 and 256 of the Academic Council's policy manual outline the guidelines for the selection of dissertation supervisors and the acceptance of doctoral dissertations. These sections are also reproduced in Appendix A of this thesis.

F. ACADEMIC COUNCIL REQUIREMENTS AND PROCEDURES FOR DEPARTMENT PLANNING TO OFFER A PH.D PROGRAM

Specific requirements for a department desiring to implement a Ph.D. program at the Naval Postgraduate School are outlined in section 259 of the Academic Council policy manual. Section 259 is reproduced in Appendix A of this thesis. This section also provides information concerning submission criteria for a department desiring a Ph.D. program.
IV. METHODOLOGY

A. RESEARCH APPROACH

The following information has to be provided on the request for a Ph.D. program:

- Admission to the program
- The Doctoral Committee
- The Qualifying Examination
- The Language and Minor Fields
- Advancement to Candidacy
- Dissertation Research
- The Final Examination
- The Time Limits and Re-examinations
- The Award of the Degree
- Termination of a Candidate's Program

Furthermore, the requesting department has to demonstrate its strength and capabilities to implement a Ph.D. program in accordance with section 259 of the Academic Council Policy Manual cited in chapter III (section F). The following criteria have to be met by the Department of Administrative Sciences in order to offer a Ph.D. program:

- The department should have an active Master's program.
- The department must offer adequate physical facilities (i.e. laboratories, equipment, instruments and libraries) for conducting research.
- The department's faculty must be diverse enough to provide an effective program.
- The department must have a sufficient number of faculty members who hold the doctorate and are currently active in research.
• The department’s faculty must have sufficient experience, here or elsewhere, in serving on doctoral committees or otherwise being involved in supervising doctoral programs.

• The department must offer the Ph.D. candidate sufficient opportunities to interact with other advanced students both in research and coursework.

The primary research effort of this thesis is to gather data from recent enrollment information, graduation statistics, faculty publications, master’s thesis advised, current research topics and teaching experience, physical facilities and support staff available. In addition, this thesis analyzed section 250 of the Academic Council Policy Manual, and used the recently approved proposals for Ph.D. programs from the Department of Mathematics and Computer Science as guidance. [Ref. 5 and Ref. 6]

B. DATA SOURCES

1. Master's Program

Data concerning the Department of Administrative Sciences master's program were gathered from the Naval Postgraduate School's 1990-1991 School Catalog [Ref. 1: p. 27-47] and the curricular offices. The Department of Administrative Sciences master's programs are reproduced in Appendix C as part of the Department's proposal for a Ph.D Program.

2. Faculty

The faculty data were gathered from Naval Postgraduate School listings for publications from FY81 to FY90 [Ref. 8 through Ref. 16] and Master's thesis data from FY81 to FY89 [Ref. 17 through Ref. 25]. Publications data from FY91 and Master's thesis information from FY90 to FY91 were not available from official NPS listings and subsequently had to be compiled from the department of Administrative Sciences' internal records. Since many members of the faculty held positions in other schools prior to accepting a position at NPS,
their information was not complete. Therefore, a questionnaire was distributed to all faculty members requesting information concerning their publications output, Master's theses advised and teaching experience.

3. Student Enrollment

Student graduation data for FY90 and the first two quarters of FY91 were collected from the school's admissions department via their mainframe database. Graduation data from the third quarter of FY91 as well as current enrollment data were collected from the curricular offices for each of the three programs which are offered by the administrative sciences department, (Computer Systems Management, Telecommunications Systems Management and all the Administrative Sciences curricula).

4. Physical Facilities and Support Staff

Physical facilities and Support staff data were collected from Department of Administrative Sciences Departmental Administrative Office.
V. RESULTS AND CONCLUSION

A. RESULTS

As cited in Chapter IV, there are several criteria that must be met by the Department of Administrative Sciences before its Ph.D. program can be approved by the Academic Council. Therefore, the purpose of the research in chapter IV was to determine if those criteria have been met.

1. Active Master's Program

The first criterion is to have an active master's degree program. As demonstrated by the number of students who have graduated and who are currently enrolled, the Department of Administrative Sciences master's program plays a very active role in the professional development of military officers and DoD civilians. The Department of Administrative Sciences offers three academic programs and awards three graduate degrees. The largest program is a group of six curricula in Administrative Sciences. These curricula include Acquisition and Contract Management, Financial Management, Manpower/Personnel/Training Analysis, Material Logistics Support, Systems Inventory Management and Transportation Management. Graduates of these curricula are awarded a Master of Science Degree in Management. The Administrative Sciences curricula are accredited by the National Association of Schools of Public Affairs and Administration. The next largest program is the Computer Systems Management curriculum. Graduates of this curriculum are awarded a Masters of Science Degree in Information Systems. Finally, the last program is the Telecommunications Systems Management curriculum.
Graduates of this curriculum are awarded a Masters of Science Degree in Telecommunications Systems Management. These two curricula however, are being replaced by a new eight quarter curriculum, the Information Technology Management which had its first input on 1 OCT 91.

In the academic year of 1989-90, there were 172 graduates with an MS in Management, 63 graduates with MS in Information Systems and 43 graduates with MS in Telecommunications Systems Management. Through the first three quarters of the academic year 1990-91, there were had 120 graduates with MS in Management, 61 with MS in Information Systems and 17 with MS in Telecommunication Systems Management. Currently, in the Summer of 1991, there were 326 majors enrolled in the Administrative Sciences programs, 174 enrolled in the Computer Systems Management program and 30 enrolled in the Telecommunications Systems Management program.

As previously mentioned, the Administrative Sciences Master's Program is the largest program on campus. It is a six-quarter curriculum and is interdisciplinary in nature. This program consists of two parts: Core course program which integrates mathematics, accounting, economics, behavioral science, management theory, operations/systems analysis and a subspecialty concentration into an understanding of the process by which the defense mission is accomplished. The subspecialty options and their core course requirements are listed in Appendix C of this thesis.

2. Physical Facilities

The second criterion is adequate physical facilities. The Department of Administrative Sciences and NPS provide several computing resources to support research by Ph.D. candidates. These resources include:
the NPS mainframe computer.
- three micro-computer laboratories with local area networks dedicated to the Department of Administrative Science for instructional and research purposes.
- links to other data centers and computers through several networks such as DDN, INTERNET, BITNET and the MILNET.
- specialized software to conduct research and development of expert systems, decision support systems, statistical analysis and database management systems.
- the faculty also has a number of computing resources directly related to their research.

In addition to the above computing resources, the Dudley Knox Library with its approximately one million bibliographical volumes (books, research reports and journals, in hard copy and microform, its sophisticated online information resources, and its access to a vast interlibrary loan system will provide strong support for Ph.D. candidates in Administrative Sciences as it has in the past for other doctoral candidates. The current selection of books and journals already on campus will provide the Ph.D. candidate with ample material to support research in all areas of Administrative Sciences. The Department of Administrative Sciences will work in cooperation with the Main Library to ensure continued acquisition of vital research material to maintain suitability for the Administrative Sciences Ph.D. program. [Ref. 26]
3. Faculty

The third criterion requires the department to demonstrate its diversity, experience with Ph.D. programs and that its faculty is currently active in research. The Department of Administrative Sciences is the largest academic department on campus, both in terms of faculty and students. The department has fourteen full professors, twenty associate professors, nineteen assistant professors, seventeen adjunct professors, nine military instructors, and nine support staff members. In addition, the department has been very successful over the last five years in attracting a number of distinguished scholars to fill the Grace Murray Hopper Chair in Computer Science.

The department's faculty has long been recognized for its dedication to outstanding teaching and research in areas vitally important to the U.S. Navy and the Department of Defense. The department leads the school in attracting reimbursable research funding.

The department has an active research relationship with other universities and research institutes, for instance, MIT, Carnegie-Mellon University, New York University, the University of Pennsylvania, the University of Michigan and AT&T Bell Labs. Many of our faculty have co-authored papers and books with faculty members and researchers at these institutions.

The complete summary of quantitative data collected on departmental faculty is shown in Table 5-1. The first three columns deal with faculty publication information. These include books written or co-written by a specific faculty member, the total number of book chapters, proceedings and journal articles written or co-written by a specific faculty member and the number of technical reports produced or co-produced by a faculty member. The last three columns indicate years taught, Master's theses advised and participation in Ph.D. work. As shown in Table 5-1, the faculty professional productivity and contributions are significant. Additionally, a close examination of the information in appendices B coupled with the information in Table 1 indicates current faculty research is strongly oriented in areas of vital concerns to the U.S. Navy and DoD. These areas include information and telecommunication systems, integrated logistic and transportation, acquisitions, financial management, manpower, and management policies and decision making.

4. Opportunity

The final criterion is opportunity for the Ph.D. candidate to interact with other advanced students in course work and research. As cited above, the Department of Administrative is very active in research. Currently most of this research is conducted by the faculty with assistance from master's students. As stated in chapter II, the purpose of an advanced education in Administrative
Sciences is to educate scientists who will advance the state of knowledge in their respective field. There will be a strong emphasis for the doctoral student to become immediately involved in research activities. Secondly, the program will be small compared to other institutions. The smaller size will allow tailoring of the student's program to promote better interaction with other students and to promote a better climate to conduct research. Required courses will provide ample opportunity to interact with advanced master's students and other Ph.D. students.
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B. CONCLUSION

The strength of the information received indicates a strong overall program which can support the school's mission to the U.S. Navy and the Department of Defense. The information suggests that the department of Administrative Sciences meets all the criteria set forth by the Academic Council in Section 259 of their policy manual for development and maintenance of an effective Ph.D. program. Appendix B through Appendix D of this thesis contains the final draft of the Department of Administrative Sciences Request for a Ph.D. program.
APPENDIX A
EXTRACTS FROM THE ACADEMIC COUNCIL
POLICY MANUAL

A. REQUIREMENTS AND PROCEDURES FOR THE DEGREE:
DOCTOR OF PHILOSOPHY
(Reproduced from Section 250, Academic Council Policy Manual)

1. The degree Doctor of Philosophy is awarded as a result of very meritorious
and scholarly achievements in a particular field of study which has been
approved by the Academic Council as within the purview of the Naval
Postgraduate School. A candidate must exhibit faithful and scholarly application
to all prescribed courses of study, achieve a high level of scientific advancement,
and establish an ability for original investigation leading to the advancement of
fundamental knowledge.

2. Any program leading to the degree Doctor of Philosophy shall require the
equivalent of at least three academic years of study beyond the baccalaureate
level, with at least one academic year being at the Naval Postgraduate School.
The following is a general outline of a candidate's progress through the
program, with amplification in subsequent paragraphs:

a. The student applies to the appropriate department chairman for
admission to the program and is accepted (para. 3).

b. The department chairman appoints the student's Doctoral
Committee, which bears the responsibility for the study program
and for general guidance in the research program (para. 4).

c. When the student's study program is essentially complete the
Doctoral Committee administers the Qualifying Examination,
which must include both written and oral parts (para. 5).

d. The study program must include one or more minors, and may
include a foreign language translation requirement at the discretion
of the major department.
e. When the student's study program is essentially complete, research commences under an approved Dissertation Supervisor on a subject approved by the Doctoral Committee. At about this same time, the Doctoral Committee requests that the student be admitted to candidacy for the degree (para. 7 and 8).

f. When the candidate investigations are completed and the dissertation has been submitted, the Doctoral Committee administers a final oral examination on the dissertation. (para. 9).

g. After the unanimous recommendation of the Doctoral Committee, the Academic Council makes the final decision to recommend the candidate for the award of the degree (para. 10).

3. Admission to the program:

A student seeking to become a candidate for the Doctorate shall hold a Bachelor's degree based on a curriculum that included the prerequisites for full graduate status in the department of his/her major study, or shall have pursued successfully an equivalent course of study. The student shall submit his/her proposed major subject for determination of acceptability as a Doctoral student.

The method of screening applicants shall be the responsibility of the department, but it will usually involve a written or oral screening examination. No applicant shall take such an examination more than twice.

4. The Doctoral Committee:

The Doctoral Committee will be nominated by the Department Chairman and approved by the Academic Council. The Committee will consist of five or more members from at least three departments. One member of this Committee may be from another university or appropriate institution. At least four members will have earned the doctorate and the Committee may contain no more than two members who have not earned the doctorate. At the time that the above Committee is submitted for approval, or at a subsequent time no later than when the student is advanced to candidacy for the doctorate, the major Department Chairman shall designate, for the approval of the Academic Council, the member of the Doctoral Committee who shall serve as Dissertation
Supervisor. To avoid last minute problems every effort should be made to designate the Dissertation Supervisor early. If the Dissertation Supervisor is designated at a later time, the membership of the Doctoral Committee shall be augmented to include him/her if he is not already a member of the Committee. The major Department shall certify that the Dissertation Supervisor has been selected in accordance with Section 255 of this Policy Manual.

The Doctoral Committee has responsibility for the program of study, which shall include one or more minor fields, suitable to the needs of the student and the requirements for award of the Doctorate. The Doctoral Committee will keep the cognizant Curricular Officer and Department Chairman advised concerning the program of study and the progress of the candidate. In agreeing to serve on a Doctoral Committee each faculty member, and particularly the Dissertation Supervisor, thereby assumes a professional and ethical responsibility to see the candidate through the termination of his/her program.

5. The Qualifying Examination:

After the student's program of study in the major and minor fields has been essentially completed, the student shall be given by his Doctoral Committee, a comprehensive Qualifying Examination over the student's program of study which shall include both written and oral parts. The written part may be administered by the major department or group in conjunction with the Doctoral Committee. The oral part shall be scheduled only after successful passage of the written part and successful passage of all the requirements for the minor field. The oral examination will be administered by the entire Doctoral Committee. The Academic Council will be invited. The results of the entire examination will be reported to the Dean of Academic Administration not later than two weeks after the scheduled date of the oral exam.

Passage of the Qualifying Examination will require a unanimous vote of the Doctoral Committee. No student may take the Qualifying Examination more than twice (para. 10). The result of the examination, whether pass or fail, shall be reported to the cognizant Curricular Officer and to the Academic Council. Each member of the Doctoral Committee shall sign the report.
6. The Language and Minor Fields:

If a language requirement is to be satisfied, the student will demonstrate proficiency before an examiner appointed by the Department Chairman.

The program of study shall include one or more minor fields, as specified by the doctoral Committee, suitable to the needs of the student and to the research to be undertaken. The minor requirement will be satisfied by procedures specified by the department of the minor; these may include written or oral examination, completion of sequence of courses, etc. A written statement of minor field shall be filed by each department with the Academic Council.

7. Advancement to Candidacy:

Upon successful completion of the language examination, if required, and the comprehensive examination, the student becomes eligible for advancement to candidacy. The Doctoral Committee, when submitting its written report, shall recommend that the Academic Council advance the student to candidacy for the doctorate. Affirmative action by the Academic Council on advancing the student to candidacy will require:

a. An approved Doctoral Committee (para. 4).

b. An approved Dissertation Supervisor (para. 4).

c. Completion of language and minor requirements (para. 6).

d. Successful completion of the comprehensive examinations (para. 5).

e. An approved dissertation subject (para. 8).

8. The Dissertation Research:

The distinct requirement of the Doctorate is the successful completion of a scholarly investigation leading to an original and significant contribution to knowledge in the candidate's major area of study. The subject of the investigation must be approved by the Doctoral Committee, who will report the approved subject to the Academic Council. This report must be made no later than the time of request for advancement to candidacy. In any event, the candidate must devote at least six months to research, following the date of advancement to candidacy, before presenting himself for final examination.

9. The Final Examination:
When the dissertation research has been completed and a draft has been prepared to the satisfaction of the Dissertation Supervisor, a copy shall be submitted to each member of the Doctoral Committee for approval. Approval by the committee members shall signify the Committee's acceptance of the draft as a basis for the final defense-of-dissertation examination. After obtaining unanimous acceptance of the draft from the Doctoral Committee, the Chairman shall schedule an oral final examination.

This examination should not be scheduled earlier than one week following the submission of the draft of the dissertation to the Doctoral Committee. The examination will be administered by the entire Doctoral Committee. The examination will be reported to the Dean of Academic Administration not later than two weeks after the scheduled date of the exam.

In the final examination, the candidate will present his dissertation and shall be subject to such questions as the Doctoral Committee and the Academic Council may deem appropriate. Passage of the examination requires a unanimous vote of the Doctoral Committee.

The results of the final examination (whether pass or fail) shall be reported to the Academic Council, the report bearing the signatures of all the members of the Committee. If the candidate is passed, this report shall also include:

a. Certification of acceptance of the dissertation.

b. Nomination of the successful candidate for the award of the degree, Doctor of Philosophy.

Upon final acceptance of the dissertation, the title page shall be signed by each member of the Committee, the major Department Chairman, and the Academic Dean. Signatures of the Dissertation Supervisor, and the Department Chairman, and the Academic Dean indicate approval of the dissertation.
10. Time Limits and Re-examinations:

If a candidate, on first attempt, fails either the comprehensive or the final examination, he/she may be re-examined in each examination only once, and then only if his/her Committee so recommends. The qualifying examination consists of two parts, and the candidate may attempt each part twice. The Committee may recommend that only prescribed parts of the examination be repeated. If the privilege of reexamination is granted, the time period within which it must be accomplished shall be specified by the Committee, but it shall not exceed 13 months.

All requirements for completing the degree must be completed within a period of five years after advancement to candidacy.

11. The Award of the Degree

After receiving the report of the Doctoral Committee, the Academic Council will make the final decision whether or not to recommend the candidate to the Superintendent of the Naval Postgraduate School for the award of the Doctor of Philosophy degree.

No candidate shall participate in the graduation ceremony for the award of the degree until his/her dissertation has received the signature of the Academic Dean. In addition, the oral examination must be signed by the entire Committee before the last Council meeting of the quarter. The final version of the dissertation will be submitted to the Dean of Academic Administration before graduation.

12. Termination of a Candidate's Program

If, in the judgement of his Doctoral Committee, a student does not qualify for the degree, Doctor of Philosophy, the Committee shall recommend that the Doctoral program be terminated, and shall suggest an appropriate course of action for the student. When the Academic Council has satisfied itself concerning all outstanding questions involved and has agreed upon any necessary action, the student's Doctoral Committee will be dissolved by a formal vote.
13. Attendance at Doctoral Oral Examinations:

Attendance at doctoral oral examinations shall be as delineated in the table below:

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<td>Other Academic Council Members</td>
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<td>A, B</td>
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<td>Other Faculty</td>
<td>A, B</td>
<td>A, B</td>
</tr>
<tr>
<td>Student Would-Be Candidate</td>
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<td>A</td>
</tr>
<tr>
<td>Others (Staff, Students, Visitors)</td>
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</table>

Legend:  
A - Interrogation Phase  
B - Comment Phase  
C - Voting Phase
Departments Authorized To Award This Degree

Aeronautics

Computer Science

Electrical and Computer Engineering

Electrical Engineering/ Physics
  (Engineering Acoustics)

Mathematics

Mechanical Engineering

Meteorology

Oceanography

Operations Research

Physics
B. GUIDELINES FOR THE SELECTION OF DISSERTATION SUPERVISORS
(Reproduce for Section 255, Academic Council Policy Manual)

1. The Academic Council will normally expect the chairman of the proposed Doctoral Committee to serve as dissertation supervisor unless information to the contrary is supplied. The following qualifications are desirable for any proposed dissertation supervisor:

   a. The doctorate in his/her field of specialty.

   b. Prior personal experience on Doctoral Committees.

   c. Experience in advising thesis students.

   d. Activity and productivity in research in his/her field as evidenced by recent publication of his/her research in recognized journals, or a broad reputation as a productive researcher in his/her field of specialty. Other evidence may be considered which is pertinent to demonstrating research activity or productivity.

2. In exceptional cases, where the above qualifications are not obviously met, strong departmental justification must be provided.
C. DOCTORAL DISSERTATIONS
(Reproduced from Section 256, Academic Council Policy Manual)

The acceptance of a candidate's dissertation, presented as partial fulfillment of the requirements for the Doctor's Degree from the Naval Postgraduate School, will not be jeopardized by the prior publication by the candidate as author or joint author of papers presenting material which later may become a significant part of the body of the dissertation or by the delivery of such papers at engineering or scientific meetings provided that the student himself or herself successfully completes an original, significant and scholarly investigation in his/her major area of study.
D. STANDARDS FOR DEPARTMENTS PLANNING TO OFFER A PH.D. PROGRAM
(Reproduced from Section 259, Academic Council Policy Manual)

1. The following criteria will be applied to a department at the Naval Postgraduate School wishing to offer a Ph.D. program:

a. The department should have an active master's degree program.

b. There should be adequate physical facilities (such as laboratories, equipment and instruments) for research in the scientific or engineering fields and there should be adequate library facilities in the field and subfield where it is proposed to award the degree.

c. The faculty of the department must be diverse enough to give such a program properly. A reasonable number of the faculty should hold the doctorate and be currently active in research as evidenced by publications in the open literature. The department should have two or more qualified faculty members in each subfield where it is proposed to award the doctorate. The departments should contain faculty members who have had experience, here or elsewhere, in serving on doctoral committees or otherwise getting involved in supervising doctoral programs.

d. There should be adequate opportunities for the Ph.D. candidate to interact with other advanced students in the department both in course work and in research, i.e., the program should not be merely an interaction between the student and a few faculty members. As most departments will have one or two Ph.D. candidates at any on time, this interaction will mainly be with students active in master's programs.

2. A department wishing to offer a Ph.D. program should submit a document to the Academic Council giving evidence that the above criteria have been met. Furthermore, the department should specify exactly those subfields in the general discipline where it plans to award the degree, and it should supply a list of departmental faculty members who are qualified to serve on Doctoral Committee for each subfield. The purpose of this list is to demonstrate the breadth of support for the proposed program. The Academic Council approves each Doctoral Committee separately; guidelines for the selection of dissertation supervisors are presented in Section 255.
3. Interdepartmental doctorates are feasible and in some cases desirable. This might make it possible for a department to participate in a doctoral program where the department itself does not meet one or more of the above criteria. Two or more departments who wish to offer a joint doctoral program should follow the procedures indicated in paragraph 2.
APPENDIX B
REQUEST TO THE ACADEMIC COUNCIL FOR APPROVAL
OF A PH.D. PROGRAM IN ADMINISTRATIVE SCIENCES

Department of Administrative Sciences

February 21, 1992
I. Introduction

II. Role of the Ph.D. Program in Administrative Sciences

III. An Active Masters Degree Program in Administrative Sciences

IV. The Faculty of the Department of Administrative Sciences

V. Requirements and Procedures for Doctoral Study

Appendix A. Proposed Fields of Study

Appendix B. Introduction to the Department of Administrative Sciences
I. INTRODUCTION

In accordance with Academic Council Policy Manual, Section 259, the Department of Administrative Sciences requests approval to develop and implement a Ph.D. program in Management Information Systems, Organization and Management and Logistics at the Naval Postgraduate School.

A Ph.D. program in Administrative Sciences will provide an outstanding opportunity for the Navy and DoD to achieve its goal of maintaining its commitment to an operationally focused officer corps while increasing its pool of intellectual resources at the Ph.D. level in critical areas of advancing knowledge and technology. This is especially timely as the DoD attempts to trim down its force structure while still maintaining its overall effectiveness and ability to advance in knowledge and technology. This program will allow DoD to offset the growing deficit in human resources educated in areas with acute shortages in Ph.D.'s, nor will DoD be able to exploit new technologies to aid its next generation of managers.

Appendix B contains an introduction to the faculty of the Department of Administrative Sciences which primarily focuses on the recent contributions of the faculty to the field of Administrative Sciences. A more detailed summary of specific areas is contained in Appendix A of this proposal.

The Department of Administrative Sciences and NPS provide several computing resources to support research by Ph.D. candidates. These resources include:

- the NPS mainframe computer;
- three micro-computer laboratories with local area networks dedicated to the Department of Administrative Science for instructional and research purposes;
- links to other data centers and computers through several networks such as DDN INTERNET, BITNET and the MILNET;
- specialized software to conduct research and development of expert systems, decision support systems, statistical analysis and database management systems;
In addition to the above computing resources, the NPS Main Library with its vast inter-library loan system currently available to NPS students and faculty will provide outstanding support for Ph.D. candidates in Administrative Sciences. In addition to the Main Library, the Computer Center provides an excellent technical library. The current selection of books and journals already on campus will provide the Ph.D. candidate with ample material to support research in all areas of Administrative Sciences. The Department of Administrative Sciences will work in cooperation with the Main Library to ensure continued acquisition of vital research material to maintain suitability for the Administrative Sciences Ph.D. program.
II. ROLE OF THE PH. D. PROGRAM IN ADMINISTRATIVE SCIENCES

The purpose of the Ph.D. program in Administrative Sciences is to serve the advanced educational needs of the Navy and to support the broad requirements of the NPS Mission:

"To conduct and direct the advanced education of commissioned officers, and to provide such other technical and professional instruction as may be prescribed to meet the needs of the Naval Service, and in support of the foregoing, to foster and encourage a program of research in order to sustain academic excellence".

The Ph.D. program in Administrative Sciences will also support the expanded mission of NPS as set forth by the Secretary of Navy:

"The Naval Postgraduate School exists for the sole purpose of increasing the combat effectiveness of the Navy and Marine Corps. It accomplishes this by providing post-baccalaureate degree programs in a variety of subspecialty areas not available through other educational institutions. NPS also supports the Department of Navy through the continuing programs of high-level naval and maritime research and through maintenance of operational commands, laboratories, systems commands and headquarters activities of the Navy and Marine Corps".

The Ph.D. Program in Administrative Sciences supports the NPS mission through several key educational and research elements:

- Provide military officers and selected Department of Defense (DoD) civilians with the best educational resources to pursue the highest levels of knowledge in the Administrative Sciences. The purpose of a Ph.D. program in Administrative Sciences is to educate the future leaders and managers of human and financial resources in the Navy and DoD who will advance the state of knowledge in their specific fields.

- Enhance significant research in all areas of Administrative Sciences. Due to the rapid developments in technology coupled with the explosive growth in the science of management and decision making, it is crucial to increase research in specific areas important to DoD. A Ph.D. program seeks to develop individuals who will make major contributions in the creation and dissemination of new research in areas vital to the Navy and DoD. The skills and knowledge base of its officers in a Ph.D. program will provide significant research as part of the process toward fulfillment of a Ph.D. program.

- Provide the opportunity for administrative sciences researchers to
interact with other universities, DoD agencies, industries and laboratories who are working on the leading edge of new ideas and technologies concerning management issues and information systems development.

- Support the quality of advanced course offerings at NPS. The advanced research supported by a Ph.D. program will greatly enhance the development and implementation of advanced courses. In the end, the quality of both research and teaching improves.

- Serve the Navy and DoD by providing future management and information science professionals to teach undergraduates at other service academies and ROTC units or to conduct research for the Navy and DoD.
III. AN ACTIVE MASTER'S DEGREE PROGRAM

The Department of Administrative Sciences offers three academic programs and awards three graduate degrees. The largest program is a group of six curricula in Administrative Sciences. These curricula include Acquisition and Contract Management, Financial Management, Manpower/Personnel/Training Analysis, Material Logistics Support, Systems Inventory Management and Transportation Management. Graduates of these curricula are awarded a Master of Science Degree in Management. The Administrative Science curricula are accredited by the National Association of Schools of Public Affairs and Administration. The next largest program is the Computer Systems Management curriculum. Graduates of this curriculum are awarded a Masters of Science Degree in Information Systems. Finally, the last program is the Telecommunications Systems Management curriculum. Graduates of this curriculum are awarded a Masters of Science Degree in Telecommunications Systems Management.

In the academic year of 1989-90, the department graduated 172 graduates with an MS in Management, 63 graduates with MS in Information Systems and 43 graduates with MS in Telecommunications Systems Management. Through the first three quarters of the academic year 1990-91, we have had 120 graduates with MS in Management, 61 with MS in Information Systems and 17 with MS in Telecommunication Systems Management. In the Summer of 1991, we had 326 majors enrolled in the Administrative Sciences programs, 174 enrolled in the Computer Systems Management program and 30 enrolled in the Telecommunications Systems Management.

As previously mentioned, the Administrative Sciences Master's Program is the largest program at NPS. It is a six-quarter curriculum and is interdisciplinary in nature. This program consists of two parts: A core course program which integrates mathematics, accounting, economics, behavioral science, management theory, operations/systems analysis and a subspecialty concentration. The subspecialty options are in the next section.

All students are required to successfully complete or validate a total of 32 quarter hours of 2000 and 3000 level courses in the Administrative Sciences core program. In addition, this program must include a minimum of the following:

- Accounting and financial management: 6 hours
- Economics: 6 hours
- Organization and management: 6 hours
- Quantitative methods: 8 hours
A. Administrative Sciences Master's Degree Program
(Extracted from Naval Postgraduate School Catalog 1991)

Each student's curriculum in the Administrative Sciences Program must include the successful completion of 48 quarter hours of graduate level course work and an acceptable thesis or project. At least 12 quarter hours of the course work must be at the 4000 level. Each student's program must be approved by Chairman of the Department of Administrative Sciences.

Transportation Logistics Management

This curriculum is intended to provide the officer with a Navy/DoD systems oriented graduate management education and to provide the officer with the specific functional skills required to effectively manage in this subspecialty area. The curriculum is sponsored by Naval Supply Systems Command Headquarters.

Typical Course of Study

**Quarter 1**
- MN2150 (4-0) Financial Accounting
- MN2031 (4-0) Economic Decision Making
- MN3333 (4-0) Managerial Communication Skills
- MA2300 (5-0) Mathematics for Management
- IS0123 (0-2) Computer Skills Development

**Quarter 2**
- MN3161 (4-0) Managerial Accounting
- MN3140 (4-0) Microeconomic Theory
- MN3373 (4-0) Transportation Management
- OS3101 (4-1) Statistical Analysis for Management

**Quarter 3**
- MN3105 (4-0) Organization and Management
- MN3172 (4-0) Public Policy Processes
- MN4373 (4-0) International Transportation Management
- OS3006 (4-0) Operations Research for Management

**Quarter 4**
- IS3183 (4-0) Management Information Systems
- MN4145 (4-0) Policy Analysis
- MN4376 (4-0) Defense Transportation System
- NS3252 (4-0) Joint and Maritime Strategic Planning
Quarter 5
MN0810  (0-0) Thesis Research
MN0810  (0-0) Thesis Research
MN3377  (4-0) Inventory Management
MN3301  (4-0) Systems Acquisition and Project Management

Quarter 6
MN0810  (0-0) Thesis Research
MN4105  (4-0) Management Policy
MN3371  (4-0) Contracts Management and Administration
MN4154  (4-0) Financial Management in the Armed Forces

Transportation Management

The objective of this curriculum are to prepare officers for logistics system positions within the Navy and to emphasize the worldwide transportation aspects of it. Graduate logistics courses cover topics such as the transportation system within Continental United States (CONUS), warehouse siting, materials management, production management, inventory management (both Navy and private sector), materials handling, purchasing and physical distribution. Students take additional courses in transportation in the private sector and military transportation in support of contingencies, as well as options in corporate financial management, production management or logistics engineering. This curriculum is sponsored by Military Sealift Command Headquarters.

Typical Course of Study

Quarter 1
MN2150  (4-0) Financial Accounting
MN2031  (4-0) Economic Decision Making
MN3333  (4-0) Managerial Communication Skills
MA2300  (5-0) Mathematics for Management
IS0123  (0-2) Computer Skills Development

Quarter 2
MN3161  (4-0) Managerial Accounting
MN3140  (4-0) Microeconomic Theory
MN3373  (4-0) Transportation Management
OS3101  (4-1) Statistical Analysis for Management
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Acquisition and Contract Management

This curriculum is designed to provide officers with the skills to serve effectively in hardware systems procurement offices, field procurement offices, contract administration offices and contracting policy support offices. This curriculum is sponsored by Naval Supply Systems Command Headquarters.

Typical Course of Study

Quarter 1
MN2150 (4-0) Financial Accounting
MN2031 (4-0) Economic Decision Making
MN3333 (4-0) Managerial Communication Skills
MA2300 (5-0) Mathematics for Management
MN2302 (0-2) Contract Management Seminar
IS0123 (0-2) Computer Skills Development

Quarter 2
MN3303 (4-0) Principles of Acquisition and Contracting
MN3140 (4-0) Microeconomic Theory
MN3161 (4-0) Managerial Accounting
OS3101 (4-1) Statistical Analysis for Management
MN2302 (0-2) Contract Management Seminar

Quarter 3
MN3312 (3-0) Contract Law
MN3172 (4-0) Public Policy Processes
MN3105 (4-0) Organization and Management
MN3304 (5-2) Contract Pricing and Negotiations
MN2302 (0-2) Contract Management Seminar

Quarter 4
MN3305 (3-0) Contract Administration
MN4145 (4-0) Policy Analysis
IS3183 (4-0) Management Information Systems
NS3252 (4-0) Joint and Maritime Strategic Planning
MN2302 (0-2) Contract Management Seminar

Quarter 5
MN4301 (4-0) Contracting for Major Systems
MN0810 (0-0) Thesis Research
MN0810 (0-0) Thesis Research
OS3006 (4-0) Operations Research for Management
MN2302 (0-2) Contract Management Seminar
Quarter 6
MN4371 (4-0) Acquisition and Contracting Policy
MN4105 (4-0) Management Policy
MN0810 (0-0) Thesis Research
     Curriculum Option
MN2302 (0-2) Contract Management Seminar

Allied Officers, DOD Civilians, USA, USMC and USCG

This is a highly flexible curriculum designed to provide the officers with fundamental interdisciplinary techniques of quantitative problem solving methods, behavioral and management science, economic analysis and financial management. The curriculum further provides the officers with the specific functional skills required to become effective managers. Specialty concentration areas are specified by ordering officers into a specific curriculum.

Typical Course of Study (For Army)

Quarter 1
MN2150 (4-0) Financial Accounting
MN2031 (4-0) Economic Decision Making
MN3333 (4-0) Managerial Communication Skills
MA2300 (5-0) Mathematics for Management
IS0123 (0-2) Computer Skills Development

Quarter 2
MN3161 (4-0) Managerial Accounting
MN3140 (4-0) Microeconomic Theory
OA2200 (3-2) Computational Methods for Research
OS3101 (4-1) Statistical Analysis for Management
MN3920 (0-2) MPT Computer Skills

Quarter 3
MN3172 (4-0) Public Policy Processes
OS3006 (4-0) Operations Research for Management
MN4110 (4-0) Multivariate Analysis

Quarter 4
MN4145 (4-0) Policy Analysis
MN3105 (4-0) Organization and Management
IS3183 (4-0) Management Information Systems
Quarter 5
MN0810 (0-0) Thesis Research
MN0810 (0-0) Thesis Research Curriculum Option
NS3252 (4-0) Joint and Maritime Strategic Planning

Quarter 6
MN0810 (0-0) Thesis Research
MN4105 (4-0) Management Policy
2 Curriculum Options

Note: Typical Courses of Study vary depending on the Officer's Branch of Service (i.e., Army, Coast Guard, Marine Corps, International Officer, DoD Civilian).

While Allied officers may freely choose any of the specific management curricula available, a more general Administrative Sciences International curriculum allows allied officers to design a program of course work that is specifically useful in their own country's military system.
Systems Inventory Management

This curriculum emphasizes the management of Navy owned inventories at all levels. Students take courses in general inventory model development and the specific details of the Navy's inventory models, spanning the three levels of wholesale, intermediate and retail customer support. The curriculum emphasizes responsibilities for developing procedures for establishing, maintaining and controlling inventories of material, distributing that material to the Navy customer and developing the budgets for financing these inventories. The curriculum is sponsored by Naval Supply Systems Command Headquarters.

Typical Course of Study

**Quarter 1**
- MN2150 (4-0) Financial Accounting
- MN2031 (4-0) Economic Decision Making
- MN3333 (4-0) Managerial Communication Skills
- MA2300 (5-0) Mathematics for Management
- IS0123 (0-2) Computer Skills Development

**Quarter 2**
- MN3161 (4-0) Managerial Accounting
- MN3140 (4-0) Microeconomic Theory
- MN3105 (4-0) Organization and Management
- OS3104 (4-1) Statistical for Science and Engineering

**Quarter 3**
- MN3161 (4-0) Inventory 1
- MN3172 (4-0) Public Policy Processes
- MN3372 (4-0) Material Logistics
- OS3006 (4-0) Operations Research for Management

**Quarter 4**
- OS4501 (4-0) Seminar in Supply Systems
- MN4145 (4-0) Policy Analysis
- MN4510 (4-0) Logistics Engineering
- IS3183 (4-0) Management Information Systems

**Quarter 5**
- MN0810 (0-0) Thesis Research
- MN0810 (0-0) Thesis Research
- NS3252 (4-0) Joint and Maritime Strategic Planning
- MN3301 (4-0) Systems Acquisition and Project Management

48
Quarter 6
MN0810 (0-0) Thesis Research
MN4105 (4-0) Management Policy
MN4154 (4-0) Financial Management in the Armed Forces
MN3371 (4-0) Contracts Management and Administration

Material Logistics Support Management

This curriculum emphasizes all of the aspects for providing integrated logistics support of weapons systems. Besides a study of the core disciplines, the curriculum delves into production management, inventory management, integrated logistic support, procurement and contract administration, systems acquisition and project management. Skills resulting from the curriculum will prepare those responsible for managing the various segments of a military system's life cycle from initial planning to fielding the system, through sustaining operations to phaseout. This curriculum is sponsored by Naval Air Systems Command Headquarters.

Typical Course of Study

Quarter 1
MN2150 (4-0) Financial Accounting
MN2031 (4-0) Economic Decision Making
MN3333 (4-0) Managerial Communication Skills
MA2300 (5-0) Mathematics for Management
IS0123 (0-2) Computer Skills Development

Quarter 2
MN3161 (4-0) Managerial Accounting
MN3140 (4-0) Microeconomic Theory
MN3105 (4-0) Organization and Management
OS3104 (4-1) Statistical for Science and Engineering or OS3101

Quarter 3
MN3372 (4-0) Material Logistics
MN3172 (4-0) Public Policy Processes
MN3301 (4-0) Systems Acquisition and Project Management
OS3006 (4-0) Operations Research for Management

Quarter 4
MN3371 (4-0) Contracts Management and Administration
MN4145 (4-0) Policy Analysis
MN4310 (4-0) Logistics Engineering
IS3183 (4-0) Management Information Systems
Financial Management

The objectives of this curriculum is to prepare officers for business and financial positions within the Navy. Financial Managers assist the Navy's decision-making processes at all levels by providing accurate, timely and relevant information. They are concerned with the optimal allocation of human, physical and financial resources to achieve the Navy's goals and objectives while assuring efficient and effective expenditure of public funds.

Students cover topics such as financial reporting standards, cost standards, cost analysis, budgeting, internal control, financial auditing, operational auditing, management planning and control systems, quantitative techniques used in planning and control, and the Planning Program and Budgeting System used within the DoD.

Graduates of this curriculum will be prepared for assignment to positions in budgeting, accounting, business and financial management, and Internal Control and Auditing. This curriculum is sponsored by OP-92, Fiscal Management Division.

Typical Course of Study

Quarter 1
- MN2150 (4-0) Financial Accounting
- MN2031 (4-0) Economic Decision Making
- MN3333 (4-0) Managerial Communication Skills
- MA2300 (5-0) Mathematics for Management
- IS0123 (0-2) Computer Skills Development

Quarter 2
- MN3161 (4-0) Managerial Accounting
- MN3140 (4-0) Microeconomic Theory
- MN3105 (4-0) Organization and Management
- OS3101 (4-1) Statistical Analysis for Management
Quarter 3
MN4161 (4-0) Financial Management Control Systems
MN3172 (4-0) Public Policy Processes
MN4162 (4-0) Cost Accounting
OS3006 (4-0) Operations Research for Management

Quarter 4
MN4154 (4-0) Financial Management in the Armed Forces
MN4145 (4-0) Policy Analysis
MN4151 (4-0) Internal Control and Auditing
IS3183 (4-0) Management Information Systems

Quarter 5
MN0810 (0-0) Thesis Research
MN0810 (0-0) Thesis Research
MN3374 (4-0) Production Management
Curriculum Option

Quarter 6
MN3301 (4-0) Systems Acquisition and Project Management
MN0810 (0-0) Thesis Research
MN4105 (4-0) Management Policy
NS3252 (4-0) Joint and Maritime Strategic Planning
Manpower/Personnel Training Analysis

Officers enrolled in the MPTA curriculum at NPS undertake the challenge of an academic program designed to fill the leadership roles in military manpower management. This specialty has primary responsibility for developing and analyzing policies to ensure that the Navy is recruiting, training, utilizing and retaining personnel in the most efficient and effective ways possible. MPTA is an extremely analytical curriculum intended to develop skills necessary to perform and evaluate manpower analyses. As such, the curriculum emphasizes mathematical, statistical and other quantitative methods.

The areas covered in the MPTA curriculum include an understanding of MPT policy development, compensation systems, productivity analysis, enlistment supply and retention models, manpower training models, manpower requirements determination processes, career mix, enlistment incentives, training effectiveness measures and hardware/manpower trade-offs. Students gain familiarity with current models and methods of MPT analysis as well as military MPT organizations and issues. This curriculum is sponsored by OP-11, Total Force Training and Education Division.

Typical Course of Study

Quarter 1
- MN2150 (4-0) Financial Accounting
- MN2031 (4-0) Economic Decision Making
- MN3333 (4-0) Managerial Communication Skills
- MA2300 (5-0) Mathematics for Management
- MN2111 (0-2) Seminar in MPTA Issues
- IS0123 (0-2) Computer Skills Development

Quarter 2
- MN3161 (4-0) Managerial Accounting
- MN3140 (4-0) Microeconomic Theory
- MN3105 (4-0) Organization and Management
- OS3101 (4-1) Statistical Analysis for Management
- MN2112 (0-2) Seminar in MPTA Issues
- MN3902 (0-2) Computer Skills Enhancement

Quarter 3
- MN3761 (4-0) Manpower Economics
- MN3111 (4-0) Personnel Processes
- MN4162 (4-0) Cost Accounting
- OS3006 (4-0) Operations Research for Management
- MN4110 (5-2) Multivariate Manpower Data Analysis I
- MN2113 (0-2) Seminar in MPTA Issues
Quarter 4

MN4761 (4-0) Applied Manpower Analysis
MN4500 (4-0) Productivity Analysis
OS4701 (4-0) Manpower and Personnel Models
MN4111 (5-2) Multivariate Manpower Data Analysis 2

Quarter 5

MN0810 (0-0) Thesis Research
Curriculum Option
MN4106 (4-0) Manpower Policy Analysis
NS3252 (4-0) Joint and Maritime Strategic Planning

Quarter 6

MN0810 (0-0) Thesis Research
MN3172 (4-0) Public Policy Processes
IS3183 (4-0) Management Information Systems
MN4105 (4-0) Management Policy
MN4904 (0-2) Advanced MPTA Research Applications
B. Information Systems Master's Degree Program
(Extracted from Naval Postgraduate School Catalog 1991)

The next largest program, Information Systems Master's Program, is also a six-quarter curriculum and is interdisciplinary in nature. This curriculum is sponsored by (OP-945) Director, Information Systems Division and consists of two parts: A core program required of all students and a subspecialty option which is selected by the student from one of four approved options. While the core areas delineate the subdisciplines of Information Systems, the options accentuate the subspecialties. Thus, the courses which make up an option tend to cut across several core areas such as computer science, information systems, and management. At least three courses are required to make up an option. Unlike the subspecialty options of the Administrative Sciences program, these options are introductory in nature and only giving the student some emphasis in these areas. These options are:

- Decision Support Systems
- Tactical Systems
- Information Resource Management
- Computer Networks

Students in this program must successfully complete or validate core courses in each of the following disciplines:

- Accounting and financial management
- Organization sciences
- Information Systems
- Computer Science
- Economics
- Management theory and practice
- Quantitative methods

Each student's curricula must include the successful completion of 48 quarter hours of graduate level course work and an acceptable thesis or project. At least 12 quarter hours of the course work must be at the 4000 level. Further, this graduate-level course work must include at least 24 quarter hours in Administrative Sciences and at least 16 quarter hours in Computer Science. Each student's program must be approved by the Chairman of the Department of Administrative Sciences.
Computer Systems Management

Typical Course of Study

Quarter 1
CS2970 (4-1) Structured Programming with ADA
IS2000 (3-0) Introduction to Computer Management
MN2155 (4-0) Accounting for Management
MN3105 (4-0) Organization and Management

Quarter 2
CS3010 (4-0) Computing Devices and Systems
IS3020 (4-0) Software Design
IS3170 (4-0) Economic Evaluation of Information Systems
OS3101 (5-0) Statistical Analysis for Management

Quarter 3
CS3030 (4-0) Operating Systems Structures
IS4200 (4-0) Systems Analysis and Design
IS4183 (4-0) Application of Database Management Systems
OS3004 (5-0) Operations Research for Computer Systems Managers

Quarter 4
IS3502 (4-0) Computer Networks: Wide Area/Local Area
IS4185 (4-0) Decision Support Systems
IS0810 (0-0) Thesis Research
NS3252 (4-0) Joint and Maritime Strategic Planning
Optional Elective

Quarter 5
IS4300 (4-0) Software Engineering and Management
MN4154 (4-0) Financial Management in the Armed Forces
IS0810 (0-0) Thesis Research
Optional Elective

Quarter 6
IS4182 (4-0) Information Systems Management
MN3307 (4-0) ADP Acquisition
IS0810 (0-0) Thesis Research
Optional Elective
The final program is Telecommunications Systems Management. This curriculum provides instruction to officers who will perform as communications managers of new communication systems applications or as communication officers on large commands and staffs, afloat and ashore, including the organization of the Joint Chief of Staff and the Defense Communications Agency. The curriculum has two sponsors: The Director of Naval Communications which supports the non-engineering program and the U.S. Coast Guard Headquarters which sponsors the engineering program. Each curriculum provides comprehensive study in management, with emphasis on the systems management field. Additionally, the curricula provides study in the technical field appropriate to decision making in advanced systems and program management. These technical courses within the non-engineering curriculum have been especially prepared for non-engineering types, whereas the engineering curriculum does offer engineering courses.

Telecommunications Systems Management

Typical Course of Study

Quarter 1
CS2970 (5-0) Structure Programming with ADA
MN2155 (4-0) Accounting for Management
MN3105 (4-0) Organization and Management
MN3301 (4-0) Systems Acquisition
CM0001 (0-2) Seminar

Quarter 2
CS3050 (4-0) Software Engineering
MA1248 (4-1) Applied Mathematics
OS3104 (4-0) Statistics
CM0001 (0-2) Seminar

Quarter 3
OS3404 (3-0) Man-Machine Interaction
EO2710 (3-2) Signal and Systems I
CM3112 (4-0) Naval Telecommunications Systems
OS3005 (4-0) Operations Research for Communications Managers
CM0001 (0-2) Seminar
Two Week Experience Tour
Quarter 4
MN4125 (4-0) Managing Planned Change in Complex
EO2750 (3-2) Signals and Systems II
IS3502 (4-0) Computer Networks
CM3001 (4-0) Economic Evaluation of Telecommunications
CM0001 (0-2) Seminar

Quarter 5
CM0810 (0-0) Thesis Research
EO3750 (4-1) Communications Systems Analysis
CM4502 (4-0) Telecommunications Networks
CM3002 (4-0) Economic Evaluation of Telecommunications
CM0001 (0-2) Seminar

Quarter 6
CM0810 (0-0) Thesis Research
CM4925 (4-0) Telecommunications Systems, Industry and Regulations
Optional Elective
CM0001 (0-2) Seminar

Note: The Coast Guard Option is more engineering in nature.
IV. THE FACULTY OF THE DEPARTMENT OF ADMINISTRATIVE SCIENCES

The Department of Administrative Sciences is the largest academic department on campus, both in terms of faculty and students. The department has fourteen full professors, twenty associate professors, nineteen assistant professors, seventeen adjunct professors, and nine military instructors. In addition, the department has been very successful over the last five years in attracting a number of distinguished scholars to fill the Grace Mary Hopper Chair in Computer Science.

The department's faculty has long been recognized for its dedication to outstanding teaching and research in areas vitally important to the U.S. Navy and the Department of Defense. The department leads the school in attracting reimbursable research funding.


The department has an active research relationship with other universities and research institutes, for instance, MIT, Carnegie-Mellon University, New York University, the University of Pennsylvania, the University of Michigan and AT&T Bell Labs. Many of our faculty have co-authored papers and books with faculty members and researchers at these major institutions.

The strength of our overall program is indicated in Table 1, giving the record of publications, number of years teaching, Master's thesis supervised, Ph.D. committee work for tenured and tenure track faculty.

In addition to an active research program, the faculty has considerable experience in teaching doctoral courses, serving as supervisors and members of dissertation committees, and as administrators and committee members of other Ph.D. programs. Appendix B of this proposal contains a summary of faculty contributions to Ph.D. programs.
### PUBLICATIONS AND TEACHING RECORD FOR FULL TIME FACULTY

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V. REQUIREMENTS AND PROCEDURES FOR DOCTORAL STUDY

The Department of Administrative Sciences at the Naval Postgraduate School will award the degree of Doctor of Philosophy in Administrative Sciences as a result of meritorious and scholarly achievement in a particular field of administrative sciences (organization and management, integrated logistics and operations management, and information technology. This program includes course work, written and oral examinations, research, and a written dissertation. A candidate must exhibit scholarly application to the entire course of study, achieve a high level of scientific advancement, and establish an ability for original investigation leading to the advancement of fundamental knowledge.

ADMISSION PROCEDURE

A student seeking to become a candidate for this program must present evidence of having obtained a bachelors degree or its equivalent, no particular subject required, and of having excelled in previous academic works. Applicants are asked to provide personal essays; letters of recommendation; and the Graduate Management Admission Test (GMAT) scores or the Graduate Record Examination Test (GRE). Non-native English students must demonstrate proficiency in English.

PROGRAM OF STUDY

Each student's Doctoral Committee to guide the student in designing a program suitable for his/her special interests and background to alert them to opportunities both within the Department of Administrative Sciences and other departments at NPS; and to monitor the student's progress.

Core Program

The doctoral program is based on a core of courses designed to provide the student with the broad knowledge and analytic skills necessary for advanced coursework and dissertation research. The core program develops the basic tools of quantitative methods, economics, management and accounting. Students must also demonstrate competence in computer usage as evidenced by prior coursework [IS0123 Computer Skills Development (4-0) Course equivalent] or experience. In the absence of such work, a student will be required to take core M.S. courses.
The core courses are as follows:

1. Quantitative Methods: Two 4-unit courses (e.g. OS 3101 Statistics Analysis for Management and either OS3006 Operations Research for Management or OS3004 Operations Research for Computer Systems Management).

2. Economics: Two 4-unit courses (e.g. MN2031 Economics Decision Making and MN3140 Microeconomic Theory).

3. Organization and Management: Two 4-unit courses (e.g. MN3105 Organization and Management and either MN4105 Management Policy or MN4125 Managing Planned Change in Complex Organizations).

4. Accounting and Financial Management: Two 4-unit courses (e.g. MN2150 Financial Accounting and MN3161 Managerial Accounting).

5. Two 4-unit research courses will be required. The following courses will be developed as a standard option. However, the student, with the approval of his/her doctoral committee may authorize alternative research courses more suited to the student's research program area.

   MN4901 RESEARCH THEORY AND METHODS I (4-0)
   MN4902 RESEARCH THEORY AND METHODS II (4-0)

   Students who have taken the equivalent of these courses may waive one or more of these core requirements by the Departmental Ph.D. Committee.

THE DEPARTMENTAL PH.D. COMMITTEE

The Departmental Ph.D. Committee has complete responsibility for the entire doctoral program. It is their duty to make recommendations for admission decisions, administering the preliminary examination, and overseeing the written part of the qualifying examination. The Ph.D. Committee shall monitor the progress of each student to ensure the student is on track towards the degree. Furthermore, the Ph.D. Committee is responsible for providing general guidance on the student's research program to all doctoral students.

A candidate shall apply to the Departmental Ph.D. Committee and shall ensure that all transcripts of previous post-secondary education and letters of recommendation are sent to the Committee. The Committee shall then recommend action to the Chairman of the Department of Administrative Sciences, who will formally admit the student into the doctoral program.
THE STUDENT'S DOCTORAL COMMITTEE

Upon recommendation by the Departmental Ph.D. Committee, a Doctoral Committee for the student will be nominated by the Chairman of the Department of Administrative Sciences and approved by the Academic Council as per Academic Council Policy Manual, Section 250. The Committee shall consist of at least five members from three departments. This Committee shall consist of at least three members of the Department of Administrative Sciences and two members from other departments (including a member from the department which will administer the student's minor field of study). At least four members will have earned the doctorate and the Committee may contain no more than two members who have not earned the doctorate. The Chairman of the Department of Administrative Sciences shall designate one of the Administrative Sciences members as Chairman of the Doctoral Committee.

At the time that the above Committee is submitted for approval, or at a subsequent time no later than when the student is advanced to candidacy for the doctorate, the Chairman of the Department of Administrative Sciences shall designate, for the approval of the Academic Council, the member of the Student's Doctoral Committee who shall serve as Dissertation Supervisor. In accordance with Academic Policy Manual, Section 255, the Chairman of the Administrative Sciences Department, shall certify that the Dissertation Supervisor has been selected.

MAJOR AND MINOR FIELDS OF STUDY

Upon admission, a student must indicate a major field of study in economics, financial management, logistics, management or management information systems. The student will be encouraged to select the minor field early in the student's program to ensure the student has adequate time to complete the requirements of the minor field of study and to coordinate the student's research for his minor field of study with his research for his major field of study. The minor field of study which may be in a department other than the Department of Administrative Sciences, such as National Security Affairs, Operations Research; Computer Science; Command, Control and Communications; Electrical and Computer Engineering. The student's selection of a minor field of study must be approved by the Student's Doctoral Committee. The criteria for satisfying the minor requirements are established by the department which offers the minor program.
THE QUALIFYING EXAMINATION

After the student has successfully completed all requirements for the minor field and has essentially completed the major field, the student shall be given a qualifying examination in [administrative sciences]. The qualifying examination will include two parts, a written part and an oral part.

The Departmental Ph.D. Committee will prepare and administer the written part of the examination. The examination will include an in-depth testing of the student's knowledge and understanding of the student's specific field of study and ability to conduct research. The examination will be at least six hours in length and given over a one to two day period. The results will be evaluated by the Department Ph.D. Committee. The Department Ph.D. Committee will recommend the student for either an oral examination, a re-examination of the written part within six months, or the termination of the student's program. The written part of the qualifying examination should be taken by the summer quarter of the student's third year.

The oral portion of the qualifying examination shall be an open examination conducted by the student's entire Doctoral Committee and will only be scheduled upon the student's successful completion of the written part. Additionally, the Academic Council and members of the Department of Administrative Sciences and the minor department will be invited. The oral examination shall be given as soon as possible, normally within one month after successful passage of the written part of the qualifying examination. The oral part of the qualifying examination must be successfully completed with four and a half years after the date of entry into the program.

The successful passage of both the oral portions of the qualifying examination requires the unanimous vote of the Student's Doctoral Committee. The results of the entire qualifying examination shall be reported to the Dean of Instruction within two weeks after the scheduled date of the oral examination. If the student does not successfully pass the qualifying examination on the first try, the student may petition his/her Doctoral Committee to take the examination a second time.

DISSERTATION RESEARCH

The dissertation culminates the student's academic endeavors. Working closely with faculty members from his/her committee during all phases of preparation, the student is expected to present a dissertation of substantial magnitude. The dissertation should make a significant contribution to the advancement of knowledge in the chosen field of study. It should be of sufficient
originality and quality to merit publication, either in whole or in part, in a professional journal. It is the student's responsibility to identify a Dissertation Supervisor and begin research as soon as possible. The student's Dissertation Supervisor shall be a member, but not necessarily the chairman, of the student's Doctoral Committee.

ADVANCEMENT TO CANDIDACY

The student's Doctoral Committee shall recommend that the Academic Council advance the student to candidacy after the completion of the following requirements:

a. The student's Doctoral Committee is approved by the Academic Council.

b. The student's Dissertation Supervisor is approved by the Academic Council.

c. The requirements for the minor are successfully completed.

d. The successful passage of the qualifying examination.

e. The proposed dissertation subject is approved by the student's Doctoral Committee.

THE DISSERTATION DEFENSE

The dissertation shall be defended at a final oral examination no sooner than six months after the advancement to candidacy and no earlier than one week after submission and acceptance of a draft of the student's dissertation by the student's Doctoral Committee. The Doctoral Committee shall schedule the final oral examination and invite members of the Academic Council, the Department of Administrative Sciences, and other interested members of the academic community to attend. While any interested faculty member may attend the examination and participate in the discussion, only those individuals who are members of the student's Doctoral Committee can vote on the dissertation. The examination will be conducted by the Chairman of the student's Doctoral Committee, and will consist of a presentation and defense of the dissertation. Successful passage of the examination requires a unanimous vote of the student's Doctoral Committee.

The results of the examination shall be reported to the Dean of Academic Administration not later than two weeks after the scheduled date of the examination. A student that fails the final oral examination may petition his/her Doctoral Committee for at most one re-examination.
TIME LIMIT

The student must complete all degree requirements, including the writing and successful defense of the dissertation within five years after advancement to candidacy or six and a half years from the date of entry into the program.
APPENDIX C

APPROVED FIELDS OF STUDY

INFORMATION TECHNOLOGY

Information Technology (IT) broadly encompasses the design, use, and evaluation of information and communication systems supporting organizational functions and decision making. An information technology can be defined as a set of procedures that collects (or retrieves), processes, stores, and disseminates information to support decision making and control. Information systems are sociotechnical systems; they are composed of machines, devices, and "hard" physical technology. In addition, information technology requires substantial social, organizational, and intellectual investments to make them work properly. The study of information technology is multidisciplinary, and no single theory or perspective dominates the field. In general, the field can be divided into technical and behavioral approaches. The technical approach to information technology emphasizes mathematically based, normative models to study capabilities of these systems.

A growing part of the information technology field is concerned with behavioral problems of system utilization, implementation, and creative design that cannot be expressed with normative models. The behavioral approach does not ignore technology, indeed, information technology is often the stimulus for a behavioral problem or issue. But the focus is generally not technical solutions, but rather on the social, group, and organizational impacts and uses of systems, the political impacts and uses of information, individual response to system realities, and cognitive models of human reasoning.

The Ph.D. program in Information Technology prepares scholars who have a firm understanding of the technical and organizational aspects of computer-based systems supporting organizations and individuals, as well as the analytical and empirical skills with which to contribute to basic knowledge in the discipline.
(a) Faculty Members Active in Information Science

T.X. Bui
T.K. Abdel-Hamid
H.K. Bhargava
D.R. Dolk
J. Emery
B.A. Frew
W.J. Haga
C.R. Jones
M. Kamel
R.L. Knight
M.J. McCaffrey
B. Ramesh
L.R. Sahlman
N.F. Schneidewind
K. Sengupta
M.W. Suh
M. Zviran

(b) Recent Publications of the Faculty


D.R. Dolk, "Data as models: An approach to implementing model management", Invited paper presented at the Model Management Workshop, Austin, TX, May 15-17, 1985 (also appeared in a special issue of *Decision Support Systems*)


Suh, M.W., R. Dulek, "A Reassessment of Clarity in Written Managerial


M. Zviran, W.J. Haga, "Password Security: An Exploratory Study", *Communications of the ACM*


(c) Ph.D. Dissertations Supervised by MIS Faculty Members


(d) Recent M.S. Theses Supervised by the MIS Faculty


Buyske, J. and Call S., "A Microcomputer Based Employee Scheduling System for the Palo Alto Veterans Administration Medical Center.", M.S. Information Sciences, September 1988, Advised by T.K. Abdel-Hamid


Feiler, J., "The Establishment of a Management Information Systems Research Center at the Naval Postgraduate School.", M.S. Information Sciences, September 1989, Advised by T.K. Abdel-Hamid


Nora Gaye Stevens "The Application of Current User Interface Technology to Interactive Wargaming Systems", M.S. in Information Sciences, October 1987, Advised by T.X. Bui


Gary Evans, "Identifying Security Problems and Devising Control Strategies for Local Area Networks: A Case Study Approach", M.S. in Information Sciences, September 1990, Advised by T.X. Bui


Bacheller, J.S., "Design And Implementation of a Prototype Microcomputer Database Management System For the Standardization of Data Elements", M.S. in Information Systems, September 1990, Advised by D.R. Dolk

Barber, M.H. and Richey, P.R., "Naval Supply Systems Command: Data Administration Planning and Implementation", M.S. Information Systems, March 1989, Advised by Dolk, D.R.


Short, W.B. and Bockenek, J.M., "Analysis of the EPMIS Data Base", M.S. in Information Systems, September 1989, Advised by Dolk, D.R.


France, B.E. (Sr), "Moving Optical Technology In-house", M.S. Information Systems, March 1989, Advised by Frew, B.
Hode, F.C., "Use of Optical Storage Devices as Shared Resources in Local Area Networks", M.S. in Information Systems, Advised by Schneidewind, N.F. and Frew, B.A.


McCutchion, D.A., "Use of Aviation 3-M Information Outputs by Organizational Maintenance Users", M.S. in Management, December 1989, Advised by W.J. Haga

Murphy, R.P. and Davis, L.S., "Personal Computer Use At Navy Field Activities: A Productivity Study", M.S. in Management, March 1990, Advised by W.J. Haga


McMullin, J.D., "Determinants of the Effectiveness of Situation Estimation", M.S. in Systems Technology, June 1990, Advised by C.R. Jones


Smith, C.V., "The Use of Unix Based Workstations In the Information Systems Laboratory", M.S. in Information Systems, March 1989, Advised by Schneidewind, N.F. and Kamel, M.


Newton, S.R., "Establishing a Selected Reserve Corporate Database", M.S. in Information Systems, March 1990, Advised by R. Knight


Mason, L.E., "Requirements For Standard Application and Local Area Networks In Naval Aviation Squadrons", M.S. in Information Systems, September 1989, Advised by Knight, R.


Suriano, D.A., "The Design of a Local Area Network Configuration Management System For the Naval Postgraduate School Administrative Sciences Department", M.S. in Information Systems, Schneidewind, N.F. and Sahlman, L.R.


Marty Buker, A Systematic Approach to Local Area Network Administration, M.S. Telecommunication Systems, March 1989, Advised by Schneidewind N.F.

Mark F. Burnett, An Assessment of the Integrated Services Digital Network in

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Support of Command, Control, Communications and Intelligence Systems, M.S. Systems Technology, March 1989, Advised by Schneidewind N.F.

James C. Hage, Use of Optical Storage Disks as Shared Resources in Local Area Networks M.S. Information Systems, September 1989, Co-Advised by Schneidewind N.F.


Hansen, C.C.,"Definition of a Decision support System (DSS) for Use by Application Developer within the Common Front-End system Architecture at the Marine Corps Central Design and Programming Activity, Kansas City, MO.", M.S. Information Systems, March 1989, Advised by Zviran, M.
(e) Graduate Courses Appropriate to the MIS Field and its Minors

IS 3000 Distributed Computer System (4-0)
IS 3020 Software Design (3-2)
IS 3170 Economic Evaluation of Information Systems (4-0)
IS 3502 Computer Networks: Wide Area/Local Area (4-0)
IS 3503 Micro-Computer Networks (3-2)
IS 4182 Information Systems Management (4-0)
IS 4183 Applications of Database Management Systems (4-1)
IS 4185 Decision Support Systems (4-1)
IS 4186 Knowledge-Based Systems (4-0)
IS 4200 System Analysis and Design (4-0)
IS 4300 Software Engineering and Management (4-0)
IS 4502 Telecommunications Network (4-0)
CS 3701 Introduction To Information Security and Policy (4-0)
CS 4601 Computer Security (4-0)

(f) Additional Courses Needed to Support Doctoral Work in MIS

IS47XX Simulation (4-0)
IS47XX Artificial Intelligence (4-0)
IS47XX Model Management (4-0)

(g) Sample Ph.D. Program in Information Technology

First Year: Remove any deficiencies in meeting the core program requirements for the Ph.D. program. Take the additional IS courses (SIMULATION, ARTIFICIAL INTELLIGENCE, and MODEL MANAGEMENT). Pass preliminary exam and have doctoral committee appointed; begin work toward minor requirements in Administrative Sciences, Behavioral Sciences, Computer Science, Economics, or Operations Research according to interest.

At the end of the first year, a diagnostic review is conducted by members of the academic unit in the student's major field. The review considers such indicators of scholastic achievement as performance in research courses and doctoral courses deemed appropriate by the examining faculty. The review culminates in a formal report to the Chairman of the Departmental Ph.D. Committee and includes a recommendation as to whether or not the student should continue in the program and if so, make recommendations regarding how the student can improve his or her performance. A professor from the student's chosen academic unit then discusses the report with the individual, making a careful assessment of demonstrated strengths and weaknesses in order to help the student to progress more effectively.
**Second Year:** Finish minor requirements, select dissertation supervisor. Prepare for Qualifying Examination. Take Qualifying Examination near the middle of the second year. The written Qualifying Examination will cover 4 graduate level courses to be chosen by the student with the approval of the student's Ph.D. Committee.

**Third Year:** Concentrate primarily on dissertation research, with perhaps a course or two related to the dissertation.

The dissertation culminates the student's academic endeavors. Working closely with faculty members from his or her committee during all phases of preparation, the student is expected to present a dissertation of substantial contribution. The dissertation should make a significant contribution to the advancement of knowledge in the Management Information Systems field. It should be of sufficient originality and quality to merit publication, either whole or in part, in a professional publications.

The dissertation is defended at a final oral examination. It must be completed and accepted within seven and a half years from the date of entry into the program. The dissertation defense is held before an student's Ph.D. committee. The committee is composed of at least two MIS faculty members and two from other areas related to the dissertation topic. While any interested faculty member may attend the examination and participate in the discussion, only those individuals who are members of the student’s Ph.D. committee may vote on the dissertation’s approval or disapproval.
ORGANIZATION AND MANAGEMENT

As a subfield of study, Organization and Management involves the understanding and management of organizational members, subunits, and entire organizations. Drawing heavily upon the social sciences, this field combines the following subdisciplines: (1) Organizational Behavior, (2) Organizational Theory, (3) Management Theory, (4) Strategic Planning and Policy, and (5) Planned Change.

The Ph.D. in Organization and Management prepares researcher/scholars who can make original contributions to Organization and Management research, whether basic or applied. The Organization and Management faculty places a high value on theory development and on the creative use of various methodologies for theory development and testing. Thus, students learn qualitative as well as quantitative research methods. The close ties of the Organization and Management faculty to Department of Defense organizations provide opportunity for students to gain access to large, complex organizations during their coursework and dissertation research.

(a) Faculty Members Active in Management

Frank Barrett
Roger D. Evered
Reuben Harris
Susan P. Hocevar
Benjamin J. Roberts
Nancy Roberts
Sterling Sessions
James E. Suchan
Gail Fann Thomas
Kenneth W. Thomas

(b) Recent Publications of the Faculty


R. Evered and J. Selman, "Managers anonymous", New Management, vol. 6, no. 2, Fall, 1988


K.W. Thomas, "Conflict and Conflict Management", in M.D. Dunnette (Ed.), Handbook of Industrial and Organizational Psychology, Rand McNally, Chicago, 1976, pp. 889-935

K.W. Thomas, "Conflict", in S. Kerr (Ed.), "Organizational Behavior", Grid Publications, Columbus, OH, 1979, pp. 151-181


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(c) Ph.D. Dissertations Supervised by Organization and Management Faculty Members

Ralph H. Kilmann, "The Development and Validation of a Protective Measure of Interpersonal Values", Graduate School of Management UCLA, 1972, Supervised by K.W. Thomas


David W. Jamieson, "Organizational Change and Development in Schools: An Assessment of a Structural/Process Strategy for Redesigning and Developing the Management System", Graduate School of Management, UCLA, 1976, Supervised by K.W. Thomas

Brhane Tesfay, "Labor and Management Negotiators in Kenya", Graduate School of Management, UCLA, 1977, Supervised by K.W. Thomas


(d) Recent M.S. Theses Supervised by the Organization and Management Faculty

Boggs, S.R., "Job Satisfaction Within The Military Entrance Processing Station and Its Relationship To Quality of Performance", M.S. in Management, June 1990, Advised by R.D. Evered


Kelley, B.D., "Coast Guard Strategic Management: Law Enforcement in the 1990's", M.S. in Management, June 1990, Advised by R.D. Evered


Neil, R.C., "The Graduate Record Examination (GRE) as a Predictor of Success at the Naval Postgraduate School: A Validation Test", M.S. in Management, June 1989, Advised by Evered, R.D.


Hasselbalch, J.M., "Sources of Job Satisfaction and Dissatisfaction Among Mid-Grade Coast Guard Officers", M.S. in Management, June 1990, Advised by R.A. McGonigal and Thomas, K.W.


(e) Upper Division Courses Appropriate to the Organization and Management Field and its Minors

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(f) Additional Graduate Courses Suggested to Support Doctoral Work in Organization and Management

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First Year: Remove any deficiencies in meeting the core program requirements for the Ph.D. program. Take the additional Organization and Management courses (RESEARCH METHODS IN MANAGEMENT I & II, THEORY BUILDING IN MANAGEMENT, and CONTEMPORARY DEVELOPMENTS IN MANAGEMENT). Pass preliminary exam and have doctoral committee appointed; begin work toward minor requirements in Administrative Sciences, Behavioral Sciences, Computer Science, Economics, or Operations Research according to interest.

At the end of the first year, a diagnostic review is conducted by members of the academic unit in the student’s major field. The review considers such indicators of scholastic achievement as performance in research courses and doctoral courses deemed appropriate by the examining faculty. The review culminates in a formal report to the Chairman of the Departmental Ph.D. Committee and includes a recommendation as to whether or not the student should continue in the program and if so, make recommendations regarding how the student can improve his or her performance. A professor from the student’s chosen academic unit then discusses the report with the individual, making a careful assessment of demonstrated strengths and weaknesses in order to help the student progress more effectively.

The level of competence expected in the major field (Organization and Management) is that of a professional research scholar who is contributing to that field’s progress. This implies a broad knowledge of the field and its literature and a detailed understanding of current research in at least one subfield.

Second Year: Finish minor requirements, select dissertation supervisor, and prepare for Qualifying Examination. Take Qualifying Examination near the middle of the second year. The written Qualifying Examination will cover 4 graduate level courses to be chosen by the student with the approval of the student’s Ph.D. Committee.

Third Year: Concentrate primarily on dissertation research, with perhaps a course or two related to the dissertation.

The dissertation culminates the student’s academic endeavors. Working closely with faculty members from his or her committee during all phases of preparation, the student is expected to present a dissertation of substantial contribution. The dissertation should make a significant contribution to the advancement of knowledge in Organization and Management field. It should be of sufficient originality and quality to merit publication, either whole or in part, in a professional publications.
The dissertation is defended at a final oral examination. It must be completed and accepted within seven and a half years from the date of entry into the program. The dissertation defense is held before an student’s Ph.D. Committee. The committee is composed of at least two Organization and Management faculty members and two from other areas related to the dissertation topic. While any interested faculty member may attend the examination and participate in the discussion, only those individuals who are members of the student’s Ph.D. committee vote on the dissertation’s approval or disapproval.
INTEGRATED LOGISTICS

As the title suggests, this field of study encompasses the three highly overlapping areas of logistics, transportation, and operations management, also known as integrated logistics (IL). To produce goods or services (products), a system acquires inputs (e.g., raw materials) that are transported across space and time to the production facility, where their function is transformed (production). The products, in turn, are transported across space and time to where and when they are needed. Logistics is concerned with acquisition (including design issues relating to the life cycle costs involved), transportation (space transformation), storage (time transformation) and maintenance. Thus it can be viewed as a broad field that includes transportation as a sub-field. Operations management is concerned both with logistics (including transportation) operations and with production operations, and bridges the gap between the logistics of acquisition of inputs and the logistics of distribution of outputs.

While much of the theory involved in the Integrated Logistics field of study is based on analytical studies of physical systems, where the function transformation element, if it exists, is manufacturing goods, there is a growing number of applications of such models to the production of services. For instance, many quality assurance ideas developed for manufacturing are now applied to services, and DOD is committed to do so across the board in its own operations. Needless to say, DOD is involved in large scale physical logistics operations, some in-house manufacturing, much coordination with external manufacturers and service providers, and a lot of service operations management (including large-scale maintenance operations). All these applications provide a rich area of research and study.

The Ph.D. program in logistics, transportation and operations management/integrated logistics prepares scholars who have a firm understanding of the technical and organizational aspects of the subject, as well as analytical and empirical skills with which to contribute to scientific knowledge in this area.
(a) Faculty Members Active in Logistics, Transportation and Operations Management

Dan C. Boger
David G. Brown
Keebom Kang
Alan W. McMasters
Thomas P. Moore
Dan Trietsch

(b) Recent Publications of the Faculty


Brown, D.G., "Freight Service Quality Cost Economics and a Hypothetical Railroad Example," paper accepted for publication and presentation at the *January 1991 Annual Meeting of the Transportation Research Board.*


(c) Recent M.S. Theses Supervised by the Integrated Logistics Faculty

J.L. Panoff, "A Study of the Concept of Operations and Future Direction of the Tactical Receive Equipment (TRE) and Related Applications (TRAP) Broadcast (U)," M.S. in Telecommunications Systems Management, March 1990, Advised by D.C. Boger


J.D. Hillenmayer, "Measuring the Effectiveness of Small Satellites as Replacements for Tactical Airborne Reconnaissance Platforms (U)," M.S. in Systems Technology (Space Systems Operations), September 1990, Advised by D.C. Boger

S.D. Moore, "ASAT's and Orbital Debris: The Potential for Collateral Damage (U)," M.S. in Systems Technology (Space Systems Operations), September 1990, Advised by D.C. Boger


M.D. Allen and KM. Nelson, "An Analysis of the Problem of Military Cargo Discharge in Third World Locations During a Crisis Situation (U)," M.S. in Management, December 1990, Advised by D.C. Boger


P. Coffey, "Parametric Data Collection and Analysis for the KCR-1 35 and the B-52 Modification Programs, M.S. in Management, December 1990, Co-Advised by D.C. Boger


C.F. Williams, "Interoperability Among Interdiction Forces in Counternarcotics," LT M.S. in Systems Technology (Command, Control, and Communication), March 1991, Advised by D.C. Boger

S.M. Hammon, "Economic Analysis of Waterfront Area Services at Naval Station Long Beach," M.S. in Management, June 1991, Advised by D.C. Boger


G.W. Zak, "The Impact of Not Containerizing Ammunition on the Stockage Objectives and Required Delivery Dates of Desert Shield (U)," M.S. in Management, June 1991, Advised by D.C. Boger


L. Lewandowski, "Improving Battle Group Tactical Information Through Incorporation of the TSG Concept (U), M.S. in Systems Technology (Space Systems Operations), June 1991, Advised by D.C. Boger


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G.S. Herbert, "Exploiting the High Ground: Tactical Space Support to Operation Just Cause and Operation Desert Storm (U)," M.S. in Systems Technology (Space Systems Operations), September 1991, Advised by D.C. Boger


R.J. Wilson, "Decision-Making Guide for the Proposed Coast Guard Differential


Schwankeke, R.L., "Essentially Weighting Models for Wholesale Level Inventory Management", M.S. in Management, December 1985, Advised by A.W. McMasters

Vasilomanolakis, A., "A Proposal for Improvement of Supply Support for Ship
Overhauls i the Hellenic Navy", M.S. in Management, December 1988, Advised by A.W. McMasters


Park, B.G., "Developing an Inventory Model for the Korean Air Force Repairable
Item Inventory, Master of Science in Management, December 1988, Advised by T. P. Moore.


(d) Upper Division Courses Appropriate to the Integrated Logistics Field and its Minors

MN 3301 System Acquisistion and Project Management (4-0)
MN 3372 Material Logistics (4-0)
MN 3373 Transportation Management I (4-0)
MN 3374 Production Management: A TQM Perspective (4-0)
MN 3375 Material Handling Systems Design (4-0)
MN 3377 Inventory Management (4-0)
MN 4310 Logistics Engineering (4-0)
MN 4373 Transportation Management II (4-0)
MN 4376 Seminar in Material Logistics (4-0)

MN 4377 TQM/TQL: Philosophy, Theory, Tools (4-0) [NEW COURSE]
Deming's 14 points (philosophy and basic theory). The 7 basic graphic tools (flow charts, cause-and-effect diagrams, Pareto charts, histograms, scatter diagrams, run charts and control charts), which help analyze generic processes. Advanced theories and techniques, designed to address quality issues of specific types, including SMED (single minute exchange of die, or setup reduction), Poka-Yoke (mistake proofing), Synchronized Operations (also known as Just-In-Time), Statistical Experimental Methods for off-line quality improvement such as Taguchi Methods, Total Preventive Maintenance, and Group Technology. We'll discuss how these methods, developed predominantly in the manufacturing environment, can be used in services.
PREREQUISITES: Any basic course in probability and statistics, or instructor approval.

(e) Additional Graduate Courses Suggested to Support Doctoral Work in Logistics

MN 4107 Logistics Policy Analysis (4-0)
PREREQUISITES: All logistics courses required for the 827 curriculum.
MN 4320 Life Cycle Cost Models (4-0)
A critical review of current life cycle cost models in use by the various services of the Department of Defense and by major companies in the private sector, such as aircraft manufacturers. Assumptions and formulas for each model element. Learning curves. Emphasis on the reliability and maintainability aspects of weapon systems.
PREREQUISITES: OS 3006, MN 4310

MN 4374 Advanced Operations Management (4-0)
Advanced techniques in scheduling (including projects, purchasing under stochastic lead times, hub operations such as airports), project management with limited resources, line balancing, capacity planning, location, mistake proofing, setup reductions and other lead time and inventory reduction methods.
PREREQUISITES: MN 3374

MN 4375 Materials Handling Models (4-0)

MN 43xx Modeling REALM Systems (4-0)
An examination of models, modeling techniques, and model optimization processes for repairable equipment and logistic-maintenance (REALM) systems. Both analytic and simulation models will be studied. Models that may be studied include the METRIC family of models, TIGER, LCOM, MREAL1, and others.
PREREQUISITES MN 4310, MN 3372, OS 3001, OA 4201

MN 43xx Logistics Information Systems Design (4-0)
The design, integration, and use of information systems in the management of logistic processes and systems will be studied, and their good and bad features examined. Principles of the design and integration of these information systems will be studied. The Navy's UICP, UADPS-SP and SUADPS systems will be studied to illustrate the various principles and problems involved in logistics information systems design.
PREREQUISITE MN 4182

MN 43xx Logistics Risk Analysis (4-0)
Techniques of analysis of logistics projects involving trade-off between risks and benefits. Economic analysis of failure consequences of low probability/high impact events such as nuclear accident. Emphasis on applications to weapon systems analysis.
MN 43xx Transportation Systems Modeling (4-0)
In-depth study of transportation systems as mathematical networks, including the classical transportation problem. Application of these concepts to scenarios evaluating system effects of alternative rate structures, freight consolidation, and facility consolidation using actual cases.
PREREQUISITE: OA 4202

(f) Sample Ph.D. Program in Logistics/Transportation/Operations

First Year: Remove any deficiencies in meeting the MS program in Administrative Sciences. Take additional Integrated Logistics courses, and a course in research methods (e.g. OA 4101). Pass preliminary exam and have doctoral committee appointed; begin work toward minor requirements in Management Information Systems, Operations Research, Computer Science, Behavioral Sciences, Mathematics or Engineering according to interest.

At the end of the first year, a diagnostic review is conducted by members of the academic unit in the student's major field. The review considers such indicators of scholastic achievement as performance in research courses and doctoral courses deemed appropriate by the examining faculty. The review culminates in a formal report to the Chairman of the Departmental Ph.D. Committee, and includes a recommendation as to whether the student should continue in the program, and if so, recommendations regarding how the student can improve his or her performance. A professor from the student's chosen academic unit them discusses the report with the student, making a careful assessment of demonstrated strengths and weaknesses in order to help the student to progress more effectively.

Second Year: Finish minor requirements, select dissertation supervisor. Prepare for Qualifying Examination. Take Qualifying Examination near the middle of the second year. The written Qualifying Examination will cover 4 graduate level courses to be chosen by the student with the approval of the student's Ph.D. Committee.

Third Year: Concentrate primarily on dissertation research, with perhaps a course or two related to the dissertation. The dissertation culminates the student's academic endeavors. Working closely with faculty members from the student's committee during all phases of preparation, the student is expected to present a dissertation of substantial contributions. The dissertation should make a significant contribution to the advancement of knowledge in the Integrated Logistics field. It should be of sufficient originality and quality to merit publication, either whole or in part, in a refereed professional publications.
The dissertation is defended at a final oral examination. It must be completed and accepted within seven and a half years from the date of entry into the program. The dissertation defense is held before an student's Ph.D. committee. The committee is composed of at least two IL faculty members and two faculty members from other areas related to the dissertation topic. While any interested faculty member may attend the examination and participate in the discussion, only the members of the student's Ph.D. committee vote on the dissertation approval of disapproval.
APPENDIX D
INTRODUCTION TO THE DEPARTMENT OF ADMINISTRATIVE SCIENCES PERSONNEL, ACADEMIC/RESEARCH PROGRAMS, AND RECENT DEVELOPMENTS/ACTIVITIES

DEPARTMENT OF ADMINISTRATIVE SCIENCES
NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIFORNIA 93943

PROFESSOR DAVID R. WHIPPLE, JR., CHAIRMAN
I. DEPARTMENT OF ADMINISTRATIVE SCIENCES' SUMMARY OF FACULTY AND STAFF

<table>
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<td>Emeritus Faculty</td>
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<td>Support Staff</td>
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II. DEPARTMENT FACULTY
(Extracted from Naval Postgraduate School Catalog, 1991)

A. REGULAR FACULTY

WHIPPLE, DAVID R., Professor of Economics and Policy Analysis, 1971 and Chairman

Ph.D., University of Kansas, 1971

ABDEL-HAMID, TAREK, Associate Professor of Management Information Systems, 1986

Ph.D., MIT Sloan School of Management, 1984

BARRETT, FRANK, Assistant Professor, 1990

B.A., University of Notre Dame, 1975
M.A., University of Notre Dame, 1977
Ph.D., Case Western Reserve University, 1989

BHARGAVA, HEMANT, Assistant Professor of Management Information Systems, 1989


BOGER, DAN C., Associate Professor of Economics, 1979

Ph.D., University of California at Berkeley, 1979

BUI, TUNG X., Associate Professor of Management Information Systems, 1984

Ph.D., New York University, 1985

CARRICK, PAUL M., Associate Professor of Economics, 1969

Ph.D., University of California at Berkeley, 1956
DOLK, DANIEL R., Associate Professor of Management Information Systems, 1982 and Associate Chairman of Instruction

Ph.D., University of Arizona, 1982

DOYLE, RICHARD, Associate Professor of Public Budgeting, 1990

Ph.D., University of Washington, 1982

EITELBERG, MARK J., Associate Professor of Public Administration, 1982

Ph.D., New York University, 1979

ELSTER, RICHARD S., Dean of Instruction, Professor of Administrative Sciences, 1969

Ph.D., University of Minnesota, 1967

EUSKE, KENNETH J., Associate Professor of accounting, 1978

Ph.D., Arizona State University

EVERED, ROGER D., Professor of Management, 1979

Ph.D., University of California at Los Angeles, 1973

FREMGEN, JAMES M., Professor of Accounting, 1965

Ph.D., Indiana University, 1961

FREW, BARRY A., Adjunct Professor of Information Systems, 1984

M.S., Naval Postgraduate School, 1984

HENDERSON, DAVID R., Associate Professor of Economics, 1984

Ph.D., University of California at Los Angeles, 1976

HORTON, FENN C., Associate Professor of Economics, 1964

Ph.D., Claremont Graduate School, 1968
JONES, CARL R., Professor of Information and Telecommunications Systems, 1965
Ph.D., Claremont Graduate School, 1965

JONES, LAWRENCE R., Professor of Financial Management and Budgeting, 1987
Ph.D., University of California at Berkeley, 1977

KAMEL, MAGDI N., Assistant Professor of Management of Information Systems, 1988
Ph.D., University of Pennsylvania, The Wharton School, 1988

LAMM, DAVID V., Associate Professor of Acquisition and Contract Management, 1978
DBA, George Washington University, 1976

LIAO, SHU S., Professor of Accounting, 1977
Ph.D., University of Illinois, 1971

McCAFFERY, JERRY L., Professor of Public Budgeting, 1984
Ph.D., University of Wisconsin, 1972

McMASTERS, ALAN W., Professor of Operations Research and Administrative Sciences, 1965
Ph.D., University of California at Berkeley, 1966

MEHAY, STEPHEN L., Professor of Labor Economics, 1985
Ph.D., University of California at Los Angeles, 1973

MOORE, THOMAS P., Assistant Professor of Management Science, 1986
Ph.D., Virginia Polytechnic Institute and State University, 1985
MOSES, DOUGLAS, O., Associate Professor of Accounting, 1985
Ph.D., University of California at Los Angeles, 1983

RAMESH, BALASUBRAMANIAM, Assistant Professor of Information Systems, 1990
Ph.D., New York University, 1990

ROBERTS, BENJAMIN J., Associate Professor of Management and Human Resource Development, 1985
BS, Louisiana State University, 1970
MA, Louisiana State University, 1972
Ph.D., Pennsylvania State University, 1977

ROBERTS, NANCY C., Associate Professor of Strategic Management, 1986
Ph.D., Stanford University, 1983

SAN MIGUEL, JOSEPH C., Professor of Accounting, 1982
Ph.D., University of Texas, 1972

SCHNEIDEWIND, NORMAN F., Professor of Information Sciences, 1971
DBA, University of Southern California, 1966

SENGUPTA, KISHORE, Assistant Professor of Management Information Systems, 1989
Ph.D., Case Western Reserve University, 1990

SOLNICK, MICHEAL C., Associate Professor of Labor Economics, 1985
Ph.D., Cornell University, 1973

SUCHAN, JAMES E., Associate Professor of Management Communications, 1986
BA, State University of New York at Buffalo, 1971
MA, State University of New York at Buffalo, 1973
Ph.D., University of Illinois, 1980
SUH, MYUNG, Assistant Professor of Management Information Systems, 1989
    Ph.D., University of Rochester, 1989

THOMAS, GAIL F., Associate Professor of Management Communications, 1989
    BA, Northern Arizona, 1976
    MA, Arizona State University, 1979
    Ph.D., Arizona State University, 1986

THOMAS, GEORGE W., Associate Professor of Economics, 1978
    Ph.D., Purdue University, 1971

THOMAS, KENNETH W., Professor of Administrative Sciences, 1987
    Ph.D., Purdue University, 1971

TRIETSCH, DAN, Associate Professor of Operations Management and Logistics, 1987
    Ph.D., Tel Aviv University, 1983

WEITZMAN, RONALD A., Associate Professor of Psychology, 1971
    Ph.D., Princeton University, 1959

ZVIRAN, MOSHE E., Assistant Professor of Management Information Systems, 1988
    Ph.D., Tel Aviv University, 1988

ZWEIG, DANI, Assistant Professor of Information Systems, 1990
    Ph.D., Carnegie Mellon University, 1989
B. ADJUNCT FACULTY

CRAWFORD, ALICE, Adjunct Professor of Psychology, 1988
MA, San Diego State University, 1973

DRESSER, CYNTHIA H., Adjunct Professor of English as Second Language (ESL), 1989
MS, Monterey Institute of International Studies, 1987

GATES, WILLIAM R., Adjunct Professor of Economics, 1988
Ph.D., Yale University, 1984

GORMAN, LINDA, Adjunct Professor of Economics, 1988
University of Pittsburg, 1982

HAGA, WILLIAM J., Adjunct Professor of Management Information Systems, 1988
Ph.D., University of Illinois, 1972

HOCEVAR, SUSAN P., Adjunct Professor of Organization and Management, 1990
BA, University of Rochester, 1970
MA, Cornell University, 1975
Ph.D., University of Southern California, 1990

HOIVIK, THOMAS

KANG, KEEBOM, Adjunct Professor of Logistics, 1988
Ph.D., Purdue University, 1984

McCaffrey, Martin J., Adjunct Professor of Contracting and Acquisition and Management Information Systems, 1988
MS, Naval Postgraduate School, 1985
MEANS, TOM, Adjunct Professor

SESSIONS, STERLING D., Adjunct Professor, 1989

   Ph.D., Harvard University, 1962

SRIDHAR, SURESH

TERASAWA, KATCHAN, Adjunct Professor of Economics and Policy Analysis, 1989

   Ph.D., University of Kansas, 1971

WARGO, LINDA

ZAMBO, LESLIE J., Adjunct Professor of Financial Management, 1986

   Ph.D., University of Texas, 1981

ZIRSCHKY, STEPHEN
C. EMERITUS FACULTY

CREIGHTON, JOHN W., Professor Emeritus, 1967
Ph.D., University of Michigan, 1954

KLINE, MELVIN B., Professor Emeritus, 1970
Ph.D., University of California at Los Angeles, 1966

SENGER, JOHN D., Professor Emeritus, 1957
Ph.D., University of Illinois, 1965
III. SUPPORT STAFF

EVANS, JAN, Administrative Officer

BONNEY-BRACEY, BRENTA, Editorial Assistant

BOYLE, LYNN, Education Technician

BURNS, CHAN, Research Technician

HAGA, CHELSEA, Student Aide-Duplication

HARTER, GWEN, TQL Secretary

ISHII, LIANE, Student Aide-TQL

JOYCE, BEVERLY, Typist

KOCHER, KATHY, Labor Economist

LINDSAY, CARYL, Computer Specialist

LONG, EVA, Typist and Library Support

POTTER, MELISSA, Research Associate

ROULEAU, BARBARA, Research Technician

SAHLMAN, LEON, Computer Specialist

SAHIB, HODA, Chair Secretary

SWEENEY, JANE, Procurement

TSUCHIDA, ROSE, Travel Clerk
IV. ADMINISTRATIVE SCIENCES COURSE OFFERINGS
(Extracted from Naval Postgraduate School Catalog, 1991)

Administrative Science Courses

AS1601 TEAM BUILDING SEMINAR: CONTEMPORARY INTERNATIONAL RELATIONS (4-0)
AS1701 COMMUNICATIONS SKILLS FOR INTERNATIONALS: I (4-0)
AS1901 INTRODUCTION TO AMERICAN BUSINESS PRACTICES (4-0)
AS2701 COMMUNICATIONS SKILL FOR INTERNATIONALS: II (4-0)
AS3610 ECONOMIC ANALYSIS AND OPERATIONS RESEARCH (4-0)
AS3611 PLANNING AND CAPITAL ALLOCATION IN THE DEPARTMENT OF DEFENSE (4-1)
AS4613 THEORY OF SYSTEMS ANALYSIS (4-0)

Communications Management Courses

CM0001 SEMINAR FOR TELECOMMUNICATIONS SYSTEMS MANAGEMENT STUDENTS (0-2) (NO CREDIT)
CM0810 THESIS RESEARCH FOR TELECOMMUNICATIONS SYSTEMS MANAGEMENT STUDENTS (0-0)
CM3001 MICROECONOMICS FOR TELECOMMUNICATIONS (4-0)
CM3002 ECONOMIC EVALUATION OF TELECOMMUNICATIONS SYSTEMS (4-0)
CM3112 NAVY TELECOMMUNICATIONS SYSTEMS (4-0)
CM4003 SEMINAR IN TELECOMMUNICATIONS SYSTEMS MANAGEMENT (VARIABLE HOURS 1-0 TO 4-0) (V-0)
CM4925 TELECOMMUNICATIONS SYSTEMS, INDUSTRY AND REGULATION (4-0)

Information Science Courses

IS0001 SEMINAR FOR COMPUTER SYSTEMS MANAGEMENT (NO CREDIT) (0-2)
IS0123 COMPUTER SKILLS DEVELOPMENT (NO CREDIT) (0-2)
IS0810 THESIS RESEARCH FOR COMPUTER SYSTEMS MANAGEMENT STUDENTS (0-0)
IS1004 INTRODUCTION TO PC DATABASE SYSTEMS (0-1)
IS2000 INTRODUCTION TO COMPUTER MANAGEMENT (3-1)
IS3000 DISTRIBUTED COMPUTER SYSTEMS (4-0)
IS3020 SOFTWARE DESIGN (3-2)
IS3100 ANALYSIS OF MICROCOMPUTERS AND MICROPROCESSORS (4-0)
IS3170 ECONOMIC EVALUATION OF INFORMATION SYSTEMS (4-0)
IS3183 MANAGEMENT INFORMATION SYSTEMS (4-0)
IS3220 COMPUTER CENTER MANAGEMENT (3-2)
IS3502 COMPUTER NETWORKS: WIDE AREA/LOCAL AREA (4-0)
IS3503 MICRO-COMPUTER NETWORKS (3-2)
IS4182 INFORMATION SYSTEMS MANAGEMENT (4-0)
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<td>SOFTWARE ENGINEERING AND MANAGEMENT (4-0)</td>
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<td>DATABASE AND INFORMATION RESOURCE MANAGEMENT FOR C3 (4-0)</td>
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<td>MANPOWER/PERSONNEL POLICY ANALYSIS</td>
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<td>MN4110</td>
<td>MULTIVARIATE MANPOWER DATA ANALYSIS I</td>
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<td>TRAINING FOUNDATIONS AND MANAGEMENT</td>
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<td>JOB ANALYSIS AND PERSONNEL TRAINING</td>
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<td>MN4121</td>
<td>ORGANIZATION THEORY</td>
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<td>MN4122</td>
<td>PLANNING AND CONTROL: MEASUREMENT AND EVALUATION</td>
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<td>MN4125</td>
<td>MANAGING PLANNED CHANGE IN COMPLEX ORGANIZATIONS</td>
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<td>MN4127</td>
<td>SEMINAR IN ORGANIZATION BEHAVIOR</td>
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<tr>
<td>MN4145</td>
<td>POLICY ANALYSIS</td>
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<tr>
<td>MN4151</td>
<td>INTERNAL CONTROL AND FINANCIAL AUDITING</td>
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<td>MN4161</td>
<td>MANAGEMENT CONTROL SYSTEM</td>
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<td>MN4162</td>
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<td>MN4163</td>
<td>ANALYTICAL TECHNIQUES FOR FINANCIAL CONTROL AND PLANNING</td>
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<td>MN4301</td>
<td>CONTACTING FOR MAJOR SYSTEMS</td>
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<td>MN4302</td>
<td>PUBLIC EXPENDITURE POLICY AND ANALYSIS</td>
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<td>MN4307</td>
<td>PROGRAM MANAGEMENT POLICY AND CONTROL</td>
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<td>LOGISTICS ENGINEERING</td>
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<td>MN4372</td>
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<td>MN4376</td>
<td>SEMINAR IN MATERIAL LOGISTICS</td>
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<td>MN4500</td>
<td>PRODUCTIVITY ANALYSIS</td>
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<td>THE MILITARY HEALTH CARE DELIVERY SYSTEM AND ANALYSIS</td>
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<td>MN4942</td>
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<td>MN4945</td>
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<td>MN4970</td>
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V. PH.D. PROGRAM

The Department of Administrative Sciences at the Naval Postgraduate School will award the degree of Doctor of Philosophy in Administrative Sciences as a result of meritorious and scholarly achievement in a particular field of administrative sciences (organization and management, integrated logistics and operations management, and information technology. This program includes course work, written and oral examinations, research, and a written dissertation. A candidate must exhibit scholarly application to the entire course of study, achieve a high level of scientific advancement, and establish an ability for original investigation leading to the advancement of fundamental knowledge.

ADMISSION PROCEDURE

A student seeking to become a candidate for this program must present evidence of having obtained a bachelors degree or its equivalent, no particular subject required, and of having excelled in previous academic works. Applicants are asked to provide personal essays; letters of recommendation; and the Graduate Management Admission Test (GMAT) scores or the Graduate Record Examination Test (GRE). Non-native English students must demonstrate proficiency in English.

PROGRAM OF STUDY

Each student's Doctoral Committee to guide the student in designing a program suitable for his/her special interests and background to alert them to opportunities both within the Department of Administrative Sciences and other departments at NPS; and to monitor the student's progress.

Core Program

The doctoral program is based on a core of courses designed to provide the student with the broad knowledge and analytic skills necessary for advanced coursework and dissertation research. The core program develops the basic tools of quantitative methods, economics, management and accounting. Students must also demonstrate competence in computer usage as evidenced by prior coursework [IS0123 Computer Skills Development (4-0) Course equivalent] or experience. In the absence of such work, a student will be required to take core M.S. courses.
The core courses are as follows:

1. Quantitative Methods: Two 4-unit courses (e.g. OS 3101 Statistics Analysis for Management and either OS 3006 Operations Research for Management or OS 3004 Operations Research for Computer Systems Management).

2. Economics: Two 4-unit courses (e.g. MN 2031 Economics Decision Making and MN 3140 Microeconomic Theory).

3. Organization and Management: Two 4-unit courses (e.g. MN 3105 Organization and Management and either MN 4105 Management Policy or MN 4125 Managing Planned Change in Complex Organizations).

4. Accounting and Financial Management: Two 4-unit courses (e.g. MN 2150 Financial Accounting and MN 3161 Managerial Accounting).

5. Two 4-unit research courses will be required. The following courses will be developed as a standard option. However, the student, with the approval of his/her doctoral committee may authorize alternative research courses more suited to the student's research program area.

   MN 4901 RESEARCH THEORY AND METHODS I (4-0)
   MN 4902 RESEARCH THEORY AND METHODS II (4-0)

Students who have taken the equivalent of these courses may waive one or more of these core requirements by the Departmental Ph.D. Committee.

THE DEPARTMENTAL PH.D. COMMITTEE

The Departmental Ph.D. Committee has complete responsibility for the entire doctoral program. It is their duty to make recommendations for admission decisions, administering the preliminary examination, and overseeing the written part of the qualifying examination. The Ph.D. Committee shall monitor the progress of each student to ensure the student is on track towards the degree. Furthermore, the Ph.D. Committee is responsible for providing general guidance on the student's research program to all doctoral students.

A candidate shall apply to the Departmental Ph.D Committee and shall ensure that all transcripts of previous post-secondary education and letters of recommendation are sent to the Committee. The Committee shall then recommend action to the Chairman of the Department of Administrative Sciences, who will formally admit the student into the doctoral program.
THE STUDENT'S DOCTORAL COMMITTEE

Upon recommendation by the Departmental Ph.D. Committee, a Doctoral Committee for the student will be nominated by the Chairman of the Department of Administrative Sciences and approved by the Academic Council as per Academic Council Policy Manual, Section 250. The Committee shall consist of at least five members from three departments. This Committee shall consist of at least three members of the Department of Administrative Sciences and two members from other departments (including a member from the department which will administer the student's minor field of study). At least four members will have earned the doctorate and the Committee may contain no more than two members who have not earned the doctorate. The Chairman of the Department of Administrative Sciences shall designate one of the Administrative Sciences members as Chairman of the Doctoral Committee.

At the time that the above Committee is submitted for approval, or at a subsequent time no later than when the student is advanced to candidacy for the doctorate, the Chairman of the Department of Administrative Sciences shall designate, for the approval of the Academic Council, the member of the Student's Doctoral Committee who shall serve as Dissertation Supervisor. In accordance with Academic Policy Manual, Section 255, the Chairman of the Administrative Sciences Department, shall certify that the Dissertation Supervisor has been selected.

MAJOR AND MINOR FIELDS OF STUDY

Upon admission, a student must indicate a major field of study in economics, financial management, logistics, management or management information systems. The student will be encouraged to select the minor field early in the student's program to ensure the student has adequate time to complete the requirements of the minor field of study and to coordinate the student's research for his minor field of study with his research for his major field of study. The minor field of study which may be in a department other than the Department of Administrative Sciences, such as National Security Affairs, Operations Research; Computer Science; Command, Control and Communications; Electrical and Computer Engineering. The student's selection of a minor field of study must be approved by the Student's Doctoral Committee. The criteria for satisfying the minor requirements are established by the department which offers the minor program.
THE QUALIFYING EXAMINATION

After the student has successfully completed all requirements for the minor field and has essentially completed the major field, the student shall be given a qualifying examination. The qualifying examination will include two parts, a written part and an oral part.

The Departmental Ph.D. Committee will prepare and administer the written part of the examination. The examination will include an in-depth testing of the student's knowledge and understanding of the student's specific field of study and ability to conduct research. The examination will be at least six hours in length and given over a one to two day period. The results will be evaluated by the Department Ph.D. Committee. The Department Ph.D. Committee will recommend the student for either an oral examination, a re-examination of the written part within six months, or the termination of the student's program. The written part of the qualifying examination should be taken by the summer quarter of the student's third year.

The oral portion of the qualifying examination shall be an open examination conducted by the student's entire Doctoral Committee and will only be scheduled upon the student's successful completion of the written part. Additionally, the Academic Council and members of the Department of Administrative Sciences and the minor department will be invited. The oral examination shall be given as soon as possible, normally within one month after successful passage of the written part of the qualifying examination. The oral part of the qualifying examination must be successfully completed with four and a half years after the date of entry into the program.

The successful passage of both the oral portions of the qualifying examination requires the unanimous vote of the Student's Doctoral Committee. The results of the entire qualifying examination shall be reported to the Dean of Instruction within two weeks after the scheduled date of the oral examination. If the student does not successfully pass the qualifying examination on the first try, the student may petition his/her Doctoral Committee to take the examination a second time.

DISSERTATION RESEARCH

The dissertation culminates the student's academic endeavors. Working closely with faculty members from his/her committee during all phases of preparation, the student is expected to present a dissertation of substantial
The dissertation should make a significant contribution to the advancement of knowledge in the chosen field of study. It should be of sufficient originality and quality to merit publication, either in whole or in part, in a professional journal. It is the student's responsibility to identify a Dissertation Supervisor and begin research as soon as possible. The student's Dissertation Supervisor shall be a member, but not necessarily the chairman, of the student's Doctoral Committee.

ADVANCEMENT TO CANDIDACY

The student's Doctoral Committee shall recommend that the Academic Council advance the student to candidacy after the completion of the following requirements:

a. The student's Doctoral Committee is approved by the Academic Council.
b. The student's Dissertation Supervisor is approved by the Academic Council.
c. The requirements for the minor are successfully completed.
d. The successful passage of the qualifying examination.
e. The proposed dissertation subject is approved by the student's Doctoral Committee.

THE DISSERTATION DEFENSE

The dissertation shall be defended at a final oral examination no sooner than six months after the advancement to candidacy and no earlier than one week after submission and acceptance of a draft of the student's dissertation by the student's Doctoral Committee. The Doctoral Committee shall schedule the final oral examination and invite members of the Academic Council, the Department of Administrative Sciences, and other interested members of the academic community to attend. While any interested faculty member may attend the examination and participate in the discussion, only those individuals who are members of the student's Doctoral Committee can vote on the dissertation. The examination will be conducted by the Chairman of the student's Doctoral Committee, and will consist of a presentation and defense of the dissertation. Successful passage of the examination requires a unanimous vote of the student's Doctoral Committee.
The results of the examination shall be reported to the Dean of Academic Administration not later than two weeks after the scheduled date of the examination. A student that fails the final oral examination may petition his/her Doctoral Committee for at most one re-examination.

TIME LIMIT

The student must complete all degree requirements, including the writing and successful defense of the dissertation within five years after advancement to candidacy or six and a half years from the date of entry into the program.
VI. FACULTY CONTRIBUTIONS TO PH.D. PROGRAMS

T.K. Abdel-Hamid

1981-83 MIT
- taught courses in Management of Information Technologies
- member of 2 dissertation committees

D.C. Boger
- present
- Served on Academic Council's Doctoral Committee for A.S.
- prepared and graded doctoral examinations
- member of 4 dissertation committees
- chaired of C3AG Doctoral Committee
- supervised 4 students in C3 minor

T.X. Bui

1988-90 University of Fribourg, Switzerland
- taught courses in systems analysis and design
- prepare and graded doctoral examinations
- member of 3 dissertation committees
- chaired 1 dissertation committee

D.R. Dolk

1989-present NPS
1990 Dalhousie University (external member)
- member of 2 dissertation committees
Evered
1970-80 University of California at Los Angeles
    University of Illinois
    Penn State University
    - taught courses in Organization and Management
    - prepared and graded doctoral examinations
    - member of 20 dissertation committees

W. Haga
1971-72 University of Illinois
    - Chaired committee that prepared doctoral preliminary examinations

D. Henderson
1975-79 University of Rochester, Graduate School of Management.
    - taught Economics courses
    - prepared and graded doctoral examinations
    - served on 3 dissertation committees

C. R. Jones
1970- present NPS
    - taught courses in Economics
    - prepared and graded doctoral examinations
    - member of 5 dissertation committees
    - chaired 1 dissertation committee

L. Jones
1979-85 University of Oregon
    - taught courses in business
    - prepared and graded dissertation examinations
    - member of 8 dissertation committees
    - chaired 2 dissertation committees
S.S. Liao
1974-1977 University of New York - Buffalo
- taught courses in accounting
- prepared and graded doctoral examinations

D. Lamm
1986-88 Golden State University
- member of 1 dissertation committee
- chaired 1 dissertation committee

A.W. McMasters
1968-1974 NPS
- taught courses in Operations Research and Operations Analysis
- prepared and graded doctoral examinations
- member of 5 dissertation committees

S. Mehay
1982-83 University of Oregon
1975-77 Concordia University in Montreal
- taught courses in Public Finance
- prepared and graded doctoral examinations
- member of 5 dissertation committees
- chaired 2 dissertation committees

B.J. Roberts
1977-81 The University of Florida
- taught courses in Social Psychology and Industrial/Organizational Psychology
- prepare and graded doctoral examinations
- served on 15 dissertation committees
N.C. Roberts

1982-85  University of Minnesota, School of Business.
- taught courses in Theory Construction
- member of 1 dissertation committee
- chaired 1 dissertation committee

J. San Miguel

1975-81  Harvard Business School
1972-74  New York University
- taught courses in accounting and administrative systems
- prepared and graded doctoral examinations for:
  - the Administrative point of view committee 1974-81 at HBS
  - the Doctoral examinations in Accounting, Planning, and Accountability Systems committee 1977-81 at HBS
  - the Field Exams in Accounting 1972-74 at NYU
- member of 6 dissertation committees
- co-chaired 1 dissertation committee

N.F. Schneidewind
- present  NPS
- taught operations research and computer networking courses
- prepared and graded minor in exam in IS
- member of 1 dissertation committee

K. Sengupta

1988  Case Western Reserve University
- helped design and taught course in Management Information Systems

J. Suchan

1984-85  University of Alabama
- prepared and graded doctoral examinations
M. Suh

1987-88 University of Rochester
- taught courses in Mathematical Statistics

K.W. Thomas

1969-86 University of California at Los Angeles
   Temple University
   University of Pittsburgh

- extensive teaching in experience in Organization and Management
- prepared and graded doctoral examinations
- member of 15 dissertation committees
- chaired 4 dissertation committees
- Extensive administrative experience

* Director of Ph.D. program at University of Pittsburgh 1984-86
* Member of Departmental Ph.D. Admissions Committee at UCLA
* Member of Ph.D. Admissions Committee at University of Pittsburgh
* Chairman of Ph.D. Policy Committee for Department of Industrial Relations and Organization Behavior, 1978-81
* Member of Internal Evaluation Committee for Ph.D. Program at Temple University, 1980-81
* Chairman of Doctoral Research Paper Review Committee, Graduate School of Management, UCLA, 1973-74
R. Weitzman

1962-71 University of Southern California

- taught many doctoral courses
- prepared and graded doctoral examinations
- member of several dissertation committees
- chaired 6 dissertation committees

M. Zviran

1988 Tel Aviv University

- prepared and graded doctoral examinations
VII. ADMINISTRATIVE SCIENCES LABORATORIES

The Department of Administrative Sciences and NPS provide several computing resources to support research by Ph.D. candidates. These resources include:

- the NPS mainframe computer;
- three micro-computer laboratories with local area networks dedicated to the Department of Administrative Science for instructional and research purposes;
- links to other data centers and computers through several networks such as DDN INTERNET, BITNET and the MILNET;
- specialized software to conduct research and development of expert systems, decision support systems, statistical analysis and database management systems;

In addition to the above computing resources, the NPS Mail Library with its vast inter-library loan system currently available to NPS students and faculty will provide outstanding support for Ph.D. candidates in Administrative Sciences. In addition to the Main Library, the Computer Center provides an excellent technical library. The current selection of books and journals already on campus will provide the Ph.D. candidate with ample material to support research in all areas of Administrative Sciences. The Department of Administrative Sciences will work in cooperation with the Main Library to ensure continued acquisition of vital research material to maintain suitability for the Administrative Sciences Ph.D. program.
VIII. PRINCIPAL AREAS OF RESEARCH

Acquisition

D.C. Boger
S.S. Laio
O.D. Moses
W. Gates

Logistics and Transportation

A.W. McMasters
D. Trietsch
T.P. Moore

Computers, Information, and Communication systems

T.X. Bui
M. Zviran
W. Haga
K. Sengupta
T. K. Abdel-Hamid
M. Suh
N.F. Schneidewind
D.J. Dolk
D.R. Henderson
M.N. Kamel
M. Zviran
B. Frew

Financial Management

K. Euske
L.R. Jones
J. McCaffery
J. San Miguel
Manpower, Personnel, and Training analysis,

A. Crawford  
L. Solnick  
S. Mehay  
D. Henderson  
K.W. Thomas  
B.J. Roberts  
M. Eitelberg  
G.W. Thomas  
L. Gorman  
T.P. Moore  
K. Kocher  
L. Johnson  
R. Elster

Policy Analysis and Management.

N.C. Roberts  
G.F. Thomas  
W. Gates  
K. Terasawa  
J. Suchan  
San Miguel  
D.R. Henderson  
K.W. Thomas  
B.J. Roberts
## IX. FACULTY RESEARCH SUMMARY FOR 1989

<table>
<thead>
<tr>
<th>Title</th>
<th>Principle Investigator</th>
<th>Sponsor</th>
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</thead>
<tbody>
<tr>
<td>ENHANCING THE PORTABILITY OF QUANTITATIVE SOFTWARE ESTIMATION MODELS</td>
<td>T.K. Abdel-Hamid</td>
<td>NPS Research Council</td>
</tr>
<tr>
<td>INVESTIGATING THE INCORPORATION OF EXPERT SYSTEMS TECHNOLOGY INTO SYSTEM DYNAMICS SIMULATION MODELING</td>
<td>Abdel-Hamid</td>
<td>NPS Research Council</td>
</tr>
<tr>
<td>INCORPORATING EXPERT SYSTEMS TECHNOLOGY INTO A SYSTEM DYNAMICS COST ESTIMATION MODEL FOR SOFTWARE DEVELOPMENT</td>
<td>Abdel-Hamid</td>
<td>Naval Center for Cost Analysis</td>
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<tr>
<td>ANALYSIS OF THE MANAGEMENT CONTROL AND INFORMATION SYSTEM IMPLICATIONS OF RAMP</td>
<td>Dolk</td>
<td>NAVSUP</td>
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<td></td>
<td>Euske</td>
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<td>A DECISION SUPPORT SYSTEM FOR EMERGENCY COMMUNICATIONS</td>
<td>Dolk</td>
<td>National Communications Systems</td>
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<td>Frew</td>
<td></td>
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<tr>
<td>THE EFFECTS OF DIFFERENT PERSONNEL PROCUREMENT SYSTEMS ON DEFENSE MANPOWER QUALITY</td>
<td>Eitelberg</td>
<td>Office of the Assistant Secretary of Defense</td>
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<tr>
<td>DESIGN AND EVALUATION OF MANAGEMENT SYSTEMS FOR NAVAL INDUSTRIAL IMPROVEMENT</td>
<td>Evered</td>
<td>Under Secretary of the Navy,Naval Industrial Improvement Program</td>
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<tr>
<td></td>
<td>San Miguel</td>
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<tr>
<td>DATA COMMUNICATIONS SUPPORT Command</td>
<td>Frew</td>
<td>Naval Data Automation</td>
</tr>
<tr>
<td>Title</td>
<td>Author(s)</td>
<td>Institution</td>
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<tr>
<td>A MODEL OF THE PRINCIPAL AGENT RELATIONSHIP IN THE DEPARTMENT OF DEFENSE ACQUISITION PROCESS</td>
<td>Gates</td>
<td>NPS Research Council</td>
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<tr>
<td>ASSESSING THE EFFECTIVENESS OF OFFICE AUTOMATION: SACONS IN THE NAVY</td>
<td>Haga / Davis / Murphy</td>
<td>None</td>
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<tr>
<td>PERSONALITY TYPE AND COMPUTER USAGE</td>
<td>Haga</td>
<td>None</td>
</tr>
<tr>
<td>INFORMATION SYSTEM EFFECTIVENESS: RESEARCH DESIGNS FOR CASUAL INFERENCE</td>
<td>Haga / Zviran / Mustofa</td>
<td>None</td>
</tr>
<tr>
<td>COGNITIVE PASSWORDS</td>
<td>Zviran / Haga / Huisey</td>
<td>NPS Research Council</td>
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<tr>
<td>AN ECONOMIC ANALYSIS OF NATIONAL SERVICE</td>
<td>Henderson</td>
<td>Deputy Chief of Naval Operations</td>
</tr>
<tr>
<td>HOW TO ACCOUNT FOR INFLATION WHEN TAKING PRESENT VALUES</td>
<td>Henderson</td>
<td>Deputy Chief of Naval Operations</td>
</tr>
<tr>
<td>THE PERVERSE EFFECTS OF VARIABLE OIL IMPORT FEE</td>
<td>Henderson</td>
<td>None</td>
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<tr>
<td>ARE WE ALL SUPPLY-SIDERS NOW? THE EMERGING CONSENSUS ON MARGINAL TAX RATES</td>
<td>Henderson</td>
<td>None</td>
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<tr>
<td>THE SUPPLY-SIDE TAX REVENUE EFFECTS OF THE CHILD-CARE TAX</td>
<td>Henderson</td>
<td>None</td>
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<td>AN EMPirical STUDY OF VIEW MATERIALIZATION STRATEGIES</td>
<td>Kamel</td>
<td>NPS Research Council</td>
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<tr>
<td>ANALYSIS OF FINANCIAL MANAGEMENT ISSUES AT THE FLEET LEVEL</td>
<td>L.R. Jones / Euske</td>
<td>Commander Naval Air Force, U.S. Pacific Fleet</td>
</tr>
<tr>
<td>Topic</td>
<td>Author(s)</td>
<td>Affiliation</td>
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<tr>
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<tr>
<td>CONGRESSIONAL CONTROL OF NAVY BUDGET EXECUTION</td>
<td>L.R. Jones</td>
<td>Office of the Comptroller, Office of Budgets and Reports (NCB-1) DON</td>
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<tr>
<td>BUDGETING AND ACCOUNTING AT THE CINCPACFLT LEVEL</td>
<td>J. L. McCaffery / Euske</td>
<td>Comptroller, CINCPACFLT</td>
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<tr>
<td>RESYSTEMIZATION MODELING SUPPORT</td>
<td>McMasters</td>
<td>Navy Fleet Material Support</td>
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<tr>
<td>STOCK POINT EXPERT SYSTEMS</td>
<td>McMasters</td>
<td>NAVSUP</td>
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<tr>
<td>ARMY RESERVE MIGRATION PROJECT</td>
<td>Mehay</td>
<td>U.S. Army Recruiting Command, Program Analysis and Evaluation Directorate</td>
</tr>
<tr>
<td>ARMY RECRUITING IN THE 21ST CENTURY</td>
<td>Mehay / Eitelberg</td>
<td>Army Recruiting Command, Program Analysis and Evaluation Directorate</td>
</tr>
<tr>
<td>SOFTWARE FOR U.S. ARMY TOE RESILIENCY SCREENING</td>
<td>Moore</td>
<td>U.S. Army Combat Developments Experimentation Center</td>
</tr>
<tr>
<td>ESTIMATING AND EXPLAINING THE COST OF HIGH-TECHNOLOGY SYSTEMS</td>
<td>Moses</td>
<td>Naval Sea Systems Command, Cost Estimating and Analysis Division</td>
</tr>
<tr>
<td>SOFTWARE PRODUCTIVITY ENHANCEMENT STUDY</td>
<td>Schneidewind / Abdel-Hamid</td>
<td>NAVMASSO</td>
</tr>
<tr>
<td>SOETT'ARE QUALITY METRICS</td>
<td>Schneidewind</td>
<td>IEEE Computer Society Standards Activity Board</td>
</tr>
<tr>
<td>DISTRIBUTED SYSTEM SOFTWARE DESIGN PARADIGM AND INTERNETWORKING</td>
<td>Schneidewind</td>
<td>None</td>
</tr>
<tr>
<td>Title</td>
<td>Authors</td>
<td>Institution/Department</td>
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<tr>
<td>ANALYSIS OF FIELD AGENTS WRITTEN COMMUNICATION SKILLS</td>
<td>Suchan</td>
<td>Defense Personnel Security Research and Education Center</td>
</tr>
<tr>
<td>USAR NURSE RETENTION/ATTRITION STUDY</td>
<td>G. W. Thomas / B. J. Roberts / Moore /</td>
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Abdel-Hamid

Naval Center for Cost Analysis

IMPACT OF COMPETITION ON WEAPON SYSTEM ACQUISITION

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Naval Center for Cost Analysis

DATA AND METHODS FOR ESTIMATING COSTS OF AIRCRAFT MODIFICATIONS AND ALTERNATIVES

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