January 1987

RESUME

RESEARCH and EDUCATION

A
# Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>78</td>
<td>Dr. Maria Zamir, Ph.D., Asst. Professor</td>
</tr>
<tr>
<td>73</td>
<td>Dr. David A. Schmidt, Asst. Professor</td>
</tr>
<tr>
<td>71</td>
<td>Dr. Thomas Pittman, Asst. Professor</td>
</tr>
<tr>
<td>69</td>
<td>Dr. Austin C. Melton, Asst. Professor</td>
</tr>
<tr>
<td>65</td>
<td>Dr. Rabindra A. Mukherjee, Asst. Professor</td>
</tr>
<tr>
<td>63</td>
<td>Dr. David A. Gossip, Asst. Professor</td>
</tr>
<tr>
<td>61</td>
<td>Dr. Matthew Van Swaay, Asst. Professor</td>
</tr>
<tr>
<td>55</td>
<td>Dr. Myron A. Calhoun, Asst. Professor</td>
</tr>
<tr>
<td>51</td>
<td>Dr. Virgil B. Wallis, Professor and Head</td>
</tr>
<tr>
<td>49</td>
<td>Dr. Elizabeth A. Unger, Professor</td>
</tr>
<tr>
<td>45</td>
<td>Dr. William J. Hanks, Professor</td>
</tr>
<tr>
<td>41</td>
<td>Dr. Paul S. Fisher, Professor</td>
</tr>
<tr>
<td>37</td>
<td>Faculty Resume</td>
</tr>
<tr>
<td>32</td>
<td>Doctor of Philosophy Degree</td>
</tr>
<tr>
<td>22</td>
<td>Master's Degree Requirements</td>
</tr>
<tr>
<td>16</td>
<td>Undergraduate Requirements</td>
</tr>
<tr>
<td>9</td>
<td>Computing Resources</td>
</tr>
<tr>
<td>5</td>
<td>Research</td>
</tr>
<tr>
<td>3</td>
<td>Introduction</td>
</tr>
</tbody>
</table>
provide national standards and deluxe accommodations for visitors.

The site, Highway 70, 7 miles south of the city. Popular models are located in the city and
midwest and central of Kansas City, Missouri. Airport is by car, Inter-
From the historic military reservation of Fort Riley, access to Manhattan may be by Air.

The 13-acre campus is located at Manhattan, Kansas, a city of 30,000 people. The

Nuclear Engineering Department operates a TRIGA MARK II nuclear reactor.

Engineering is one of the major facilities for accelerating advance particles. The

University operates one of the most advanced programs in cooperation with the Atomic Energy Commission. The

Training and Research Programs. In cooperation with the Atomic Energy Commission, the

research on more than 7000 acres of crop and grass lands in support of the University’s

Division of Continuing Education extends educational services to more than 10,000 of campus students. The K-State Agri-

cultural Experiment Station conducts research on more than 7000 acres of crop and grass lands in support of the University’s

Doctor of Veterinary Medicine. There are 6 academic departments on the campus and a

Doctor of Philosophy in 33 fields of study including Regional/Community Planning, and Doctor of

Pharmacy/Medicine, Business Administration, landscape Architecture, Music, and


The University awards degrees of Bachelor of Arts, Science, Architecture, Music and

Seek degrees in the discipline of the applied sciences.

American, K-State is fully accredited by the North Central Association of Colleges.

Launched primarily as an agricultural school, K-State has evolved into an important

KANSAS STATE UNIVERSITY

Resume

A

INTRODUCTION

- 3 -
In August 1985, the department moved to new facilities in Richards Hall. This has enabled us to expand our computing systems. Our research activities have been oriented toward practical applied science, and our faculty is engaged in formal research as well. The department has been awarded several grants, and our faculty has published extensively in the field.

The program in Computer Science is offered jointly by CSS and the University at Buffalo. It offers both undergraduate and graduate degrees. In addition, 15 full-time faculty and 45 graduate assistants are employed.

The Department of Computing and Information Sciences
The department's capabilities to support research are growing each year. The scope of

Theoretical

Computing Faculty and the University Library.

Research is conducted primarily by faculty members assisted by graduate students,

Copyright and Information Sciences Department Computer Laboratory, the University of Kansas

and support in the form of graduate assistants.

The department offers a strong graduate emphasis in the area of

Computing and Information Sciences Department, KSU

Research
The peripheral equipment includes:

- 4K bytes
- 320K bytes
- 96K bytes
- 64K bytes
- 8K bytes
- Each
- Each
- Each
- 200 ports
- Each 4 megs bytes

The University lab includes:

- IBM 50 compatible, UNIX 7.1/780 running UNIX (V.2)
- Minicom I/O
- Apple Macintosh + AppleTalk
- Ethernet Local Area Network
- VAX 11/780 running UNIX (Berkeley)
- Apple products, PC's
- Ethernet Local Area Network
- 20 megs bytes
- 30 megs bytes
- Each 4 megs bytes
- Each 4 megs bytes
- Each 4 megs bytes
- Each 4 megs bytes

The Computing Laboratory in the Department of Computing and Information Sciences

The Computing Laboratory is a facility of the Department of Computing and Information Sciences.

The Computer Science Department has been established in 1975 within the University's Computing Center. The University's Computing Center was established in 1975 within the University's Computing Center. From the day of its inception, the computing and information science department's computing laboratory, almost 500 computers and software, include the University's Computing Center, and computer science facilities.

Appendix 1

Computing Resources at Kansas State University

- 1 MEG bytes
- 10 megs bytes
- Each 4 megs bytes
Science Computing Laboratory includes:

More than 150 unique software systems are available in the Computing and Information

The full set of the common high-level languages is available to KSU users as are numerous
applications program packages.

Through dial-up telephone service, the University of Kansas main computer is
available. The main computer is a Honeywell DP 3/E with 768K (words) of memory.

Remote Facilities

The center operates an IBM 4341 to support the University administrative data require-
cements. This facility is available to support computer science needs on an infrequent basis.

The computer support computing requirements of these departments and
college engineering. The computer supports include computing, psychology, biology, chemistry;
the Department of Electrical Engineering, Physics and several PDP microcomputers in the
Other University Facilities at K-State include several NOVA computers and a VAX in

<table>
<thead>
<tr>
<th>Application</th>
<th>MFP/360</th>
<th>FULLEX</th>
<th>MEATLER</th>
<th>MPR</th>
<th>SURFACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORTRAN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COBOL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL/C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PASCAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FORTRAN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COBOL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL/I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PASCAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Languages
been advised. You need to return it to the CS office – Nichols Hall 234 – after you have
seen your advisor. Please return it to the CS office and take the updated version with you when
you pick up your enrollment permit and take the updated version with you when
your folder in the CS office for your use during advising. Please update your guide form
with the completed sheets. An up-to-date copy of the curriculum guide should be kept in
the Curriculum Guide.

Guide to Requirements

MAJORS IN COMPUTER SCIENCE & INFORMATION SYSTEMS

FOR

KANSAS STATE UNIVERSITY

- 6 -
<table>
<thead>
<tr>
<th>Courses for Computer Science Major</th>
<th>Courses for Information Systems Major</th>
<th>Basic Requirements For Both Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>App. Matrix Theory M551 3</td>
<td>Systems Analysis CS567 3</td>
<td>Concepts PE 1</td>
</tr>
<tr>
<td>Numerical Comp CS588 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Courses for BOTH Majors

<table>
<thead>
<tr>
<th>Fund. of Computer Programming CMPSC 200 2</th>
<th>Humanities 4 Courses 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>PASCAL Language Laboratory CMPSC 207 2</td>
<td>1. Fine Arts</td>
</tr>
<tr>
<td>Intro. to Computer Engineering EECE 241 3</td>
<td>2. Philosophy</td>
</tr>
<tr>
<td>Algorithmic Processes CMPSC 300 3</td>
<td>3. Western Heritage</td>
</tr>
<tr>
<td>Computer Organization &amp; Prog IA CMPSC 305 3</td>
<td>4. Literary or Rhetorical Arts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>or Computer Organization &amp; Prog IB CMPSC 307 3</th>
<th>Social Sciences 4 Courses 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematical Found. of Compt. Sc CMPSC 370 3</td>
<td>1.</td>
</tr>
<tr>
<td>Intro. to Programming Languages CMPSC 405 3</td>
<td>2.</td>
</tr>
<tr>
<td>Operating Systems I CMPSC 420 3</td>
<td>3.</td>
</tr>
<tr>
<td>Data Structures CMPSC 469 3</td>
<td>4.</td>
</tr>
<tr>
<td>Software Engineering Project I CMPSC 540 3</td>
<td></td>
</tr>
<tr>
<td>Software Engineering Project II CMPSC 541 3</td>
<td></td>
</tr>
<tr>
<td>Intro. to Data Management Systems CMPSC 561 3</td>
<td></td>
</tr>
</tbody>
</table>

**Plus 15 hrs technical electives approved by advisor**

1. _____________________________

2. _____________________________

3. _____________________________

4. _____________________________

5. _____________________________

6. _____________________________

7. _____________________________

Courses for BA Degree

<table>
<thead>
<tr>
<th>Humanities 4 Courses 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Life Science w/ Lab</td>
</tr>
<tr>
<td>2. Physical Science w/ Lab</td>
</tr>
<tr>
<td>3. Life or Physical Science</td>
</tr>
</tbody>
</table>

Courses for BS Degree

<table>
<thead>
<tr>
<th>Humanities 4 Courses 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Life Science w/ Lab</td>
</tr>
<tr>
<td>2. Physical Science w/ Lab</td>
</tr>
<tr>
<td>3. Life or Physical Science</td>
</tr>
</tbody>
</table>

Note: Quantitative requirements are met by majoring in CS or IS.
4. Mini/Micro Computer Systems

3. Scientific Computing Electives

2. Computer Software Electives (also the core of the MS program)

1. Business Electives

Areas of Technical Electives (Examples)
LIST OF COURSES THAT FULLY FULFILL REQUIREMENTS

1. English Composition I, English Composition II
2. American Literature or American History
3. Scientific Inquiry (300-level or higher)
4. Natural Science (Physics or Chemistry)
5. Social Science (Sociology or Economics)
6. Computer Science I or II
7. U.S. History or World History
8. Foreign Language (2 semesters or higher)
9. Mathematics (Beyond Algebra)
10. Physical Education (3 semesters)

Students must complete a minimum of 120 credits.

As of August, 1986
International Overviews

Any other general education requirement must satisfy this educational requirement as well.

Mathematics I: How BA Degrees Only
Foreign Language: 4 Courses (150 credits)

Computer Science and Programming Processes 300

705

Methods for Social Science 703


Intermediate, Calculus and Analytic

1-2,272

Pre-Calculus and Calculus I, II, Analytical

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus

2-2,272

Mathematics I, II, III (300 credits)

Mathematics I, II, III (300 credits)

Intermediate Calculus

1,280

Intermediate Calculus
GRADUATE STUDIES COMMITTEE

JANUARY 1987

KANSAS STATE UNIVERSITY

INFORMATION SCIENCES

DEPARTMENT OF COMPUTER AND

IN THE

MASTER OF SCIENCE DEGREE

FOR THE

GUIDELINES

- 16 -
The 1976 WACAC report, "Writing in the Disciplines," emphasized the importance of writing as a form of communication and recommended that students be encouraged to write extensively in their coursework. This reflected the growing recognition that writing is not only a means of conveying ideas but also a means of developing critical thinking and problem-solving skills.

The report also highlighted the need for faculty to provide clear and coherent feedback on students' writing, to help them improve their skills. It recommended that writing be integrated into all aspects of the curriculum, not just in English courses, but in all disciplines.

One of the key recommendations of the report was the establishment of writing centers on college campuses, where students could receive individualized assistance with their writing. These centers were seen as crucial for helping students develop their writing skills and for creating a culture of writing on campus.

The 1976 WACAC report was significant because it helped to raise the profile of writing as an essential skill for all students, and it contributed to the development of the field of writing studies as an academic discipline. It also influenced the development of standards and guidelines for writing programs in higher education, which continue to be used today.
Study is formulated. The proposal for the Program is submitted to the Program Committee. The student should present a written proposal to the Program Committee, which must be approved by the Program Committee. The Program of Study must be approved by the Program Committee and submitted to the Graduate School. The Program of Study specifies the credit hours the student must complete, the student's major or concentration, and the acceptable courses for the Program.
The Graduate School requires the submission of three copies of the report of thesis, two of which are returned and made available in the Library. For option (3), the student must

three weeks before graduation.

These weeks prior to graduation, the oral examination must be completed approximately one

month before graduation. The oral examination is due in the Graduate Office approximately two months

prior to graduation. Approved forms are due in the Graduate Office approximately six

weeks before graduation. Approved forms are due in the Graduate Office approximately two months

prior to graduation. Approved forms are due in the Graduate Office approximately two months

prior to graduation. Approved forms are due in the Graduate Office approximately two months

prior to graduation.

If the student chooses either the thesis or report options (1) or (2)), the thesis or report

To achieve these requirements, a student (in consultation with the Supervisory Committee) is required to contribute to a refereed conference or journal.

(3) A publishable paper, which is submitted to a refereed conference or journal.

(2) An M.S. report for two semester hours of credit.

(1) An M.S. thesis for three to six semester hours of credit.

The writing component is satisfied by one of the following:

(c) the public domain, and be well documented.

(e) validated work experience. All work presented for validation must be in

(f) successful completion of the course CMPS 690, Implementation Projects.

(g) efforts which yield new research results or a significant implementation pro-

The implementation component is satisfied by one of the following:

(h) a computer science course as a prerequisite.

(i) an advanced level computer science course which has a 700-level computer

These types of courses are called the "core courses." In addition, a student must com-

A student must earn a grade of B or better in CMPS 671, 720, 740, and 761.

C. Specific requirements for the M.S. degree:

CMPS 671 Graduate Seminar (1) credit hours
CMPS 714 Database Management Systems (3) credit hours, Prereg: 561
CMPS 740 Operating Systems II (3) credit hours, Prereg: 470
CMPS 720 Operating Systems I (3) credit hours, Prereg: 405, 305
CMPS 700 Translator Design I (3) credit hours, Prereg: 470
CMPS 671 Programming Practice (3) credit hours
The second semester in attendance:
- completion of three core courses (CENG 611, 740, 720, 761) by the end of the first year;
- a class load of at least 9 credit hours per semester;

By the end of the second semester in attendance:
- a major professor selected and a program of study filed with the Graduate School;
- a grade point average that is 3.00 or more.

D. Normal Progress is considered to be the following:
Each semester of enrollment, a student must make normal progress towards the degree. A student can either pass or fail the oral exam, subject to a vote by the supervisory committee at least one week in advance of the scheduled examination. The student must distribute a copy of his writings to each member of the supervisory committee at least one month prior to graduation. The examination consists of a presentation of the student's work and a defense of the student's scholarly effort. The supervisory committee may also request additional information to be provided. When all the course work has been completed and the requirements for the program have been met, the student may request the Committee on Graduate Study to schedule the final oral examination and must then inform the Graduate School of the time and place of the examination. The examination is normally scheduled approximately one week in advance of the oral examination. A copy of the final examination paper, which is archived in the departmental library.