KANSAS STATE UNIVERSITY

1991 GUIDE TO REQUIREMENTS

FOR

MAJORS IN COMPUTER SCIENCE & INFORMATION SYSTEMS

To major in computer science or information systems you must meet the general requirements of the University, the requirements of the College of Arts and Sciences, and the requirements of the Department of Computing and Information Sciences (all of which are listed in the General Catalog). The requirements for the BS and BA degrees are outlined on the sample curriculum guide check sheets. An up-to-date copy of the curriculum guide should be kept in your folder in the CIS office for your use during advising. Please update your guide form when you pick up your enrollment permit and take the updated version with you when you see your advisor. Please return it to the CIS office - Nichols Hall 234 - after you have been advised.
ENGLISH COMPOSITION I & II
PUBLIC SPEAKING (or Argumentation & Debate)
PRINCIPLES OF PHYSICAL FITNESS

HUMANITIES: 4 courses, 11 hrs. minimum. One course from each of the 4 areas. They may be used at the same time to count toward the major. No course may be used to satisfy more than one specific requirement in this section. Only courses taken for two or more credit hours satisfy these requirements.

1. FINE ARTS: 1 course
   Anthropology--Creativity & Culture 515, Afro-American Music & Culture 517
   Art technique courses 200-799, art history 195 & 196, Intro to Museum Studies 305, Computer Imaging Art 400
   Dance courses 205, 323, 324, 325, 326, or 371
   History of Dance--HIST 459
   *Music--200, 201, 245, 250, 255, 280, 310, 385, 420, 424, 455, 480, 570, 601, 602, or 650
   Theatre courses 260-799

2. PHILOSOPHY: 1 course
   Except Logic courses--110, 220, and 510

3. WESTERN HERITAGE: 1 course
   *History courses in Greco-Roman, Western European or North American experience
   Constitutional Law Courses--POLSC 513, 614, 615, 616, 799
   Women's Studies--DAS 105, 405, 506
   American Ethnic Studies--DAS 160
   Political Thought Courses--POLSC 301, 661, 663, 667, 671, 675, or SOCIO 709
   Humanities Courses--ENGL 230, 231, 233, 234
   Modern Language Courses--FREN 514, GRMN 530
   SPAN 565, SPAN 566
   Music - Intro to American Music 245
   Speech - Rhetoric of the Sixties 460

4. LITERARY OR RHETORICAL ARTS: 1 course
   *English courses in literature or creative writing 250-799 except 301, 400, 401, 405, 415, 490, 492, 499, 520, 516, 530, 796
   *Modern Language literature courses, including literature in translation
   Theatre courses 562, 764
   Speech 330, 335, 430, 432, 434, 460, 725, 730, 732, or 733
   BS Degree only: Levels I & II in the same foreign language will satisfy Western Heritage and the Literary and Rhetorical Arts requirements.

SOCIAL SCIENCES: 4 courses from 3 disciplines, 12 hrs. minimum.
Up to 2 courses from a single dept. may be used to fulfill the distribution requirements set forth in this section. They may be used at the same time to count toward the major. One course must be 500-799 level or carry a prereq in same dept.
At least 3 of the 4 courses must be from:
   Psychology, Sociology, Cultural Anthropology, (including Archaeology), Geography (except Environmental I & II (220 & 221), Economics, Political Science, History
The 4th course can be from one of the above or from the following:
   Women's Studies--DAS 105, 405, or 506
   Gerontology--DAS 315, 415
   Speech--323, 435, 520, 720, 726; Linguistics except Gen. Phonetics 601
   Radio-Television--Radio-TV & Society 300, Hist Telecomm, 660 or RTV Crit, 675
   Physical Education--Motor Dev & Learn 320, Soc. Dimen. 340, or Sport & Contemp Society 435
   Anthropology -- Pro-Seminar in Appl. Anth 640

NATURAL SCIENCES:
BS Degree: 4 courses/14 hr. min.
BA Degree--3 courses/11 hr. min.
Courses that fulfill this requirement may be used at the same time to count toward the major. No courses may be used to satisfy more than 1 specific requirement in this section. Only courses taken for 2 or more credit hours satisfy these requirements & courses in excess of 5 cr. hr. count as 2 courses.
1. A Life Science with Lab
2. A Physical Science with Lab
3. A Life or Physical Science

Life Sciences: Biology, Biochem., Paleobiology
   (Geol) 581 or 704, Intro. Physical Anthro. 280, 281, Paleoanthro. 688, Primatology 691,
   Osteology 694, Osteology Lab 695
Physical Sciences: Physics, Chemistry, Envr.
   Geog I & II (220 & 221) ONLY; Geol except Paleobiology 581, Paleoecology 704
4. BS Degree only: 1 course (3 cr. hr. min.) with a prereq. in the same dept chosen from the following: Life or Phys. Sci. listed in #3, Biochem courses with chem. prereq, PE-330 Kinesiology, Physio. of Exercise 335, Psych.-Psychobiol. 470, Fund. of Percep. & Sensation 480

*Courses listed on following pages.
QUANTITATIVE & ABSTRACT FORMAL REASONING:

BS DEGREE ONLY
Courses used for this requirement may also satisfy any major requirement for which it qualifies. Select one of the following three options:
1. Three courses from: Math, Stat, Logic (Philo), Computer Sci (note: CIS 200 requires lab 203 and is equivalent to one required course)
2. One of the following pairs:
   - Quant Analysis in Geog. 700 & Stat I level course
   - Meas & Eval in PE 710 & Stat. I level course
   - General Physics I 113 & Trig. 150
   - Intermed. Quant Meth 725 & Stat. I level course
   - Meth in Social Work Res 519 & Stat I level course
3. Level II: 2 courses
   Computer Science--Fund of Comp. Prog. 200 & lab 203 (to count as one course)
   Math--Plane Trig. 150, Applied Math 201, General Calc. & Lin. Algebra 205
   Philosophy--Symbolic Logic II 510

--OR--

Level III: 1 course
Computer Science--Algorithmic & Data Struct.
300, Comp. Architecture and Organ. 350
Math--Technical Calc I 210, Anal Geometry & Calc I 220
Philosophy--Topics in Metalogic 701
Statistics--Biometrics II 341, Business & Econ. Stat II 351, Anal. of Variance & Covariance 704, Regression & Correlation Analysis 705

BA DEGREE ONLY
Foreign Language: 4 courses 15 hrs. One of the foreign language sequences offered by the Dept. of Modern Languages or equivalent competency.

Mathematics: 1 course 3 hours
100-799 level course offered by the Dept. of Mathematics, or any other course for which there is a mathematical prerequisite. Any course used to satisfy this requirement cannot be used to satisfy any other general education requirement.

INTERNATIONAL OVERLAY:
This course may also satisfy a requirement in the major, social sciences, or humanities. The 4th course in a single foreign language sequence (other than Latin) will satisfy this requirement.

Anthropology--Intro. Cultural 200, Intro. to Ling.
Anthro. 220, Intro to aelogy 260, Civ. of South Asia I 505, Civ. of South Asia II 506, Folk Cultures 507, Male & Female 508, Cultural Ecology & Econ. 511, Political Anthropology 512, Creativity & Culture 515, Ethnomusicology 516, Afro-Amer. Music & Cult. 517, African American Cultures 536, Cultures of India & Pakistan 545, Cultures of Africa 550, Culture & Personality 564, Religion in Culture 618, Indians of No. Amer. 630, Indian Cultures of So. Amer. 634, Pro-Seminar in Appl. Anth 640, Precolombian Civ. of Mexico & Guatemala 673, Archaeology of the Old World 676
Economics--Civ. of So. Asia I 505, Civ. of So. Asia II 506, Capitalism & Socialism 636, Intern'l Trade 681, Underdeveloped Countries 682
Geography--World Reg 100, Human Geog 200, Honors 201, Civ. of So. Asia I 505, Civ. of So. Asia II 506, Latin Amer. 620, Europe 640, Soviet Union 650, Geog of Hunger 710, World Population Patterns 715
Journalism & Mass Comm--Intern'l Comm 670
Management--Intern'l Business (Bus. Adm.) 690
Marketing--Intern'1 Marketing (Bus. Adm.) 544
Modern Languages--Russian Culture & Civ. 250, Russin Lit. in Translation: 19th Cent. 504, Russin Lit Trans: Soviet Period 508, Survey Russian Lit. 552
Sociology--Civ of So Asia I 505, Civ of So Asia II 506, Religion in Culture 618, Soc. & Change So. Asia 742
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<td>Discrete Math</td>
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<td>Elem Numerical Anal</td>
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**Courses required for BOTH Majors**

- Fund. of Computer Programming: CIS 200 3
- Fund. Language Laboratory: CIS 203 1
- Intro. to Computer Engineering: EECE 241 3
- Algor. & Data Structures: CIS 300 3
- Computer Architect. & Prog.: CIS 350 3
- Anal of Algorithms & Data Struct: CIS 500 3
- Intro. to Programming Languages: CIS 505 3
- Operating Systems I*: CIS 520 3
- Software Engineering Project I*: CIS 540 3
- Software Engineering Project II#: CIS 541 3
- Intro to Data Management Systems#: CIS 560 3

* Fall ONLY
# Spring ONLY

Technical Electives To Be Approved By Advisor:
(6 hrs for BA degree, 9-12 hours for BS degree)

1. 
2. 
3. 
4. 

Courses for BA Degree

- Humanities (4 Courses): 12
- 1. Fine Arts
- 2. Philosophy
- 3. Western Heritage
- 4. Literary or Rhetorical Arts

- Social Sciences (4 Courses): 12
  1. 
  2. 
  3. 
  4. Requires 500-799 or have preq. in same dept.

- Natural Sciences (3 Courses): 11
  1. Life Science w/Lab
  2. Physical Science w/Lab
  3. Life or Physical Science

Foreign Languages (4 Courses): 15

- Quantitative requirement is met by majoring in CMPSC or INSY

Math (1 Course): 3

- Interm'l Overlay (1 course): 3

Courses for BS Degree

- Humanities (4 Courses): 11
- 1. Fine Arts
- 2. Philosophy
- 3. Western Heritage
- 4. Literary or Rhetorical Arts

- Social Sciences (4 Courses): 12
  1. 
  2. 
  3. 
  4. Requires 500-799 or have preq. in same dept.

- Natural Sciences (4 Courses): 14
  1. Life Science w/Lab
  2. Physical Science w/Lab
  3. Life or Physical Science

- 4. Course w/ preq. in same dept.
AREAS OF TECHNICAL ELECTIVES

COMPUTER SCIENCE MAJORS
BA select 6 hours, BS select 9 hours as follows:

Courses taken to meet the Computer Science major may not be used as technical electives. Technical electives must be Computing and Information Sciences 300 level and above. One course must be from the CIS 600 or CIS 700 levels.

INFORMATION SYSTEM MAJORS
BA select 6 hours, BS select 12 hours from the suggested coursework for a particular track.

DATABASE MANAGER
CIS 600 Microcomputer Software
CIS 761 Data Base Management Systems
MANGT 420 Management Concepts
MANGT 421 Production/Operations Management
MANGT 466 Management Information Systems

INFORMATION SYSTEMS ANALYST/DESIGNER
CIS 740 Software Engineering
ACCT 211 Financial Accounting
FINAN 450 Business Finance
MANGT 420 Management Concepts
MANGT 466 Management Information Systems
MKTG 400 Marketing

MANAGEMENT INFORMATION SYSTEMS
ACCT 211 Financial Accounting
MKTG 400 Marketing
FINAN 450 Business Finance
MANGT 466 Management Information Systems
CIS 762 Office Automation
PSYCH 560 Industrial Psychology

APPLICATIONS PROGRAMMER
CIS 600 Microcomputer Software
CIS 535 Introduction to Computer-Based Knowledge Systems
CIS 636 Computer Graphics
CIS 740 Software Engineering
CIS 745 Software Development Management

COMMUNICATIONS ANALYST
CIS 600 Microcomputer Software
CIS 750 Advanced Computer Architecture
CIS 762 Office Automation
CIS 725 Computer Networks
PSYCH 425 Problem Solving and Decision Making
NATIONAL UNIVERSITY
INFORMATION SCIENCES
DEPARTMENT OF COMPUTER AND
IN THE
MASTER OF SCIENCE DEGREE
FOR THE
GUIDELINES

1. INTRODUCTION
courses require the student to complete a substantive software project, including specification, design, testing, and documentation.

Theory Requirement: One of the courses: CMPSG770 or 770. These courses cover formal proof techniques.

Breadth Requirement: Three of the courses: CMPSG761 (specification and verification), 765 (programming language), 730 (artificial intelligence), 740 (operating systems), 790 (software engineering), or 761 (database systems). (Note: CMPSG762 may be substituted for CMPSG761, and CMPSG725 may be substituted for CMPSG720.) These courses give the student exposure to a breadth of areas in computing. Other courses numbered CMPSG8xx may be used to satisfy this requirement, provided that permission is granted by the Graduate Studies Committee.

Specialisation Requirement: One course numbered CMPSG8xx or CMPSG9xx (excluding seminars, projects, and M.S. research courses).

The student must receive a grade of "B" or better for each course used to satisfy the above requirements.

IIIa. Advisor and Supervisory Committee

By the end of the first year as a graduate student, a student must select a Major Professor. The Major Professor helps the student choose a Supervisory Committee, pick a Program Option, and formulate a Program of Study. The Supervisory Committee is a group of three faculty members (including the Major Professor) that approves the student's Program of Study and Program Option and gives final approval for the student's degree. The final approval is granted in the Oral Examination, which is held when all other requirements are met for the degree. The Oral Examination is described in Section IIIc. The Program Option is described in Section IIIb. The Program of Study lists the courses that the student takes to satisfy the coursework requirements for the M.S. degree. A student must obtain a Program of Study Form from the Graduate School, list the courses on it, have the Supervisory Committee sign it, and return it to the Graduate School. The Program of Study Form should be completed at the end of the student's first year of studies.

IIIb. The Program Option

The Program Option can take one of three forms:

Non-thesis-report Option: Write a major paper, for example, as part of a CMPSG8xx course. This option requires 33 credit hours for a M.S. degree.

Report Option: Undertake a project that culminates in a written report; 2 credit hours for CMPSG898 are awarded for the work. Project work satisfying the implementation requirement can be used, subject to the approval of the Major Professor. This option requires 30 credit hours for a M.S. degree.

Thesis Option: Perform original research that culminates in a written thesis; 6 credit hours for CMPSG899 can be awarded for the work. This option requires 30 credit hours for a M.S. degree.

The document written to satisfy the Program Option should represent the best possible writing by the student; it is not to be written or extensively edited by the Major Professor. Students should begin their writing early enough so there will be time for review by the Major Professor and rewriting by the student prior to the Oral Examination. Once the student has completed the document, the student must visit the Graduate School and obtain the Graduate School's Approval Form. The Supervisory Committee members sign the Approval Form, and the student returns it to the Graduate School.

If a student chooses either the thesis or report options, the thesis or report must meet the Graduate School's standards. Tentative copies of the thesis or report are due in the Major Professor's office approximately two months prior to graduation. The Graduate School requires three copies of the thesis or report, which are submitted after the Oral Examination.

IIIc. The Oral Examination

Once the Supervisory Committee members have signed the Graduate School's Approval Form, the student returns the form and tells the Graduate School the time, date, and place of the Oral Examination. The examination should take place approximately one month before graduation, and it must occur no sooner than one week after the Approval Form is returned.

The Oral Examination is a presentation of the student's Program Option work and a defense of the student's scholarly effort. The exact format of the Oral Examination is decided by the Supervisory Committee, and the student must consult with the Major Professor prior to the examination to establish the format.

A student can either pass or fail the Oral Examination, subject to a vote by the Supervisory Committee. If the student fails, a second attempt of the Oral Examination cannot be retaken in less than two weeks nor more than twelve months after the failed examination, unless an extension is granted by the Dean of the Graduate School. No third try is allowed.

IV. NORMAL PROGRESS

Each semester of enrollment, a student must make normal progress towards the M.S. degree. Normal progress is considered to be the following:

- a grade point average that is 3.00 or better,
- a Major Professor selected and a Program of Study filed with the Graduate School by the end of the first year in attendance,
- a coursework load of at least 9 credit hours per semester.

V. UNRESOLVED ISSUES

Any issues not covered in this document shall be resolved by the Graduate Studies Committee in consultation with the faculty of the Department of Computing and Information Sciences.
1. GENERAL REQUIREMENTS

2. INTRODUCTION

January 1989

KANSAS STATE UNIVERSITY

INFORMATION SCIENCES

DEPARTMENT OF COMPUTING AND

DOCTOR OF PHILOSOPHY DEGREE

FOR THE

GUIDELINES
3b. You must maintain a 3.00 grade point average in all coursework.

3c. You must make regular progress toward completion of the degree. Progress of graduate students is reviewed each year in January by the Graduate Studies Committee. A written evaluation of grade point average or who does not respond to a warning of inadequate progress will be placed on probation, with written notice from the Graduate School. A student on probation must correct deficiencies within the time limit indicated in the written notice or be dismissed from the graduate program.

3d. If you are employed by the department, you must enroll in at least 9 hours of graduate-level courses each Fall and Spring term of employment.

3e. Sometimes in your graduate career you must participate in teaching within the Department, either as an assigned instructor or by special arrangement.

3f. You are expected to participate in the professional activities of the Department. You must attend seminars and colloquia offered by the Department and by the professional societies within the Department.

4. SPECIFIC REQUIREMENTS FOR THE PhD DEGREE

4a. Upon admission to the PhD program, you are assigned an academic advisor, who remains your supervisor until you obtain your major professor (see Section 4d.). You and your advisor consult with your advisor to formulate an initial research paper (see Paragraph 4b.), a plan of study and an agreement with a research advisor (see Paragraph 4d.).

4b. During your first year in the program, your academic advisor will assign you an initial research paper on some topic of the advisor's choosing. The paper you write must display sound topic. The paper does not need to be a research proposal or a new research result. The paper must not exceed 1 to 3 credit hours. (In some cases, you may receive CMPS399 credit for your work.) The paper must not be edited or organized by any member of the faculty.

4c. The initial research paper will be evaluated by your academic advisor in consultation with the Graduate Studies Committee. You will not be allowed to proceed to the second year of your PhD studies if your initial research paper is not accepted by your academic advisor and the Graduate Studies Committee.

4d. At the end of your first year of PhD studies, you should seek a research advisor, also known as your major professor. Your research advisor must be a member of the Graduate Faculty. (See the "Kansas State University General Catalog" for further information.) Since the research advisor directs your research, you should choose an advisor carefully. How do you find a research topic? Talk to faculty members. Take some of the 800-level or 900-level research-oriented courses. Read current survey and research papers in computer science journals and magazines. It is your responsibility to obtain a research advisor.

4e. In consultation with your research advisor, you must compose a supervisory committee. The supervisory committee must include those members of the Graduate Faculty in the Computing and Information Sciences Department. Another member must be from the graduate faculty of the Computer Science Department at the University of Kansas. Another member must be a Kansas State University Graduate Faculty member from a department other than Computing and Information Sciences. All committee members must be chosen for their appropriateness to your planned research topic. In addition, the Graduate School will appoint an examination chairman from outside of the Computing and Information Sciences Department.

4f. You must consult regularly with your research advisor.

4.1. The Program of Study

4.1a. You must meet with the members of your supervisory committee and formulate a Program of Study. (Obtain the Program of Study forms from the Graduate School.)

4.1b. The Program of Study contains the following information:

4.1b.i. major professor (that is, the research advisor)

4.1b.ii. members of the supervisory committee

4.1b.iii. general area of research

4.1b.iv. three preliminary examination areas (See Paragraph 4c.)

4.1b.v. all graduate course credits (at least 90 hours)

4.1c. The graduate course credits must include the following:

4.1c.i. The Core Courses stated in Paragraph 4e. Equivalent courses taken at another institution are acceptable. The Graduate Studies Committee reserves the right to determine equivalency. Alternatively, Core Courses can be omitted if you elect to take and pass the comprehensive exam. (See Paragraph 4b.)

4.1c.ii. At least 24 hours of course credit at Kansas State University beyond the Master's degree.

4.1c.iii. At least 30 hours of PhD research.

4.1c.iv. At least 9 hours of CMPS399-level courses.

4.1c.v. One or more courses in theoretical or foundational topics that support your chosen direction of research. The supervisory committee approves the choice of courses for this requirement.

4.1c.vi. Any additional requirements instituted by your supervisory committee. (An example is "Written Communication for Scientists," sometimes required for additional writing experience.)

4.2. The Preliminary Exam

4.2a. You must also pass preliminary exams. The exams consist of 4 written exams and one oral exam. By the end of your second year of studies, you must have passed the preliminary exams.

4.2b. The first preliminary exam is a comprehensive exam over the Core Courses (see Paragraph 4d). This exam is offered if you complete the Core Courses (either at Kansas State University or at your present school) with at least a "B" in each course and with a grade point average of 3.0 or greater for all of the courses. There is no reading list for the comprehensive exam. The exam co-