Illinois State University

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Spring 3-27-1985

Senate Meeting March 27, 1985

Academic Senate
Illinois State University

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ACADEMIC SENATE MINUTES

March 27, 1985   Volume XVI, No. 13

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Adjournment

Meetings of the Academic Senate are open to members of the University community.
Persons attending the meetings may participate in discussion with the consent of
the Senate.   Persons desiring to bring items to the attention of the Senate may
do so by contacting any member of the Senate.

ACADEMIC SENATE MINUTES

(NOT APPROVED BY THE ACADEMIC SENATE)

March 27, 1985   Volume XVI, No. 13

Call to Order

Chairperson Gowdy called the meeting of the Academic Senate to order at
7:05 p.m. in the Circus Room of the Bone Student Center.

Roll Call

Secretary Sessions called the roll and declared a quorum present.

Approval of the Minutes of March 6, 1985

Mr. Spence noted instances of error in the minutes, page 2, paragraph 9;
page 4 four lines from bottom; page 4, 9 lines from the bottom; and page 5,
line 1; Spence and Spencer were incorrectly used.

Mr. Zeidenstein noted on Page 4 and Page 12 the minutes indicated a roll call
vote, whereas in the Appendix there were no roll call votes listed.   Mr.
Sessions indicated that these roll call votes were recorded, and would appear
in the next set of minutes.

Mr. Bowen noted that on Page 8, second paragraph from the bottom, he had
posed a second question: Whether the Applied Computer Science program
would have any problem with the College of Education Master's Program
in Computer Science Education, and the response was that it would not.

Mr. Eimermann noted on Page 10, third paragraph from the bottom of the page:
"Mr. Eimermann represented the report."   In reality the report had not been
given. Delete this statement from the record.

XVI-127   Mr. Christian moved to approve the minutes as ammended (Second,   Gordon).
Motion carried on a voice vote.

Chairperson's Remarks

Ms. Gowdy stated that Mary Edwards has returned to the Senate Office. She
expects to attend the retreat at Ewing on April 3, 1985.

She thanked Mary and the other secretaries in the Senate Office during the
past year for their hard work.

She also expressed appreciation to the officers and committee chairs and
members of the Senate.

She regretted the backlog of work that was being left for the continuing and
new Senators.

Vice Chairperson's Remarks

Mr. Christian commended the student senators for their hard work this year. He thanked the students and faculty members for a good Senate year.

Student Body President's Remarks

Mr. Charnogorsky thanked everyone for the past year.

Administrators' Remarks

Mr. Watkins commented that there were no particular movements for or against the budget in the legislature. The bill has been put together. It is a 72.6 million dollar appropriation. Hearing has not been scheduled. The controversial areas tend to be with elementary and secondary education, and not higher education at this time.

Mr. Strand commented on the three-day visit from NCATE. A report will follow. The team found no problems and recommended the longest term of continued accreditation. ISU has been found among strongest institutions in teacher preparation.

Dr. Harden distributed a statewide cost study of the report to the Board of Higher Education. Outside the University of Illinois, ISU is first at lower undergraduate level in credit/hour operation; third at upper undergraduate; at the graduate I level, we are fourth; and on the graduate student level (doctoral) fifth. Overall credit hour generation, we are third in the state of Illinois.

He stated that it is argued that credit hour generation is impacted by certain fixed costs.

He discussed and analyzed the document: 1983-84 Academic Discipline Unit Cost Study. Two and one half million overall deficit.

Questions: Mr. Pontius and Mr. Schmaltz offered questions.

Mr. Gamsky had no remarks.

Rules Committee Appointments to External Committees (3.22.85.2)

XVI-128   Mr. Pontius moved (Second Christian) appointment of the persons listed to the committees. Motion carried on a voice vote.

ACADEMIC STANDARDS COMMITTEE	
Raymond Hunt, Chemistry	1988
Virginia Crafts, HPERD	1988
COUNCIL ON UNIVERSITY STUDIES	
Evelyn Rex, SED	1986
Peggy Fortune, CJS	1988
Steve Gates, Chemistry	1987

ECONOMIC WELL BEING
Lynn Higgins, HPERD	1987
Ivo Grief, SED	1988
Donna Bruyere, SED	1988

ENTERTAINMENT
Jennifer Drake Grogg, UHS	1988
Jon Hufnagle, Speech Path	1988

FACILITIES PLANNING COMMITTEE
Fred Roberts, Poli. Sci.	1986
James Coe, SED	1987
William Ruyle, Theatre	1988

FACULTY ELECTIONS COMMITTEE
Niles Holt, History	1988
Keith Knoblock, Art	1988

HONORS COUNCIL
Patricia Marcum-Grogg, BEA	1988

LIBRARY COMMITTEE
Ramaswany Radhakrishman, MAM	1988
Gerlof Homan, History	1988

REINSTATEMENT COMMITTEE
Tom Ellsworth, CJS	1988

STUDENT CENTER/POLICY BOARD
Marjory Oliker, Milner	1987

STUDENT CENTER/PROGRAMMING BOARD
Linda Thomley, Metcalf	1987

S.C.E.R.B.
Wayne Galler, C & I	1988

S.C.E.R.B. HEARING PANEL
Ellen Abshire, HPERD	1988
Robert Bradley, Poli. Sci.	1988
Gerry Chrisman, ACS	1988
Robert Crist, Psych.	1988
R. Dwaine Goodwin, HPERD	1988
Virginia Hager, C & I	1988
Mary Natale, C & I	1988

S.C.E.R.B. GRIEVANCE BOARD
Doris Henderson, HPERD	1986
Michael Plantholt, Math	1987
Richard Payne, Poli. Sci.	1988

UNIVERSITY CURRICULUM COMMITTEE

Robert Hunt, Poli. Sci.	1988
Gene Rozanski, ACC	1988
Rita Livingston, SED	1988
Dan Wilhelm, Theatre	1988

UNIVERSITY FORUM

Jamie Comstock, Comm.	1988
Mary E. Campbell, SASW	1988

XVI-129   Mr. Pontius moved (Second, Christian) approval of the nominations listed to be presented for approval by the President for appointment to the Athletic Council. Motion carried on a voice vote.

Nominations to the Athletic Council include:
    Julia Bewsey, Milner
    Teresa Palmer, BEA
    Dorothy Quisenberry, HPERD
    Paul Dohrmann, HPERD
    William Easton, Milner
    Rick Whitacre, Agriculture

Proposal for Master's Degree in Applied Computer Science (2.26.85.1. Rev.)

Senator Balbach, Chairperson of the Academic Affairs Committee, was recognized and presented the proposal to the Senate. She stated that the proposal was greatly improved since the information session, and that the Academic Affairs Committee had approved it on a vote of 5 positive votes, 1 abstention, and one member absent.

XVI-130   Motion by Balbach (Second, Whitcomb) to approve the proposal.

Yielded floor to Mr. Eimermann for budgetary considerations. His Committee met March 19 with chair of Applied Computer Science for budgetary discussions. Changes were made. Budget Committee recommends approval of budgetary considerations.

Mr. Eimermann discussed committee deliberations. They had actually considered whether budget was large enough. Mr. Eggan investigated with other institutions. Adjustments were made on page 31 of $242,000, which do reflect an increase in materials and contractual costs.

Other budget concerns included questions directed to Provost Strand:

1. No provision for summer instruction. Would seem that clientele would want to have summer school. Where would funds come from? Budget committee would not recommend without clarification.

Dr. Strand replied that summer school is credit-hour driven. First year would require funds to operate. Will require discussion. Hope funds would be available.

Mr. Eimermann reestablished that the summer school costs are not budgeted. Mr. Strand replied that that is a problem.

Ms. Gowdy opened the question for debate.

Mr. Zeidenstein had a question on Page 31, about the $242,000 total, near the end of the explanatory paragraph. What did the $42,000 average salary mean?

Mr. Eggan responded that it was the average of two professors, plus one assistant, for the first year.

Mr. Spence asked about page 10, Decision Support Sequence: statement was made that applicants must have had Probability and Statistics. Mr. Parr said Mr. Eggan should answer this question.

Mr. Eggan said there was no specific course because there are several around. What specifically will be demanded will evolve as the courses mature in the curriculum process. It was thought to analyze the students in the incoming process and guide them in the advisement process.

Mr. Spence questioned the committee about page 29, three questions dealing with accreditation and licensure. To what extent did the committee explore these questions? Ms. Balbach said the committee had asked about this and wanted it expanded upon.

Mr. Spence pointed out that there is a difference between computer science and data processing. Two references, on page 9, second paragraph, "...a candidate must have at least two courses in computer science or data processing," and a similar statement on page 39 show that the two words are not being used synonomously. His concern about the proposal was not with the information systems sequence. He thought the sequence built upon a strong undergraduate program required by the academic plan, that we have capable faculty to administer it. However, he was very much concerned about the decision-support sequence and the teacher retraining sequence. These sequences represented computer science as opposed to data processing. He would use the term computer science, rather than data processing. His concern was that the University was embarking upon computer science for the first time in this institution and there is no corresponding undergraduate program for preparation in mathematics. Some math is necessary for studies in computer science. He quoted from a Sloan foundation draft curriculum for programs in computer science (dated 2/15/85 and 3/5/85): "Computer science is science. We seek to find a definition of computer science, one that will continue to guide the discipline through a decade or two, rather than be driven by the needs and priorities of today's particular technologies. Such a definition is under-lying a curriculum standard which mandates that the faculty first teach scientific principles, and second teach applications." The report under-lined the words, first and second. In his view, our computer science department has the order of those things reversed. This would be appro-priate for a program in data processing, but highly inappropriate for a program in computer science.

He had another quote from the October 1984 Association of Computing Machinery Journal. The debate seems to be about what role mathematics should play in an undergraduate computer science program, about how much is enough. Along

with this we need to understand that there are in place and operating
accreditation programs for undergraduate computer science. The ACS
program names two organizations, the ACM and the IEEE, that have agreed
upon accreditation standards for computer science programs at the
Bachelor's level. The minimal requirements include one semester of
discrete mathematics, one year of differential and integral calculus,
one semester of probability and statistics, and at least one of a list of
four upper level mathematics courses. These are requirements that are in
place and being enforced for accreditation of Bachelor level programs in
Computer Science. The proposal we have before us is for a Master's Degree
in Applied Computer Science which has essentially no mathematics requirement
of any sort for its students. He believed that such a program would be
second class.

Mr. Pontius pointed out that this was not a program in computer science,
but an applied computer science program in the College of Applied Science
and Technology.

Mr. Spence thought the Information System sequence was a true applied
science program. The other two sequences purport to be computer science
programs. In light of the Provost's remarks, do we want to have our
children taught by high school teachers whose training in computer science
has met the standards of the data processing management association? Or do
we want teachers trained in the methods of real computer science organizations?

Mr. Schmaltz said Mr. Eggan's memo to Dean White noting graduate programs was
helpful. He questioned the number of faculty who have Ph.D's in computer
science. ISU has one Ph.D. and one undesignated in Computer Science. Is
this typical?

Mr. Eggan ran down the list and analyzed other schools: Bradley University
was Math and Computer Science, most degrees were in mathematics; Sangamon
State University had three or four people who had retrained in computer science;
Western Illinois University has gone down in faculty -- those with Ph.D's in
computer science have been leaving; SIU - Carbondale, most are Ph.D's in com-
puter science: SIU - Edwardsville, most are Ph.D's in mathematics who are
teaching computer science; Northern Illinois University has 14, but not all
are computer science Ph.D's; Roosevelt University most have Math Ph.D's.
He summarized that most of the Ph.D's in Computer Science had been courted
by schools with better salaries and benefits.

Mr. Schmaltz asked how Mr. Eggan planned to hire these Ph.D's according to their
budget. The Ph.D's they hired would probably not be Applied Computer Science.
Mr. Eggan answered: Probably not; but ISU can attract associate professors
who are not being promoted.

Dean White took the position that it is clear there is an appropriate concern about the faculty qualifications. The ACS faculty in the proposal do not look like traditional faculty in this discipline. However, this program is not a traditional academic discipline. The faculty do have extensive experience of immediate value to the ACS program. They are committed to the Applied Computer Science field.

Mr. Spence again stated that we were confusing computer science with data processing. It may be true that the information systems sequence is not a traditional graduate program. Is the training of teachers not a traditional graduate program? Should not the training of teachers be treated as in other departments on this campus.

It is obvious that the information on page 29 about accreditation is totally inadequate. There are accreditation bodies for bachelor's programs in this field which are in operation. At the least, there needs to be some statement that they exist, and for some reason why it would not be appropriate for our program to be accredited by that body. Will accreditation be sought within the next 5 years. Not applicable. The answer should be either yes or no. It is certainly not beyond the realm of possibility that within the next 5 years we will have accreditation standards in place in the State of Illinois. We do not have accreditation standards for teachers of mathematics within the State of Illinois. But, we will within the next five years.

Finally, Item 31, another Not Applicable answer. There are other programs within this department that should have been supported. The letters of support are mostly talking about data processing. The Arthur Andersen letter, for instance, mentions information processing. The letter from State Farm mentions entry level programming needs. We are confusing the two terms. He cannot support proposals that are in effect purporting to be computer science. Reference to a New York Times citation was preempted two days later by a report on national employment that identified occupations which are likely to become obsolete by the turn of the century because of more sophisticated technology. One of those identified was computer programming. We are creating a long-term solution to a short-term problem. We should think about this as taxpayers.

Ms. Balbach shared some of Mr. Spence's concerns. She had checked at the University of Illinois to see what they offered. They have four graduate programs: A Ph.D, and a Masters of Science in Computer Science, Master of Computer Science for students who specialize in some aspect of computer science, and a Master of Science in the teaching of Computer Science which is called a terminal degree enabling graduates to teach in Junior College, undergraduate colleges and high schools. She had concluded that the U of I programs were not too different from what ISU proposes.

Provost Strand addressed questions made earlier of the Provost's Office. The Proposal had been approved by the Graduate Council, by the Academic Affairs Committee, and the University Curriculum Committee. The Provost's Office also supports this proposal. Criticism reflects professional differences. It is difficult to reconcile these differences of opinion. He reiterated that this proposal has the support of the Provost and various committees.

Mr. Rosenbaum had a few questions about the letters included: Dean White's letter and some of its data, plus Dean Chapman's letter alluding to this data. It is stated that ISU has more doctoral level faculty members than other institutions in the state, including Western. Northern Illinois University has 14. He suggested a comparison ratio of doctoral faculty to total faculty. Only Western Illinois University has less than ISU. Generally the letters are laudatory. But the letter from Dr. Otto, Chair of the Math Department, pointed out that "development of the under-graduate ACS program held potential for enhancing the undergraduate mathe-matics programs but that potential was never realized."

Mr. Spence observed that the data about the 12 doctoral faculty came from projected 1986 figures. It was not the case at this time. The Applied Computer Science program at ISU grew up in the Math Department and would have had real computer science character disappeared. In being transferred to CAST, the computer science character disappeared. Dr. Otto's remarks could be interpreted in this light. He said proposals in computer science have been received before that have purported to do one thing, but in reality are quite different.

Mr. Rosenbaum commented regarding the student demand for such a program (bottom of page 19). He was not certain what conclusions would be de-duced from the data presented here.

Mr. Eggan responded to the remarks concerning accreditation. A lot of discussion and concern about terminology had taken place at the national ACM conference in New Orleans. Accreditation has not been universally accepted by the ACM community. There is a lot of concern about what accreditation will do in classical computer science departments. Ours is not a data processing department, it is a computer information system. which is the term now used by professionals. The ACM has recognized that it is a different program. The letter from ACM notes future anticipated accreditation recommendations for departments regarding computer science. In Math twenty to thirty years ago, accreditation standards were developed that were impossible to live up to. Accreditation is two to three years down the road.

Mr. Eggan also responded to critique of the Arthur Anderson letter. Concerning the teaching sequence, they were also concerned about what had been going on in high schools. At the ACM meeting there was described a similar program to ISU that had been in existence approximately two years and was working out well. In the revision, Section 20, discussions indi-cated that we were seeking support to develop a sequence which would help to provide opportunities for individuals in different disciplines to learn about techniques and how the computer can help them make decisions. Flexibility is needed to do that, i.e., not to assume these students have large math backgrounds. They anticipated serving a much broader group of students.

Mr. Zeidenstein had questions about pages 12 and 13, "New Courses Needed to Support the Curriculum," which listed fifteen new courses. This seemed to be a large number of new courses. If there are problems hiring

people, how many of these new courses depend on new faculty that would be hired? He saw a fair amount of duplication in course concepts and asked to what extent these could be telescoped. He asked Mr. Spence if these courses could be taught without a greater mathematics background.

Mr. Eggan replied that it was more the case to start with present strengths and build as the program progresses. They would use sequencing and teach those courses. It would not be necessary to start up all the new courses at one time. A course such as "Interactive Graphics" would not be brought up immediately. Industrial Technology would help out in Graphics.

Mr. Spence replied to Mr. Zeidenstein's rephrased question about the absence of a larger math background. He did not know about all the courses, because in fact some of them did not exist yet. He responded about Courses 411 and 412. His objection was that these courses looked like 100 level courses in Applied Computer Science being taught in Pascal. It will be taught at a faster rate, with more expectations of the students. He thought a competent mathematics sophomore could easily handle 411 and 412. The Math Department for four years has been asking the ACS department to create a sequence of courses for math secondary education majors who wish to have some competence in teaching computer science at the high school level. He is dismayed to see ACS asking for this training at the graduate level, when for years Math has been requesting it at an undergraduate level. A 400 level course is not needed to teach what a math undergraduate knows. He cited an example of a course in Mathematical Modeling which would be of interest to a person who needs to know computer modeling. It involves simulating mathematical equations by computer. One needs to know the theory and then be able to use the computer to see what the theory predicts. If there were other prerequisites in mathematics, he would have fewer objections to the proposal.

Mr. Zeidenstein asked what level of mathematics is necessary to engage in performance of simulation modeling. Mr. Eggan said that to use modeling in math, one needs to know something about the subject matter of math. Statistics is used without math. He felt it was possible to provide training without the math background desired by the math department.

Mr. Zeidenstein asked if the Decision Support Sequence is mainly knowing and recognizing software, or in making software? Mr. Eggan said it is an evolving sequence, in its developmental stage. Courses will have to be improved. Regarding no ACS support for Math, there are 100 students with major or sequence in one or the other departments. There is a lot of interplay between the two departments for a large number of students. Math experts are writing software and non-math people need to know available software. Mr. Zeidenstein asked if at least one course was for evaluating software and not just surveying. Answer: Yes.

Mr. Zeidenstein asked if there would be courses where students create decision-making models. Mr. David Kephart, ACS, responded: Yes, there would be. Business students learn to build a model for business application, whereas Math students develop models that don't have immediate application.

XVI-131   Mr. Gamsky moved the previous question.   Motion carried on a voice vote.

              Ms. Balbach restated the motion: To approve the proposal for Master's Degree in Applied Computer Science.

(XVI-130)   Motion carried on a voice vote with some negative votes.

Zeidenstein Resolution   (2.6.85.1)

Mr. Zeidenstein asked if the Senate could have the resolution as an Action Item at the next Senate meeting.   Ms. Gowdy suggested an Information Item rather than Action Item.

Mr. Mohr thought the Senate should straighten out this matter before the present Senate disbanded.   He gave a sketch of how the Senate had arrived at this point.   In September the URC was asked to look into Market Equity and Salary Minima and report back.   Two years ago the entire ASPT process was revised.   Are we going to do this every year?   He urged debate and vote on the Zeidenstein resolution.

Mr. Zeidenstein felt it would not be fair to "clean-up" everything, and not leave it for the new Senate when issues are complicated.   It would be more desirable to carry over this issue.   He would be opposed to any action that would preclude the next Senate meeting where senators would receive the ad hoc committee's report, the hearing report, etc.   He preferred to hold back his resolution as an alternative.   The only reason to adopt his resolution tonight would be to prevent administrative action.   It wouldn't and would merely register disapproval.   He hoped the Provost and Senate would not be precipitous, for two to three weeks.   We ought to do this as people who respect each other's opinions, and in a fair manner.

Ms. Gowdy asked if he wished to postpone his resolution.

XVI-132   It was moved by Zeidenstein (Second, Ken Strand) to postpone the Zeidenstein resolution to Information Item on April 10, 1985.

It was clarified that defeat of this motion would make the resolution an Action Item this evening.

Mr. Mohr spoke against the motion.   The Zeidenstein motion had been introduced several meetings ago, and the Senate had had a lot of time to look at it.   Why can't the Senate deliberate and act?   We seem to have long discussions with no structure.   Senate is below par on this issue. The opinion of some senators was that people were trying to get you to do what you don't want to do.

Mr. Mohr said the Ad Hoc Committee Report had not had time to be considered. The open hearing on the report was last night.   He questioned the Parliamentarian: Does an ad hoc committee of this Senate exist beyond this Senate? Mr. Boaz replied that the committee would probably continue for continuity purposes.   Only a third of the Senate faculty members were not continuing. Ms. Gowdy pointed out that the report of the ad hoc committee did exist on paper.   The committee would present a further concluding report from the open hearing held March 26th.

Mr. Mohr said this Senate should make a decision so that the next Senate would know where we stand on the issue.

Mr. Eimermann had a different sense of events. At the time of formation of the ad hoc committee, there were various opinions and discussions. He thought the Zeidenstein resolution and the ad hoc committee report should be considered simultaneously. He briefly restated what had occurred. There were four different pieces of information before the Senate: 1) a report by the University Review Committee that sought to clarify low salaries; 2) a Faculty Affairs Committee report which endorsed the URC report and further suggested that the ASPT document did not authorize the Provost to take monies off the top of salary funds for adjustments; 3) one resolution offered by Zeidenstein and three by Eimermann seeking to put Senate on record as to what was approved and what was not approved; and 4) a memorandum from the Provost to the URC in which he indicated that because the URC recommendations did not go far enough he intended to take money off the top of salary adjustment funds, for distribution through administrative channels.

Mr. Mohr said the Senate did not receive that letter. He had asked specifically in Senate meeting if the money would be taken off the top of salaries, and the Provost had answered, "No". Mr. Eimermann commented that the letter was sent to the URC.

Mr. Eimermann described how he perceived the Provost's actions. Nowhere was there before the Senate any specification as to the precise changes the administration used.   His motion to create the ad hoc committee was to give one last effort for compromise. He thought his fellow senators agreed to an honest attempt at compromise on this subject. The ad hoc committee has presented a statement as to what the specific administrative concerns are and some specific recommendations as to language changes in the ASPT. The open hearing gave cause for adjustments and refinement in report before submittal. The ad hoc committee was trying to provide a concrete alternative for Senate to consider as a compromise. He hoped this Senate, since there is not time for consideration by this Senate, would approve the Zeidenstein motion.

XVI-133   Mr. Watkins moved the previous question.

Mr. Zeidenstein offered an amendment to his motion: for the URC report to be included in the packet for the next Senate.

Ms. Gowdy understood that the URC, FAC, and pertinent documents did go with the Eimermann and Zeidenstein resolutions. Mr. Zeidenstein approved, if documents were assured to be dispensed in the Senate packets. Ms. Gowdy said the Executive Committee would see that the proper documents were dispensed.

Mr. Mohr asked if the URC letter would be included? He thought it would be courteous for senators to share vital information with each other.

(XVI-132) Motion to postpone the Zeidenstein resolution to information item on 4/10/85 carried with negative votes.

Mr. Watkins asked to be excused from the meeting as he was not feeling well.

Committee Reports

Academic Affairs Committee. No Report.

Administrative Affairs Committee. No Report.

Faculty Affairs Committee. Mr. Rosenbaum commented that the University Attorney had not responded about the problems they were checking on, so they would leave that to the new Faculty Affairs Committee to deal with.

Rules Committee. No report.

Student Affairs Committee. No report.

JUAC Committee. Mr. Eimermann reported that JUAC had been investigating issues of tax shelter and other benefits, such as increasing tuition benefits.

Ad Hoc Committee. Mr. Eimermann reported that the committee held an open hearing on March 26th. Approximately 70 people attended. Meeting lasted approximately 2-3/4 hours. Comments fell into three categories: 1) opposition to the idea of departments having to accept a small number for exceptional merit; 2) opposition to market concept that one person should make more than another; 3) opposition to counter-offer fund. Committee announced that they will be taking written comments, and he encouraged senators to solicit comments be in by next Tuesday. Timetable for comments to be in by Executive Committee meeting of April 3 was not feasible.
Committee will present report and new proposals to the new Senate.

XVI-134 Motion to adjourn by Pontius (Second, Charnogorsky) passed on a voice vote. Senate adjourned at 9:30 p.m.

FOR THE ACADEMIC SENATE

KYLE SESSIONS, SECRETARY

NAME	ATTEN-DANCE	VOTE						VOICE VOTE		
		MOTION #	MOTION #	MOTION #	MOTION #	MOTION #	MOTION #	MOTION #	Y	N
BALBACH	P							XVI-127	X	
BEDINGFIELD	Ex.							XVI-128	X	
BELKANP	P							XVI-129	X	
BOWEN	P							XVI-130	X	
CHARNOGORSKY	P							XVI-131	X	
CHRISTIAN	P							XVI-132	X	
CLARK	A							XVI-133	X	
EIMERMANN	P							XVI-134	X	
GAMSKY	P									
GETSI	P									
GLEN	P									
GORDON	P									
GOWDY	P									
GRAFF	P									
HANLON	EX.									
HARDEN	P									
JAHRKE	P									
LANDFAIR	A									
LORBER	P									
LUTHER	A									
MARCHIO	A									
MASON	EX.									
MAHORN	EX.									
MCCRACKEN	A									
MOHR	P									
MULCAHY	EX.									
NELSEN	EX.									
PARR	P									
PETROSSIAN	P									
PILAND	P									
PONTIUS	P									
PRITNER	EX.									
ROSENBAUM	P									
SCHMALTZ	P									
SESSIONS	P									
SHANE	P									
SPENCE	P									
SPENCER	P									
STOKES	P									
STRAND,D.	P									
STRAND,K.	P									
TARULIS	P									
TAYLOR	P									
TOWNSEND	A									
WATKINS	P									
WHITCOMB	P									
ZEIDENSTEIN	P									

ACADEMIC SENATE MINUTES

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She regretted the backlog of work that was being left for the continuing and
new Senators.

Vice Chairperson's Remarks

Mr. Christian commended the student senators for their hard work this year. He thanked the students and faculty members for a good Senate year.

Student Body President's Remarks

Mr. Charnogorsky thanked everyone for the past year.

Administrators' Remarks

Mr. Watkins commented that there were no particular movements for or against the budget in the legislature. The bill has been put together. It is a 72.6 million dollar appropriation. Hearing has not been scheduled. The controversial areas tend to be with elementary and secondary education, and not higher education at this time.

Mr. Strand commented on the three-day visit from NCATE. A report will follow. The team found no problems and recommended the longest term of continued accreditation. ISU has been found among strongest institutions in teacher preparation.

Dr. Harden distributed a statewide cost study of the report to the Board of Higher Education. Outside the University of Illinois, ISU is first at lower undergraduate level in credit/hour operation; third at upper undergraduate; at the graduate I level, we are fourth; and on the graduate student level (doctoral) fifth. Overall credit hour generation, we are third in the state of Illinois.

He stated that it is argued that credit hour generation is impacted by certain fixed costs.

He discussed and analyzed the document: 1983-84 Academic Discipline Unit Cost Study. Two and one half million overall deficit.

Questions: Mr. Pontius and Mr. Schmaltz offered questions.

Mr. Gamsky had no remarks.

Rules Committee Appointments to External Committees (3.22.85.2)

XVI-128   Mr. Pontius moved (Second Christian) appointment of the persons listed to the committees. Motion carried on a voice vote.

ACADEMIC STANDARDS COMMITTEE	
Raymond Hunt, Chemistry	1988
Virginia Crafts, HPERD	1988
COUNCIL ON UNIVERSITY STUDIES	
Evelyn Rex, SED	1986
Peggy Fortune, CJS	1988
Steve Gates, Chemistry	1987

ECONOMIC WELL BEING
<u>ECONOMIC WELL BEING</u>

Lynn Higgins, HPERD	1987
Ivo Grief, SED	1988
Donna Bruyere, SED	1988

<u>ENTERTAINMENT</u>

Jennifer Drake Grogg, UHS	1988
Jon Hufnagle, Speech Path	1988

<u>FACILITIES PLANNING COMMITTEE</u>

Fred Roberts, Poli. Sci.	1986
James Coe, SED	1987
William Ruyle, Theatre	1988

<u>FACULTY ELECTIONS COMMITTEE</u>

Niles Holt, History	1988
Keith Knoblock, Art	1988

<u>HONORS COUNCIL</u>

Patricia Marcum-Grogg, BEA	1988

<u>LIBRARY COMMITTEE</u>

Ramaswany Radhakrishman, MAM	1988
Gerlof Homan, History	1988

<u>REINSTATEMENT COMMITTEE</u>

Tom Ellsworth, CJS	1988

<u>STUDENT CENTER/POLICY BOARD</u>

Marjory Oliker, Milner	1987

<u>STUDENT CENTER/PROGRAMMING BOARD</u>

Linda Thomley, Metcalf	1987

<u>S.C.E.R.B.</u>

Wayne Galler, C & I	1988

<u>S.C.E.R.B. HEARING PANEL</u>

Ellen Abshire, HPERD	1988
Robert Bradley, Poli. Sci.	1988
Gerry Chrisman, ACS	1988
Robert Crist, Psych.	1988
R. Dwaine Goodwin, HPERD	1988
Virginia Hager, C & I	1988
Mary Natale, C & I	1988

<u>S.C.E.R.B. GRIEVANCE BOARD</u>

Doris Henderson, HPERD	1986
Michael Plantholt, Math	1987
Richard Payne, Poli. Sci.	1988

UNIVERSITY CURRICULUM COMMITTEE
        Robert Hunt, Poli. Sci.   1988
        Gene Rozanski, ACC   1988
        Rita Livingston, SED   1988
        Dan Wilhelm, Theatre   1988

UNIVERSITY FORUM
        Jamie Comstock, Comm.   1988
        Mary E. Campbell, SASW   1988

XVI-129   Mr. Pontius moved (Second, Christian) approval of the nominations listed
          to be presented for approval by the President for appointment to the
          Athletic Council. Motion carried on a voice vote.

          Nominations to the Athletic Council include:
                Julia Bewsey, Milner
                Teresa Palmer, BEA
                Dorothy Quisenberry, HPERD
                Paul Dohrmann, HPERD
                William Easton, Milner
                Rick Whitacre, Agriculture

Proposal for Master's Degree in Applied Computer Science (2.26.85.1. Rev.)

Senator Balbach, Chairperson of the Academic Affairs Committee, was recognized
and presented the proposal to the Senate. She stated that the proposal was
greatly improved since the information session, and that the Academic Affairs
Committee had approved it on a vote of 5 positive votes, 1 abstention, and one
member absent.

XVI-130   Motion by Balbach (Second, Whitcomb) to approve the proposal.

          Yielded floor to Mr. Eimermann for budgetary considerations. His Committee met
          March 19 with chair of Applied Computer Science for budgetary discussions.
          Changes were made. Budget Committee recommends approval of budgetary con-
          siderations.

          Mr. Eimermann discussed committee deliberations. They had actually con-
          sidered whether budget was large enough. Mr. Eggan investigated with
          other institutions. Adjustments were made on page 31 of $242,000, which
          do reflect an increase in materials and contractual costs.

          Other budget concerns included questions directed to Provost Strand:

          1. No provision for summer instruction. Would seem that clientele would
             want to have summer school. Where would funds come from?
             Budget committee would not recommend without clarification.

          Dr. Strand replied that summer school is credit-hour driven. First year would
          require funds to operate. Will require discussion. Hope funds would be
          available.

Mr. Eimermann reestablished that the summer school costs are not budgeted.
Mr. Strand replied that that is a problem.

Ms. Gowdy opened the question for debate.

Mr. Zeidenstein had a question on Page 31, about the $242,000 total, near the
end of the explanatory paragraph. What did the $42,000 average salary mean?

Mr. Eggan responded that it was the average of two professors, plus one
assistant, for the first year.

Mr. Spence asked about page 10, Decision Support Sequence: statement was
made that applicants must have had Probability and Statistics. Mr. Parr
said Mr. Eggan should answer this question.

Mr. Eggan said there was no specific course because there are several around.
What specifically will be demanded will evolve as the courses mature in the
curriculum process. It was thought to analyze the students in the incoming
process and guide them in the advisement process.

Mr. Spence questioned the committee about page 29, three questions dealing
with accreditation and licensure. To what extent did the committee ex-
plore these questions? Ms. Balbach said the committee had asked about
this and wanted it expanded upon.

Mr. Spence pointed out that there is a difference between computer science
and data processing. Two references, on page 9, second paragraph, "...a
candidate must have at least two courses in computer science or data pro-
cessing," and a similar statement on page 39 show that the two words are not
being used synonomously. His concern about the proposal was not with the
information systems sequence. He thought the sequence built upon a strong
undergraduate program required by the academic plan, that we have capable faculty
to administer it. However, he was very much concerned about the decision-
support sequence and the teacher retraining sequence. These sequences repre-
sented computer science as opposed to data processing. He would use the term
computer science, rather than data processing. His concern was that the
University was embarking upon computer science for the first time in this
institution and there is no corresponding undergraduate program for prepara-
tion in mathematics. Some math is necessary for studies in computer science.
He quoted from a Sloan foundation draft curriculum for programs in computer
science (dated 2/15/85 and 3/5/85): "Computer science is science. We seek
to find a definition of computer science, one that will continue to guide the
discipline through a decade or two, rather than be driven by the needs and
priorities of today's particular technologies. Such a definition is under-
lying a curriculum standard which mandates that the faculty first teach
scientific principles, and second teach applications." The report under-
lined the words, first and second. In his view, our computer science
department has the order of those things reversed. This would be appro-
priate for a program in data processing, but highly inappropriate for a
program in computer science.

He had another quote from the October 1984 Association of Computing Machinery
Journal. The debate seems to be about what role mathematics should play in
an undergraduate computer science program, about how much is enough. Along

with this we need to understand that there are in place and operating
accreditation programs for undergraduate computer science.   The ACS
program names two organizations, the ACM and the IEEE, that have agreed
upon accreditation standards for computer science programs at the
Bachelor's level.   The minimal requirements include one semester of
discrete mathematics, one year of differential and integral calculus,
one semester of probability and statistics, and at least one of a list of
four upper level mathematics courses.   These are requirements that are in
place and being enforced for accreditation of Bachelor level programs in
Computer Science.   The proposal we have before us is for a Master's Degree
in Applied Computer Science which has essentially no mathematics requirement
of any sort for its students.   He believed that such a program would be
second class.

Mr. Pontius pointed out that this was not a program in computer science,
but an applied computer science program in the College of Applied Science
and Technology.

Mr. Spence thought the Information System sequence was a true applied
science program.   The other two sequences purport to be computer science
programs.   In light of the Provost's remarks, do we want to have our
children taught by high school teachers whose training in computer science
has met the standards of the data processing management association? Or do
we want teachers trained in the methods of real computer science organizations?

Mr. Schmaltz said Mr. Eggan's memo to Dean White noting graduate programs was
helpful.   He questioned the number of faculty who have Ph.D's in computer
science.   ISU has one Ph.D. and one undesignated in Computer Science.   Is
this typical?

Mr. Eggan ran down the list and analyzed other schools: Bradley University
was Math and Computer Science, most degrees were in mathematics; Sangamon
State University had three or four people who had retrained in computer science;
Western Illinois University has gone down in faculty -- those with Ph.D's in
computer science have been leaving; SIU - Carbondale, most are Ph.D's in com-
puter science: SIU - Edwardsville, most are Ph.D's in mathematics who are
teaching computer science; Northern Illinois University has 14, but not all
are computer science Ph.D's; Roosevelt University most have Math Ph.D's.
He summarized that most of the Ph.D's in Computer Science had been courted
by schools with better salaries and benefits.

Mr. Schmaltz asked how Mr. Eggan planned to hire these Ph.D's according to their
budget.   The Ph.D's they hired would probably not be Applied Computer Science.
Mr. Eggan answered: Probably not; but ISU can attract associate professors
who are not being promoted.

Dean White took the position that it is clear there is an appropriate concern about the faculty qualifications. The ACS faculty in the proposal do not look like traditional faculty in this discipline. However, this program is not a traditional academic discipline. The faculty do have extensive experience of immediate value to the ACS program. They are committed to the Applied Computer Science field.

Mr. Spence again stated that we were confusing computer science with data processing. It may be true that the information systems sequence is not a traditional graduate program. Is the training of teachers not a traditional graduate program? Should not the training of teachers be treated as in other departments on this campus.

It is obvious that the information on page 29 about accreditation is totally inadequate. There are accreditation bodies for bachelor's programs in this field which are in operation. At the least, there needs to be some statement that they exist, and for some reason why it would not be appropriate for our program to be accredited by that body. Will accreditation be sought within the next 5 years. Not applicable. The answer should be either yes or no. It is certainly not beyond the realm of possibility that within the next 5 years we will have accreditation standards in place in the State of Illinois. We do not have accreditation standards for teachers of mathematics within the State of Illinois. But, we will within the next five years.

Finally, Item 31, another Not Applicable answer. There are other programs within this department that should have been supported. The letters of support are mostly talking about data processing. The Arthur Andersen letter, for instance, mentions information processing. The letter from State Farm mentions entry level programming needs. We are confusing the two terms. He cannot support proposals that are in effect purporting to be computer science. Reference to a New York Times citation was preempted two days later by a report on national employment that identified occupations which are likely to become obsolete by the turn of the century because of more sophisticated technology. One of those identified was computer programming. We are creating a long-term solution to a short-term problem. We should think about this as taxpayers.

Ms. Balbach shared some of Mr. Spence's concerns. She had checked at the University of Illinois to see what they offered. They have four graduate programs: A Ph.D, and a Masters of Science in Computer Science, Master of Computer Science for students who specialize in some aspect of computer science, and a Master of Science in the teaching of Computer Science which is called a terminal degree enabling graduates to teach in Junior College, undergraduate colleges and high schools. She had concluded that the U of I programs were not too different from what ISU proposes.

Provost Strand addressed questions made earlier of the Provost's Office. The Proposal had been approved by the Graduate Council, by the Academic Affairs Committee, and the University Curriculum Committee. The Provost's Office also supports this proposal. Criticism reflects professional differences. It is difficult to reconcile these differences of opinion. He reiterated that this proposal has the support of the Provost and various committees.

Mr. Rosenbaum had a few questions about the letters included: Dean White's letter and some of its data, plus Dean Chapman's letter alluding to this data. It is stated that ISU has more doctoral level faculty members than other institutions in the state, including Western. Northern Illinois University has 14. He suggested a comparison ratio of doctoral faculty to total faculty. Only Western Illinois University has less than ISU. Generally the letters are laudatory. But the letter from Dr. Otto, Chair of the Math Department, pointed out that "development of the undergraduate ACS program held potential for enhancing the undergraduate mathematics programs but that potential was never realized."

Mr. Spence observed that the data about the 12 doctoral faculty came from projected 1986 figures. It was not the case at this time. The Applied Computer Science program at ISU grew up in the Math Department and would have had real computer science character disappeared. In being transferred to CAST, the computer science character disappeared. Dr. Otto's remarks could be interpreted in this light. He said proposals in computer science have been received before that have purported to do one thing, but in reality are quite different.

Mr. Rosenbaum commented regarding the student demand for such a program (bottom of page 19). He was not certain what conclusions would be deduced from the data presented here.

Mr. Eggan responded to the remarks concerning accreditation. A lot of discussion and concern about terminology had taken place at the national ACM conference in New Orleans. Accreditation has not been universally accepted by the ACM community. There is a lot of concern about what accreditation will do in classical computer science departments. Ours is not a data processing department, it is a computer information system. which is the term now used by professionals. The ACM has recognized that it is a different program. The letter from ACM notes future anticipated accreditation recommendations for departments regarding computer science. In Math twenty to thirty years ago, accreditation standards were developed that were impossible to live up to. Accreditation is two to three years down the road.

Mr. Eggan also responded to critique of the Arthur Anderson letter. Concerning the teaching sequence, they were also concerned about what had been going on in high schools. At the ACM meeting there was described a similar program to ISU that had been in existence approximately two years and was working out well. In the revision, Section 20, discussions indicated that we were seeking support to develop a sequence which would help to provide opportunities for individuals in different disciplines to learn about techniques and how the computer can help them make decisions. Flexibility is needed to do that, i.e., not to assume these students have large math backgrounds. They anticipated serving a much broader group of students.

Mr. Zeidenstein had questions about pages 12 and 13, "New Courses Needed to Support the Curriculum," which listed fifteen new courses. This seemed to be a large number of new courses. If there are problems hiring

people, how many of these new courses depend on new faculty that would be hired? He saw a fair amount of duplication in course concepts and asked to what extent these could be telescoped. He asked Mr. Spence if these courses could be taught without a greater mathematics background.

Mr. Eggan replied that it was more the case to start with present strengths and build as the program progresses. They would use sequencing and teach those courses. It would not be necessary to start up all the new courses at one time. A course such as "Interactive Graphics" would not be brought up immediately. Industrial Technology would help out in Graphics.

Mr. Spence replied to Mr. Zeidenstein's rephrased question about the absence of a larger math background. He did not know about all the courses, because in fact some of them did not exist yet. He responded about Courses 411 and 412. His objection was that these courses looked like 100 level courses in Applied Computer Science being taught in Pascal. It will be taught at a faster rate, with more expectations of the students. He thought a competent mathematics sophomore could easily handle 411 and 412. The Math Department for four years has been asking the ACS department to create a sequence of courses for math secondary education majors who wish to have some competence in teaching computer science at the high school level. He is dismayed to see ACS asking for this training at the graduate level, when for years Math has been requesting it at an undergraduate level. A 400 level course is not needed to teach what a math undergraduate knows. He cited an example of a course in Mathematical Modeling which would be of interest to a person who needs to know computer modeling. It involves simulating mathematical equations by computer. One needs to know the theory and then be able to use the computer to see what the theory predicts. If there were other prerequisites in mathematics, he would have fewer objections to the proposal.

Mr. Zeidenstein asked what level of mathematics is necessary to engage in performance of simulation modeling. Mr. Eggan said that to use modeling in math, one needs to know something about the subject matter of math. Statistics is used without math. He felt it was possible to provide training without the math background desired by the math department.

Mr. Zeidenstein asked if the Decision Support Sequence is mainly knowing and recognizing software, or in making software? Mr. Eggan said it is an evolving sequence, in its developmental stage. Courses will have to be improved. Regarding no ACS support for Math, there are 100 students with major or sequence in one or the other departments. There is a lot of interplay between the two departments for a large number of students. Math experts are writing software and non-math people need to know available software. Mr. Zeidenstein asked if at least one course was for evaluating software and not just surveying. Answer: Yes.

Mr. Zeidenstein asked if there would be courses where students create decision-making models. Mr. David Kephart, ACS, responded: Yes, there would be. Business students learn to build a model for business application, whereas Math students develop models that don't have immediate application.

XVI-131   Mr. Gamsky moved the previous question.   Motion carried on a voice vote.

           Ms. Balbach restated the motion: To approve the proposal for Master's Degree
           in Applied Computer Science.

(XVI-130) Motion carried on a voice vote with some negative votes.

Zeidenstein Resolution   (2.6.85.1)

Mr. Zeidenstein asked if the Senate could have the resolution as an Action
Item at the next Senate meeting.   Ms. Gowdy suggested an Information Item
rather than Action Item.

Mr. Mohr thought the Senate should straighten out this matter before the
present Senate disbanded.   He gave a sketch of how the Senate had arrived
at this point.   In September the URC was asked to look into Market Equity
and Salary Minima and report back.   Two years ago the entire ASPT process
was revised.   Are we going to do this every year?   He urged debate and vote
on the Zeidenstein resolution.

Mr. Zeidenstein felt it would not be fair to "clean-up" everything, and not
leave it for the new Senate when issues are complicated.   It would be more
desirable to carry over this issue.   He would be opposed to any action
that would preclude the next Senate meeting where senators would receive
the ad hoc committee's report, the hearing report, etc.   He preferred to
hold back his resolution as an alternative.   The only reason to adopt his
resolution tonight would be to prevent administrative action.   It wouldn't
and would merely register disapproval.   He hoped the Provost and Senate
would not be precipitous, for two to three weeks.   We ought to do this as
people who respect each other's opinions, and in a fair manner.

Ms. Gowdy asked if he wished to postpone his resolution.

XVI-132   It was moved by Zeidenstein (Second, Ken Strand) to postpone the Zeidenstein
           resolution to Information Item on April 10, 1985.

           It was clarified that defeat of this motion would make the resolution an
           Action Item this evening.

           Mr. Mohr spoke against the motion.   The Zeidenstein motion had been
           introduced several meetings ago, and the Senate had had a lot of time to
           look at it.   Why can't the Senate deliberate and act?   We seem to have
           long discussions with no structure.   Senate is below par on this issue.
           The opinion of some senators was that people were trying to get you to do
           what you don't want to do.

           Mr. Mohr said the Ad Hoc Committee Report had not had time to be considered.
           The open hearing on the report was last night.   He questioned the Parlia-
           mentarian: Does an ad hoc committee of this Senate exist beyond this Senate?
           Mr. Boaz replied that the committee would probably continue for continuity
           purposes.   Only a third of the Senate faculty members were not continuing.
           Ms. Gowdy pointed out that the report of the ad hoc committee did exist on
           paper.   The committee would present a further concluding report from the
           open hearing held March 26th.

Mr. Mohr said this Senate should make a decision so that the next Senate would know where we stand on the issue.

Mr. Eimermann had a different sense of events. At the time of formation of the ad hoc committee, there were various opinions and discussions. He thought the Zeidenstein resolution and the ad hoc committee report should be considered simultaneously. He briefly restated what had occurred. There were four different pieces of information before the Senate: 1) a report by the University Review Committee that sought to clarify low salaries; 2) a Faculty Affairs Committee report which endorsed the URC report and further suggested that the ASPT document did not authorize the Provost to take monies off the top of salary funds for adjustments; 3) one resolution offered by Zeidenstein and three by Eimermann seeking to put Senate on record as to what was approved and what was not approved; and 4) a memorandum from the Provost to the URC in which he indicated that because the URC recommendations did not go far enough he intended to take money off the top of salary adjustment funds, for distribution through administrative channels.

Mr. Mohr said the Senate did not receive that letter. He had asked specifically in Senate meeting if the money would be taken off the top of salaries, and the Provost had answered, "No". Mr. Eimermann commented that the letter was sent to the URC.

Mr. Eimermann described how he perceived the Provost's actions. Nowhere was there before the Senate any specification as to the precise changes the administration used. His motion to create the ad hoc committee was to give one last effort for compromise. He thought his fellow senators agreed to an honest attempt at compromise on this subject. The ad hoc committee has presented a statement as to what the specific administrative concerns are and some specific recommendations as to language changes in the ASPT. The open hearing gave cause for adjustments and refinement in report before submittal. The ad hoc committee was trying to provide a concrete alternative for Senate to consider as a compromise. He hoped this Senate, since there is not time for consideration by this Senate, would approve the Zeidenstein motion.

XVI-133   Mr. Watkins moved the previous question.

Mr. Zeidenstein offered an amendment to his motion: for the URC report to be included in the packet for the next Senate.

Ms. Gowdy understood that the URC, FAC, and pertinent documents did go with the Eimermann and Zeidenstein resolutions. Mr. Zeidenstein approved, if documents were assured to be dispensed in the Senate packets. Ms. Gowdy said the Executive Committee would see that the proper documents were dispensed.

Mr. Mohr asked if the URC letter would be included? He thought it would be courteous for senators to share vital information with each other.

(XVI-132)   Motion to postpone the Zeidenstein resolution to information item on 4/10/85 carried with negative votes.

Mr. Watkins asked to be excused from the meeting as he was not feeling well.

Committee Reports

Academic Affairs Committee.   No Report.

Administrative Affairs Committee.   No Report.

Faculty Affairs Committee.   Mr. Rosenbaum commented that the University Attorney had not responded about the problems they were checking on, so they would leave that to the new Faculty Affairs Committee to deal with.

Rules Committee.   No report.

Student Affairs Committee.   No report.

JUAC Committee.   Mr. Eimermann reported that JUAC had been investigating issues of tax shelter and other benefits, such as increasing tuition benefits.

Ad Hoc Committee.   Mr. Eimermann reported that the committee held an open hearing on March 26th.   Approximately 70 people attended.   Meeting lasted approximately 2-3/4 hours.   Comments fell into three categories: 1) opposition to the idea of departments having to accept a small number for exceptional merit; 2) opposition to market concept that one person should make more than another; 3) opposition to counter-offer fund.   Committee announced that they will be taking written comments, and he encouraged senators to solicit comments be in by next Tuesday.   Timetable for comments to be in by Executive Committee meeting of April 3 was not feasible.
Committee will present report and new proposals to the new Senate.

XVI-134   Motion to adjourn by Pontius (Second, Charnogorsky) passed on a voice vote. Senate adjourned at 9:30 p.m.

FOR THE ACADEMIC SENATE

KYLE SESSIONS, SECRETARY

NAME	ATTEN-DANCE	VOTE						VOICE VOTE		
		MOTION #	MOTION #	MOTION #	MOTION #	MOTION #	MOTION #	MOTION #	Y	N
BALBACH	P							XVI-127	X	
BEDINGFIELD	Ex.							XVI-128	X	
BELKANP	P							XVI-129	X	
BOWEN	P							XVI-130	X	
CHARNOGORSKY	P							XVI-131	X	
CHRISTIAN	P							XVI-132	X	
CLARK	A							XVI-133	X	
EIMERMANN	P							XVI-134	X	
GAMSKY	P									
GETSI	P									
GLEN	P									
GORDON	P									
GOWDY	P									
GRAFF	P									
HANLON	EX.									
HARDEN	P									
JAHRKE	P									
LANDFAIR	A									
LORBER	P									
LUTHER	A									
MARCHIO	A									
MASON	EX.									
MAHORN	EX.									
MCCRACKEN	A									
MOHR	P									
MULCAHY	EX.									
NELSEN	EX.									
PARR	P									
PETROSSIAN	P									
PILAND	P									
PONTIUS	P									
PRITNER	EX.									
ROSENBAUM	P									
SCHMALTZ	P									
SESSIONS	P									
SHANE	P									
SPENCE	P									
SPENCER	P									
STOKES	P									
STRAND,D.	P									
STRAND,K.	P									
TARULIS	P									
TAYLOR	P									
TOWNSEND	A									
WATKINS	P									
WHITCOMB	P									
ZEIDENSTEIN	P									

To: Charles A. White, Dean
       Graduate School

From: Larry Eggan, Chairperson
       Applied Computer Science

Date: March 21, 1985

Re: Graduate Council concerns #16

    Below please find some data on relative numbers of faculty and doctoral faculty at institutions which offer a master's degree but not a doctorate. The departments with computer science in the Mathematics Department are marked (Math).

University	Total faculty	Doctoral faculty
Bradley	8	7
Sangamon State (Math) MA(W.C.S. Concentration)	10	7
Western Illinois	16	4
SIU-Carbondale	13	13
SIU-Edwardsville (Math)	7	6
Northern Illinois	27	14
Roosevelt (Math) (Those in CS)	22 7	20 7

ISU (Now)
  (Fall 85)
    Fall 86
	21
	21
	26
		5
		7
		12

ARTHUR ANDERSEN & CO.

33 WEST MONROE STREET
CHICAGO, ILLINOIS 60603
(312) 580-0033

March 11, 1985

Dean Charles A. White
Dean of Graduate School
Illinois State University
Normal, Illinois   61761

Dear Dean White:

        This letter is in support of the proposed Master of
Science Degree in Applied Computer Science at Illinois State
University. I asked Larry Eggan about this and he provided me
with a summary catalog description.

        I am a partner in the Management Information Consulting
Division of Arthur Andersen & Co. My position is Division Head
of our Chicago World Headquarters Technical Services Organization
(TSO). I have been visiting Illinois State for the past four
years recruiting Computer Science majors. This year TSO expects
to hire six ACS majors from Illinois State. We have seven ACS
graduates currently employed and they have done quite well.

        Currently our Chicago office (and Chicago World
Headquarters), including Audit, Tax and Consulting, employs over
100 Illinois State graduates as professionals.

        We are quite interested in hiring ISU graduates with an
MS in Computer Science. Our interest pertains to the Information
Systems sequence and the Decision Support sequence.

        Our Management Information Consulting practice employs
almost 7,000 professionals worldwide and is growing at 10-15% per
year. Seventy percent of our work relates to design and
installation of computer-based management information systems
(20% design and 50% installation including program specifica-
tions, programming, testing, user training, conversion
preparation, and hardware and software selection.) Due to the
changing technology, the scarce resource in meeting our clients'
needs is very often the person with the right technical skills
and excellent technical aptitude.

Dean Charles A. White   -2-   March 11, 1985
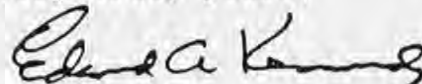
     Almost all of our U.S. consulting personnel are recruited directly from universities - 40% are MBA's, 15% computer science majors, 10% engineers, with the balance mainly having business degrees.

     We would like to have more employees with advanced degrees. In the computer science field, however, we have two problems: 1) there is not a large supply of MS Computer Science majors, and 2) some of the existing programs at the bachelor and masters level are somewhat unrelated to our work, being more math, engineering and hardware related.

     The graduates of your present Applied Computer Science program have been well-prepared for our work with an emphasis on COBOL, IBM mainframe computers, methodology, structured techniques, software, microcomputers, directed projects, etc. I am happy to say that every one of your proposed 400 series courses seems relevant to the kind of information processing done in our work and by our clients. It is only with a undergraduate program such as yours that I can be so enthusiastic about a graduate program in computer science. At some other universities I would feel the student might be going further off on a tangent from information processing as used in business.

     Please feel free to call me at (312) 580-0033 if you have any questions.

Very truly yours,

Edward A. Kennedy

GW

Copies to: Mr. Lawrence C. Eggan
           Mr. David Kephart
           Illinois State University
           Normal, Illinois

State Farm Mutual Automobile Insurance Company
Bloomington, Illinois 61701

NORMAN L. VINCENT
VICE PRESIDENT-DATA PROCESSING
PHONE (309) 766-2349

March 14, 1985

Dr. Lawrence C. Eggan, Chairman
Applied Computer Science Department
Illinois State University
Normal, Illinois 61761

Dear Dr. Eggan:
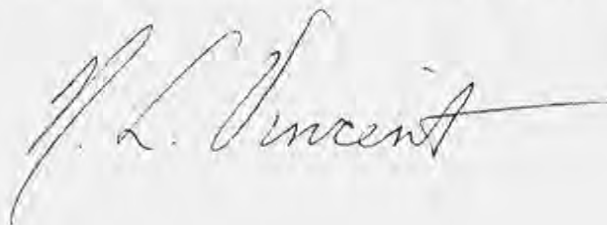
Rich Buchanan tells me he has been in touch with you about your proposal to establish a Master's program in Applied Computer Science. I have reviewed your New Academic Program Request and offer the following comments in support of the program.

State Farm relies heavily upon ACS-type curricula for our entry level programming needs. We recruit at more than thirty universities each semester and hire well over one hundred each year. Illinois State's ACS program has consistently provided us with strong candidates and ranks number one in providing the largest number of employees each year. I view the addition of a Master's in ACS as a logical extension of the current curriculum at the Bachelor's level.

Presently, we find the skill level of your graduates blends nicely into our extensive entry level training program enabling a smooth transition from the training environment into the "real world" of our programming functions. The Master's program as described would enable a significant number of our programming and management staff to enhance their inventory of skills, both technically and administratively. In addition, I believe that graduates of the Master's program seeking career employment would compete very well in the marketplace -- not just at State Farm.

If we can help you as the approval process continues, please call.

Sincerely,

N. L. Vincent

NLV/dh

TO: Dr. C. Arthur White, Dean
          Graduate School

FROM: Wayne Andrews, Acting Chairperson
          Industrial Technology

RE: Master's proposal for Applied Computer Science

DATE: March 20, 1985

      I have reviewed the proposal for the master's degree in Applied
Computer Science and wish to endorse this effort wholeheartedly. The
need has been clearly established for such a program, and Illinois State
University has an opportunity to be on the cutting edge of curriculum
in higher education with the establishment of this program.

      From a College perspective, this effort is in keeping with our
mission, which is to provide programs which emphasize the relationship
between theory and practice. It will also enable our College to meet
another objective, which is to build and strengthen the graduate program
in CAST.

      From a Departmental viewpoint, the addition of this program has the
potential to enhance our efforts. In an era of computer aided manufacturing
(CAM) and computer aided design (CAD), we expect our programs to attract
more students at the graduate level. Some of the course offerings proposed
in the ACS proposal may enhance our Departmental offerings. Indeed, the
presence of such a program on campus may enable us to attract a better
quality candidate into our master's program.

      As you communicate support of the ACS proposal from the Graduate
school, please add a vigorous endorsement from Industrial Technology. Thank
you for your consideration.

cc: Dr. Betty Chapman
      Dr. Larry Eggan

3/18/85   xc - Dean E. Chapman
Larry Eggan

Illinois State University

College of Arts and Sciences
Department of Economics
DATE: March 14, 1985

TO: C. A. White, Dean, Graduate School

FROM: Alan E. Dillingham, Chairperson, Department of Economics

RE: Proposed Master of Science in Applied Computer Science

I have reviewed a copy of the ACS Department's proposed Master's program in Applied Computer Science. I have also had a chance to review the various memos from the Academic Senate, the KGraduate kSchook, the Academic Affairs Committee, etc. regarding this proposal. I have a few brief comments about the proposal.

Although I am not in a position to assess the demand for this specific degree program, I do believe that ACS has made a fairly strong case for the program. It seems like ACS has given careful thought to the specific structure of the program, viz., the three sequences. They have built upon both ISU's traditional reputation in teacher education and the many strong calls for improved math/science education and computer literacy. From the varied memos documenting previous discussion of this program, it is clear that there is an appropriate concern about the faculty qualifications. The ACS faculty listed in the proposal do not "look" like traditional graduate program faculty. However, this program is not a traditional academic discipline. It does seem that the faculty have extensive experience of immediate value to ACS programs and that they are committed to the applied computer science field. The ACS Department argues that a master's program would facilitate faculty recruitment and thus eventually further strengthen the ACS faculty. I believe this argument is an important and valid one. This argument certainly holds in Economics. It is obvious that our position in the University and our resource base hinges on our undergraduate program. But, nonetheless, without our graduate programs, we would be unable to recruit the quality faculty that we have hired in recent years. Thus, it is conceivable that a Master's program in kACS would strengthen the large and very popular undergraduate program in two ways. It would help the Department recruit new tenure-track doctoral faculty and it would provide a pool of graduate students that could be used to staff some undergraduate ACS offerings.

The ACS Master's proposal also mentions the possible interest of Economics graduate students in such a program. It is not clear that our present graduate students would gain a tremendous amount by such a program. This is due in part to the probable difficulty of getting into ACS courses. However, the Economics Department does offer courses that would be complementary to the decision support sequence. Larry Eggan and I have discussed in preliminary fashion the possible options that KEconomics might be able to provide graduate ACS students. These courses would include our upper-level and graduate theory, mathematical economics, and quantitative methods courses.

I hope this information is useful to the Graduate School in its review of this proposed program.

Normal-Bloomington, Illinois
Phone: 309/438-8625

Stevenson 425
Normal, Illinois 61761

Illinois State University

College of Arts and Sciences
Mathematics Department

TO: C. A. White, Dean
       Graduate School

FROM: Albert D. Otto, Chair
       Department of Mathematics

DATE: March 21, 1985

RE: Impact of the Proposed ACS Masters Degree upon Programs
      in the Department of Mathematics

1. Based upon the description of the program and

   courses in the proposal I see no overlap with existing

   Mathematics courses or programs.

2. The sequences in Decision Support and Teaching hold potential

   for enhancing existing programs in Mathematics. However, it

   was also said that the development of the undergraduate ACS

   program held potential for enhancing the undergraduate

   mathematics programs but that potential was never realized.

ADO:dkb

cc: Larry Eggan

TO: Dr. Larry Egan, Chairperson
        Applied Computer Science

FROM: James A. Hallam

DATE: March 1, 1985

    The purpose of this memo is to indicate my support for the proposed Master of Science in Applied Computer Science. It appears as though it would in no way conflict with the undergraduate Business Information Systems bachelor's degree program currently being developed in the College of Business.

JAH/dkf

cc: Dean Nappi

MEMO | ísu ILLINOIS STATE UNIVERSITY

College of Business
Office of the Dean

MAR 08 1985

TO: Dean Art White

FROM: Andrew T. Nappi *Andrew Nappi*

SUBJECT: Master's Degree in Applied Computer Science

DATE: March 7, 1985

This communique will serve to indicate my strong support for the proposed Master's Degree Program in Applied Computer Science. I have carefully reviewed the proposal and have had several discussions with my department chairs, Larry Eggan, and Dean Chapman. The proposed program in Applied Computer Science is designed to meet specialized educational needs. Moreover, the program will not duplicate or over-lap with the Business Information Systems program which the College is in the process of developing.

We hope that the program being proposed by Applied Computer Science will be approved and urge you to support it. Please feel free to contact me if you have any questions.

ATN:jh

Illinois State University

College of Continuing Education and Public Service
Office of the Dean

March 20, 1985

Dr. Elizabeth A. Chapman, Dean
College of Applied Science and Technology
Illinois State University
Normal, Illinois 61761
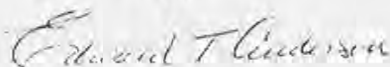
Dear Dean Chapman:

The proposed Master of Science (M.S.) in Applied Computer Science
with Sequences in Information Systems, Decision Support and Teaching
is fully supported by the College of Continuing Education and Public
Service.

The three proposed sequences provide educational opportunity
for varied audiences. I am pleased to see that retraining opportunities
will be available to teachers and advanced studies for individuals
currently employed in data processing related professions would be
accessible for continuing education and professional development pur-
poses.

Given the present and future impact of information processing
technology, your proposed Masters Degree Program is both necessary and
timely if Illinois State University is to retain a leadership position
in higher education.

Sincerely,

Edward T. Anderson
Dean

ETA:jh

Illinois State University

College of Applied Science and Technology
Office of the Dean
Turner 145
Phone: 309/438-7602

MAR 20 1985

TO: Dr. Lloyd Watkins
         Dr. David Strand
         Dr. Warren Harden
         Dr. Neil Gamsky
         Dr. Art White
         Dr. Larry Eggan

FROM: Dr. Betty Chapman

DATE: March 13, 1985

RE: Master's Proposal in Applied Computer Science

On Wednesday, March 27, the master's proposal in Applied Computer
Science comes before the Faculty Senate for vote. I stated at
the fall CAST faculty meeting that such a program is needed by
our university and that the ACS department is in a good strategic
position to offer such a degree. Since that time, my belief has
become stronger.

The University Academic Plan (1985-90) acknowledges CAST's com-
mitment to the expansion of its graduate offerings and calls for
the development of graduate programs where there are natural
extensions of strong undergraduate programs. Further, the Plan
emphasizes the importance of demonstrating a societal need when
developing new programs. The ACS undergraduate program has grown
rapidly over the past decade and is just now showing an appro-
priate balance between the number of students enrolled and the
faculty available. Working to achieve this balance has not been
easy. In the fall of 1982, the ratio of majors to faculty was
60/1 as compared to the college average of 25/1. This ratio has
improved by adding staff and capping enrollment, so that in the
fall of 1984, this ratio was 37/1 with further improvement
projected for the fall of 1985. While the resource question has
been systematically addressed, the strength of the undergraduate
program might be better characterized by the following facts:

1.   Applied Computer Science has more honor students
      than any other department on campus. Last year one
      out of every eight honor students was an ACS major.

2.   The number of paid professional practice students
      for spring, 1985, totaled 42. This included
      several Coop placements in companies which bypassed
      Big Ten schools to recruit our student majors in
      Applied Computer Science.

Normal-Bloomington, Illinois   Normal, Illinois 61761

Departments

Agriculture; Applied Computer Science;   Health Sciences; Home Economics;
Criminal Justice Sciences, Health, Physical   Industrial Technology;
Education, Recreation and Dance   Military Science

Equal Opportunity/Affirmative Action University

3. The Placement Office reports that employers nation-
   wide come to recruit ACS students. The ACS Depart-
   ment is one of the two most highly recruited
   departments on campus.

4. The department had 776 majors in fall, 1984, with
   21 faculty positions.

5. The ACS students have a "lifestyle" floor in
   Watterson Towers which is equipped with computer
   terminals linked to the campus mainframe.

6. The number of ISU faculty in ACS is already larger
   and has with more doctoral level credentials than
   many schools in the state who already have a master's
   program; e.g., Western, Northern. Furthermore, ISU
   faculty are sought after as consultants by indus-
   try; speakers and leaders in their professional
   associations; and are active in writing both soft-
   ware and textbooks.

7. The acquisition this year of a minicomputer capable of
   doubling the students' "hands on" access to computing
   machines in the department will greatly enhance
   the student learning resources in Applied Computer
   Science.

The demand for such a program is supported by Bureau of Labor
projections of growth much faster than average for computer
systems analysts and computer operating personnel over the 1980's
with an upward spiral of wages as the shortage of trained per-
sonnel is expected to continue. The presence of over a thousand
local data processing employees in the Twin Cities at Country
Companies and State Farm, many of whom have expressed an interest
in the master's degree program suggests that the demand is present
within our immediate service region.

In this open letter to the academic community, I urge you to join
me in support of this degree proposal.

NEW ACADEMIC PROGRAM REQUEST

1. Name of Institution: Illinois State University

2. Title of the Proposed Program:
    Master's Degree Program in Applied Computer Science
    Master of Science (M.S.) in Applied Computer Science
        with three sequences:
        - Information Systems
        - Decision Support
        - Teacher Retraining
    Level of Proposed Degree Program: Master's

3. 6-digit CIP code: 11.0501

4. Proposed Date for Initiation of Program:
    Fall Semester, 1986.

5. Date of Submission:
    September, 1984

6. Site: Illinois State University, Normal, Illinois.

MISSION

The mission of the College of Applied Science and Technology is to provide programs which emphasize the relationship between theory and practice (Illinois State University 1984-89 Academic Plan). The Applied Computer Science Department has been extremely successful in fulfilling this collegiate goal at the undergraduate level (see the 1983-88 Academic Plan). The department now proposes to expand its mission by offering a degree in applied computer science at the graduate level.

Applied computer science is the organized study of computer-related problem-solving techniques that yield solutions to important problems in today's world. The Applied computer scientist applies systematic design and development procedures in the creation of effective, reliable and maintainable software systems. Also studied are computer simulation and modeling techniques. Communication skills and principles of teamwork are studied as necessary components of the effective solution to large complex problems. Also studied are the dominant types of hardware, system software, and application development tools which provide the computer environments in which problem solutions must be designed and implemented.

7. Program Objectives:

GENERAL OBJECTIVES

The 1983-1988 University Academic Plan (Section IV,p.1) states that "The common element among the disciplines in the college traditionally has been the applied nature of the professional endeavors of the graduates and the disciplinary focus, service, and research of the faculty." The Master of Science degree program in Applied Computer Science has six general objectives which will reinforce the applied nature of the Graduate Program of the College of Applied Science and Technology:

1. Prepare a person to analyze complex and intricate problems and to critically evaluate the implications of proposed software solutions to those problems.

2. Provide a solid foundation of knowledge and a conceptual framework that can accommodate the rapidly occurring changes in the tools and techniques of applied computer science.

3. Provide an extensive exposure to current tools and techniques for applying research results to the solution of real problems.

4. Provide students with a substantive background and experience in utilizing the extensive research literature in areas relevant to applied computer science.

5. Improve each student's ability to communicate with clients, colleagues, and other users of computer systems.

6. Provide each student with an opportunity to apply the principles acquired in conventional academic course work to the solution of practical problems of business, industry, government and education.

In addition to the general objectives stated above, each of the three sequences, Information Systems, Decision Support and Teacher Retraining, in the proposed degree program has been designed to meet a set of more specialized objectives.

INFORMATION SYSTEMS OBJECTIVES

1. Prepare a person to analyze complex problems of business, industry and government, and to design, develop, and implement appropriate, correct, and reliable computer software systems that solve those problems.

2. Prepare a person to manage the development of complex yet reliable software systems through effective guidance and management of software development teams.

DECISION SUPPORT OBJECTIVES

1. Prepare a person to serve as a decision support specialist with expertise in computer simulation, modeling, and analysis.

2. Provide each student with knowledge of current tools and techniques for designing and developing computerized simulations and models, and for effectively presenting the results produced by these simulations.

TEACHER RETRAINING OBJECTIVES

1. Prepare persons who already possess valid teaching credentials to be qualified teachers of applied computer science at the high school or community college level.

2. Prepare high school teachers to serve as resource persons to advise teachers and administrators on instructional computer hardware and software needs.

In Appendix C, the conformity of this proposed program with the criteria for new programs which are stated in the 1985-90 Academic Plan is presented. This program has been identified for development in many previous Academic Plans.

8.   Impact on Other Programs

This program does not replace any existing program.

Increased demand is anticipated for the following 300 level courses within the Department of Applied Computer Science: ACS 355, ACS 363, ACS 364, ACS 376, and ACS 378. Most of the increase will be concentrated in ACS 355, ACS 376, and ACS 378.

The requirement of Technical Writing, English 349, may require the English Department to offer an additional section of this course. (The English Department has furnished a letter of agreement. See Appendix A.)

While it is difficult to accurately predict the impact of the proposed program on other University programs, there is a potential for it to have beneficial effects on the programs of several departments. The benefits would be to students who choose graduate courses in Applied Computer Science which might be of special value to them, and from students in this program who elect courses outside of Applied Computer Science.

The departments of Economics and Mathematics and the College of Business all have students who have a collateral interest in some of the advanced Applied Computer Science courses made available by this proposal. Some students in the Information Systems Sequence, because of their special applications background and interest, will elect advanced courses in accounting, communications and management.

Students in the Decision Support Sequence will be expected to choose electives from Economics or Mathematics. In addition, the Teacher Retraining Sequence will provide many students who will be required to take courses from the College of Education, and who may choose electives from such diverse departments as Art, Music, Mathematics, Psychology, Agriculture, and Industrial Technology.

CURRICULUM

9. Catalog Description

MASTER OF SCIENCE DEGREE IN APPLIED COMPUTER SCIENCE.

The Department of Applied Computer Science offers work leading to a Master of Science degree in Applied Computer Science. Three sequences are available: Information Systems, Decision Support, and Teacher Retraining. Each sequence has its own admission and core requirements. Elective courses taken without the prior approval of the graduate advisor may not count towards a degree. There are two options within each sequence.

Option I: Option I is a 32 hour program that requires a thesis. Of the 32 hours required, at least 23 must be in Applied Computer Science. Exclusive of hours earned for Master's Thesis 499, all sequences require a minimum of 15 hours of 400-level course work with at least 12 of these in Applied Computer Science.

Option II: Option II is a 39 hour program that requires a synthesizing experience consisting of 6 hours of Graduate Directed Project 491. Of the 39 hours required, at least 27 must be in Applied Computer Science. The Information Systems Sequence requires a minimum of 24 hours of 400-level course work with at least 21 of these in Applied Computer Science. The Decision Support and Teacher Retraining Sequences require a minimum of 21 hours of 400-level course work with at least 18 of these in Applied Computer Science.

INFORMATION SYSTEMS SEQUENCE

REQUIRED HOURS (OPTION I)

ACS 499 Master's Thesis	4-6 hrs
Core courses	12 hrs
Elective courses	14-16 hrs
TOTAL REQUIRED HOURS	32 hrs

REQUIRED HOURS (OPTION II)

ACS 491 Graduate Directed Project	6 hrs
Core courses	12 hrs
Elective courses	21 hrs
TOTAL REQUIRED HOURS	39 hrs

CORE COURSES

ACS 460 Software Development Issues	3 hrs
ACS 378 Database Processing	
or ACS 478 Advance Database Management	3 hrs
ACS 476 Data Communications & Networks	3 hrs
or ACS 477 Interactive Application Systems	
ENG 349 Technical Writing	
or BEA 416 Advanced Managerial Business	
Communication	3 hrs
TOTAL CORE HOURS	12 hrs

DECISION SUPPORT SEQUENCE

REQUIRED HOURS (OPTION 1)

ACS 499 Master's Thesis	4-6 hrs
Core Courses	12 hrs
Elective Courses	14-16 hrs
TOTAL REQUIRED HOURS	32 hrs

REQUIRED HOURS (OPTION II)

ACS 491 Graduate Directed Project	6 hrs
Core Courses	12 hrs
Elective Courses	21 hrs
TOTAL REQUIRED HOURS	39 hrs

CORE COURSES

ACS 444 Discrete System Simulation	3 hrs
(more advanced version of ACS 344)	
ACS 445 Applied Computer Modeling	3 hrs
(more advanced version of ACS 345)	
ENG 349 Technical Writing	
or BEA 416 Advanced Managerial Business	
Communication	3 hrs
ACS 456 Principles of Interactive Graphics	3 hrs
TOTAL CORE HOURS	12 hrs

TEACHER RETRAINING SEQUENCE

REQUIRED HOURS (OPTION I)

ACS 499	Masters Thesis	4-6 hrs
Core courses		12 hrs
Elective courses		14-16 hrs
TOTAL REQUIRED HOURS		32 hrs

REQUIRED HOURS (OPTION II)

ACS 491 Graduate Directed Project		6 hrs
Core courses		12 hrs
Elective courses		21 hrs
TOTAL REQUIRED HOURS		39 hrs

CORE COURSES

ACS 355	Microcomputer Application and Design II	3 hrs
ACS 407	Applications Software for Micro-computers	3 hrs
ACS 411	Pascal with Data Structures I	3 hrs
ACS 412	Pascal with Data Structures II	3 hrs
TOTAL CORE HOURS		12 hrs

SUGGESTED CONCENTRATION ELECTIVES:

High School:

ACS 401	Intro to Microcomputers in the School	3 hrs
ACS 413	Survey of Computer Languages used in Education	3 hrs
ACS 432	Software Design and Systems Development	3 hrs
C&I 433	Software Evaluation	3 hrs

Community College:

ACS 363	Intro to Systems Development	3 hrs
ACS 364	Software Design	
or ACS 460	Software Development Issues	3 hrs
ACS 372	External Data Structures	3 hrs

10. ELABORATION OF OBJECTIVES

GENERAL OBJECTIVES
The achievement of the first five general objectives will be directly supported by every course in the proposed Master's degree program. In addition, objectives 1, 5, and 6 are dicussed further.

General objectives 1, the preparation of persons to analyze complex problems and to critically evaluate proposed solutions, is most directly supported by:
ACS 444--Discrete System Simulation

ACS 445--Applied Computer Modeling
ACS 460--Software Development Issues
ACS 463--Methods of Project Development
ACS 476--Data Communications and Networks
ACS 478--Advanced Database Management
ACS 491--Graduate Directed Project
ACS 499--Master's Thesis

General objective 5, the improvement of a student's communication ability, is most directly supported by:
ENG 349--Technical Writing
BEA 416--Advanced Managerial Business Communication
ACS 460--Software Development Issues
ACS 477--Interactive Application Systems
ACS 491--Graduate Directed Project
ACS 499--Master's Thesis

General objective 6, the opportunity to apply classroom learning to real-world situations, is available in many of the courses in the curriculum because most of them will include significant project assignments, but this objective is most directly supported by:
ACS 491--Graduate Directed Project
ACS 499--Master's Thesis

INFORMATION SYSTEMS OBJECTIVES

The preparation of persons to design, develop, and implement software solutions (Information Systems Objective 1) is most directly supported by:
ACS 455--Advanced Microcomputer Applications
ACS 456--Principles of Interactive Graphics
ACS 460--Software Development Issues
ACS 467--Software Testing and Maintenance
ACS 491--Graduate Directed Project

The preparation of persons to manage the development of software (Information Systems Objective 2) is primarily supported by:
ACS 463--Methods of Project Development
ACS 491--Graduate Directed Project
The objective is supported to a lesser extent by:
ACS 460--Software Development Issues
ACS 478--Advanced Database Management

DECISION SUPPORT OBJECTIVES

Both objectives of the Decision Support Sequence are supported directly by three courses:
ACS 444--Discrete System Simulation
ACS 445--Applied Computer Modeling
ACS 456--Principles of Interactive Graphics

TEACHER RETRAINING OBJECTIVES

There are two areas of concentration within this Sequence: (1) retraining of teachers from other disciplines to teach computer science, and to serve as the central resource person for a high school's computer hardware and software development, and (2) retraining of teachers from other disciplines to teach computer science at the community college level.

The teacher retraining objective reflects the shortages that exist and the growing needs for computer science teachers both at the high school level and at the community college level. There are currently no certification requirements for teaching computer science at the high school or college level. At the high school level, a computer science teacher must be certified in the subject matter of the department in which computer science is taught, and must have at least two courses in computer science or data processing. The applications orientation of the department easily accommodates this situation.

The high school retraining concentration focuses directly on the knowledge and skills needed to effectively and competently teach high school computer science. Specific courses which directly support this objective include:
    ACS 355 Microcomputer Applications and Design II
    ACS 407 Applications Software for Microcomputers
    ACS 411 Pascal with Data Structures I
    ACS 412 Pascal with Data Structures II
In addition, this concentration focuses on the need within the high school for a resource person to advise teachers and administrators on their instructional computer hardware and software needs. Specific courses which directly support this objective include:
    ACS 401 Introduction to Microcomputers in the Schools
    ACS 413 Survey of Computer Languages Used in Education
    C&I 433 Software Evaluation

The community college teacher retraining concentration focuses on the skills needed in business data processing. The community college concentration prepares teachers to instruct students who will be competing for jobs in business data processing, or who will be transferring to senior college level computer science departments. Specific courses which directly support this objective include:
    ACS 355 Microcomputer Applications and Design II
    ACS 363 Introduction to Systems Development
    ACS 364 Software Design
    ACS 372 External Data Structures
    ACS 407 Applications Software for Microcomputers
    ACS 411 Pascal with Data Structures I

ACS 412 Pascal with Data Structures II
ACS 460 Software Development Issues

11. Admission and prerequisite requirements:

ADMISSION REQUIREMENTS

All University and Graduate School requirements for admission to a degree program of the Graduate School at Illinois State University will apply. Additional departmental requirements are listed here.

Applicants must have a Baccalaureate degree from an accredited university or college with a grade point average (GPA) of at least 3.0 (B), on a 4.0 scale, calculated over the last 60 undergraduate hours. The undergraduate degree need not be in computer science.

Applicants must submit scores from the Graduate Record Examination (GRE). The GRE verbal and quantitative scores must each exceed 400, and the sum of the two scores must exceed 1000.

Each sequence within the Master of Science degree program has more specific entrance requirements:

For the **Information Systems Sequence** applicants must have had training or experience equivalent to the following courses:
    ACS 274 (PL/1) or ACS 272 (COBOL)
    ACS 278 (Data Structures)
    ACS 363 (Systems Development)
    MAM 100 (Business and Economic Statistics).

Applicants for the **Decision Support Sequence** must have had probability and statistics and present training or experience equivalent to the following courses:
    ACS 274 (PL/1)
    MAT 146 (Calculus II)
    MAT 220 (Matrix Algebra)

For the **Teacher Retraining Sequence**, applicants must have a teaching certificate or teaching experience. The high school concentration requires a background sufficient for success in ACS 355. Those interested in the community college concentration must have had training or experience equivalent to the following courses:
    ACS 255 Microcomputer Application and Design I
    ACS 272 Cobol
    ACS 283 Assembly Language Programming

Each student's transcript will be reviewed for deficiencies, and the Graduate Faculty Advisor, in consultation with the student, will determine the most expeditious way to remove the deficiencies.

12. Proficiency examinations, transfers, and prior learning:

PROFICIENCY EXAMINATIONS

Students with deficiencies in prerequisites for the Master of Science program in Applied Computer Science may take the necessary course for no graduate credit or pass an appropriate proficiency examination. The Applied Computer Science Graduate Program Committee will select and administer the proficiency examinations. No proficiency tests will be allowed for required or elected courses in the Master of Science degree program in Applied Computer Science.

TRANSFER CREDIT

The Illinois State University Graduate Catalog specifies the limits on transfer credit that can be applied towards the Master of Science degree.

WAIVERS FOR PRIOR LEARNING

In extraordinary cases where a student has significant prior learning experience in a relevant prerequisite area but has not taken the prerequisite course, the Applied Computer Science Graduate Program Committee may waive prerequisites based upon the evidence. Alternatively, the Applied Computer Science Graduate Program Committee may require the student to pass a proficiency examination or to demonstrate in some other convincing way competency in the area. Although nonacademic experience may be substituted for a prerequisite course, academic credit for such experience will not be awarded in the Master of Science degree program in Applied Computer Science.

13. Other degree completion requirements:

To obtain the Master of Science Degree in Applied Computer Science at Illinois State University, a graduate student must present a graduate grade point average of at least 3.0, including no more than six credit hours of C. No grade less than a C will be accepted for any course. All work for the Master of Science degree in Applied Computer Science must be completed within 6 calendar years after the student begins study towards the degree. If the student does not complete the work within this time, additional examinations, or additional course work, or both, may be required in order to continue in the Master of Science degree program in Applied Computer Science.

14. NEW COURSES NEEDED TO SUPPORT THE CURRICULUM

ACS 400 INDEPENDENT STUDY
1-4 sem. hrs.

ACS 407 APPLICATIONS SOFTWARE FOR MICROCOMPUTERS
3 sem. hrs.
Studies application packages for word processors, spreadsheets, databases, integrated software, scheduling, personal use, and grading using examples and assignments requiring teaching experience.

ACS 411 PASCAL WITH DATA STRUCTURES I
3 sem. hrs.
Uses Pascal to study problem solving, algorithm development, structured programming, data structures, and documentation.

ACS 412 PASCAL WITH DATA STRUCTURES II
3 sem. hrs.
Continuation of ACS 411 with emphasis on data structures.
Prerequisite of ACS 411.

ACS 413 SURVEY OF COMPUTER LANGUAGES USED IN EDUCATION
3 sem. hrs.
Survey of computer languages commonly used in education, such as LOGO, and authoring languages, such as PILOT.

ACS 432 SOFTWARE DESIGN & SYSTEMS DEVELOPMENT
3 sem. hrs.
Study of software development with emphasis on the design methodologies for reliable and maintainable systems. Not for credit if had ACS 364. Prerequisite: ACS 411

ACS 455 ADVANCED MICROCOMPUTER APPLICATIONS
3 sem. hrs.
Design, coding and implementation of major microcomputer software such as multi-user systems, local area networks, bulletin boards, and operating systems. Prerequisite: ACS 355

ACS 456 PRINCIPLES OF INTERACTIVE GRAPHICS
3 sem. hrs.
Wireframe, surface, and solid modeling techniques; hidden lines, shading, color, and animation; presentation graphics; graphical packages. Prerequisites: ACS 255 and MAT 220.

ACS 460 SOFTWARE DEVELOPMENT ISSUES
3 sem. hrs.
Study of modern methods, techniques, and tools for software development; system quality issues: incorporating controls, reliability, ease of use. Prerequisite: ACS 363 and 364.

ACS 463 METHODS OF PROJECT DEVELOPMENT
3 sem. hrs.
Techniques for planning and supervising software development projects, acquiring and allocating resources, projecting costs, and tracking project progress. Prerequisite: ACS 460.

ACS 467 SOFTWARE TESTING & MAINTENANCE
3 sem. hrs.
Techniques for testing and maintaining software; test data design, testing tools, planning and control of maintenance and testing, maintenance strategies. Prerequisite: ACS 460.

ACS 476 DATA COMMUNICATIONS AND NETWORKS
3 sem. hrs.
Study of network design, standards, and protocols; security; packet switching; error detection and correction; transmission media; hardware. Prerequisite: ACS 288 or ACS 376 or ACS 355.

ACS 477 INTERACTIVE APPLICATION SYSTEMS
3 sem. hrs.
Study of interactive applications; design, screen management, human factors, issues of concurrency, integrity and recovery. Prerequisite: ACS 460..

ACS 478 ADVANCED DATABASE MANAGEMENT
3 sem. hrs.
Study of the theory, design, and implementation of application systems using database technology. Topics include: data modeling, database administration, commercial systems, performance issues, and trends. Prerequisite: ACS 378

ACS 491 Graduate Directed Project
3-6 sem. hrs.
Directed project for graduate students selecting Option II. Designed to integrate computer related skills in an intensive project environment. Prerequisite: Consent of Graduate Program Committee.

ACS 497 INTRODUCTION TO RESEARCH METHODOLOGY

3 sem. hrs.

ACS 499 MASTER'S THESIS
1-6 sem. hrs.

EXISTING COURSES TO BE UTILIZED IN THE PROGRAM

The following courses, which are described in the ISU catalog, have been identified as part of the curriculum of the proposed Masters degree in Applied Computer Science.

ACS 355	MICROCOMPUTER APPLICATION AND DESIGN II	3 sem hrs
ACS 363	INTRODUCTION TO SYSTEMS DEVELOPMENT	3 sem hrs
ACS 364	SOFTWARE DESIGN	3 sem hrs
ACS 368	TOPICS IN SYSTEMS DESIGN	3 sem hrs
ACS 372	EXTERNAL DATA STRUCTURES	3 sem hrs
ACS 376	INTRODUCTION TO ONLINE SYSTEMS	3 sem hrs
ACS 378	DATABASE PROCESSING	3 sem hrs
ACS 383	PRINCIPLES OF OPERATING SYSTEMS	3 sem hrs
ACS 385	TOPICS IN COMPUTER SCIENCE	3 sem hrs
ACS 401	INTRO TO MICROCOMPUTERS IN THE SCHOOL	3 sem hrs
ACS 344	DISCRETE SYSTEM SIMULATION (to be revised, strengthened and renumbered as **ACS 444**)	3 sem hrs
ACS 345	APPLIED COMPUTER MODELING (to be revised, strengthened and renumbered as **ACS 445**)	3 sem hrs
C&I 433	SELECTING AND DESIGNING COMPUTER SOFTWARE FOR SCHOOLS	3 sem hrs
ENG 349	TECHNICAL WRITING	3 sem hrs
BEA 416	ADVANCED MANAGERIAL BUSINESS COMMUNICATION	3 sem hrs

15. Below is an exemplary curriculum for a part-time student selecting Option II for the Information Systems Sequence. This shows a reasonable progression for a student who is maintaining full time employment.

SEMESTER ONE
ACS 460	Software Development Issues	3 sem hrs
ENG 349	Technical Writing	3 sem hrs

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SEMESTER TWO
     ACS 478  Advanced Database Management        3 sem hrs
     ACS 467  Software Testing and
                   Maintenance                    3 sem hrs
SEMESTER THREE
     ACS 355  Microcomputer Applications & Design II  3 sem hrs
     ACS 463  Methods of Project Development       3 sem hrs

SEMESTER FOUR
     3XX or 4XX  Elective                          3 sem hrs
     ACS 476  Data Communications and Networks     3 sem hrs
SEMESTER FIVE
     ACS 368  Topics in Systems Design             3 sem hrs
     3XX or 4XX  Elective                          3 sem hrs
SEMESTER SIX
     ACS 491 Graduate Directed Project             3 sem hrs
     3XX or 4XX  Elective                          3 sem hrs
SEMESTER SEVEN
     ACS 491 Graduate Directed Project             3 sem hrs
```

ACADEMIC POLICIES

16. Academic responsibility.

The Applied Computer Science Graduate Program Committee
will have the responsibility for curricular modifications
and student evaluations, both for entry requirements and
for graduation requirements. The Chairperson of the Applied
Computer Science Department will make teaching assignments.
The Applied Computer Science Department requires an undergraduate
grade point average of 3.0, calculated over the last 60
undergraduate hours, for admission to the Master of Science
program in Applied Computer Science. This value is higher
than the University requirement of 2.6. Computer Science
is a demanding field, and only the better students will
succeed. The higher value helps ensure that students who
enter the program will successfully progress through and
complete the program. The undergraduate program has long
followed a corresponding pattern.

STUDENT INFORMATION

17. Projections of program size.

See Table IV-3 on the next page.

TABLE IV-3

		1986	1987	1988	1989	1990
1	NUMBER OF PROGRAM MAJORS (FALL TERM HEAD COUNT)	23	48	61	70	79
2	ANNUAL FULL-TIME EQUIVALENT (FTE) MAJORS	21	43	55	63	71
3	ANNUAL NUMBER OF CREDIT HOURS GENERATED BY MAJORS AND NON-MAJORS IN EXISTING COURSES THAT ARE NEEDED TO SUPPORT THE PROPOSED CURRICULUM	312	539	640	700	788
4	ANNUAL NUMBER OF CREDIT HOURS GENERATED BY MAJORS AND NON-MAJORS IN NEW COURSES THAT ARE NEEDED TO SUPPORT THE PROPOSED CURRICULUM	312	613	800	932	1036
5	ANNUAL NUMBER OF DEGREES AWARDED	0	5	12	19	27

18. Support of student interests and majors in other degree programs.

It is anticipated that graduate students from other majors and disciplines will want to take graduate level courses in Applied Computer Science, due to the popularity and general utility of the subject matter. It is expected that the demand for the program will be higher than available resources will support. Consequently, not more than 10% of the credit hours shown on lines 3 and 4 of Table IV-3 will be taken by non-majors, in order that majors may be given access to the courses they need to progress on schedule. The following colleges and departments exemplify the demand expected outside the Applied Computer Science Department.

Some students in the College of Business will be interested in taking several courses in the Information Systems Sequence and the Decision Support Sequence. Areas of interest to these students include methods of project development, advanced database management, and discrete system simulation.

Students from the Department of Industrial Technology will be interested in courses on interactive graphics, advanced microcomputer applications, and discrete system simulation.

The College of Education will have students who are especially interested in courses on applications software for micro computers and on surveying different languages. Students in Economics and Mathematics are interested in courses in Pascal and especially in the courses in modeling and simulation.

19. Students served by the Proposed Program.

Approximately three-quarters of the students enrolled in the masters degree will be part-time students, teaching in the area schools or working in the Bloomington/Normal area in various companies such as State Farm, Country Companies, General Telephone, General Electric, and other firms with data processing professionals. These latter computer professionals are typically employed as computer programmers, system analysts, or data processing support technicians. Many will currently possess a bachelor's degree in computer science/data processing, while others will possess a bachelors degree in a non-related field but will have taken computer related courses at the college level. They will see the master's degree in Applied Computer Science as a chance to expand their computer knowledge while improving their qualifications for advancement in their current job position. Most will be between 25 and 40 years of age and will commute from their homes to take evening classes. While the majority of these students will be of white, middle-

class status, minorities and women will be encouraged to further their education through the Master of Science degree program in Applied Computer Science.

The remaining one-fourth of the graduate students will be full-time students. Some of these will be ethnic foreign students temporarily residing on campus. Others may be recent graduates of the undergraduate Applied Computer Science program. Their characteristics will reflect those of the current student body of Illinois State University.

STATEWIDE NEEDS AND PRIORITIES

20. Identification of programs offered by Illinois colleges and universities that are similar to the proposed program with an analysis of the similarities and differences.

The three sequences will be considered separately for the purposes of this analysis. The Information Systems Sequence will be compared with established programs at Northern Illinois University and the University of Illinois. The Decision Support Sequence will not be compared with other programs; instead a description will be given of the process by which this sequence will be used to establish a unique interdisciplinary program. Finally, the uniqueness of the Teacher Retraining Sequence will be discussed.

Northern Illinois University offers a master's degree in computer science that is similiar to the proposed Information Systems Sequence, but the two programs emphasize quite different application areas. The program at Northern Illinois University emphasizes assembly language programming and the development of systems software consisting of those programs that are generally invisible but that provide such necessary services as language compilation, file access, terminal support, and data communications. The proposed Information Systems Sequence emphasizes the use of modern, high level tools to develop and manage application software such as a corporate wide management information system. Any overlap between the proposed program at Illinois State University and programs at Northern Illinois University should be insignificant because of the differing emphases and because the two universities serve different geographic regions.

The University of Illinois offers a Master of Computer Science degree for students who intend to specialize in some applicaton areas of computer science; however, each student in that program must demonstrate proficiency in software and two of four additional areas: hardware, computer architecture, numerical analysis, and the theory of computation. These requirements indicate that the program at the University

of Illinois has a substantially different, more theoretical orientation than has the proposed Information Systems Sequence. While underlying principles and basic tenents will naturally be an important part of the course work in the proposed program, the emphasis will be on using these principles to attack data processing problems that typically confront business, industry and government, problems whose successful solution can make the difference between success and failure for a company.

Numerous programs offer courses in those aspects of operations research that are included in the proposed Decision Support Sequence, but the intention is to develop the Decision Support Sequence into a unique interdisciplinary program. Even though there is a need for decision support in every discipline, the initial thrust of the Decision Support Sequence will be in the area of business applications which is the primary strength of the current faculty. By working with other departments within the university, the scope of the Decision Support Sequence will gradually be expanded so that graduate students from other departments will be able to enhance their studies by enrolling in selected courses within the Decision Support Sequence. These courses will be designed to meet the needs of students from a variety of disciplines. This expansion of the scope of applications together with the ability of graduate students to combine courses in the Decision Support Sequence with courses from other departments will produce a truly unique interdisciplinary sequence.

Although there are graduate programs in computer science education, we know of no programs in Illinois, and very few in the entire country, that are specifically designed to retrain inservice high school and community college teachers. In this sense, the Teacher Retraining Sequence is unlike any other program in the state.

21. Student Demand

According to the Graduate Assistant Directory in the Computer Sciences of the Association for Computing Machinery, there are 155 schools listed as offering a graduate degree in the field of computer science. While this is not a complete listing of all schools offering a graduate degree in computer science (estimated 60-80% complete), this can be used as an indication of the great demand for a graduate degree in this field. Of these 155 schools, there are 17,677 students enrolled in graduate programs in computer science.

The Applied Computer Science Department Office regularly receives letters and phone calls from potential students in this state and others requesting information on a master's degree. The reputation and thrust of our undergraduate program attracts individuals interested in a graduate degree.

Moreover, there are more than 1600 data processing professionals in Bloomington-Normal alone. With the increase in employee awareness and a desire to advance in the corporate data processing environment, it is expected that many of these professionals will seek the educational advantages offered by a master's degree program in Applied Computer Science. The Eureka Company, General Electric and a rapidly growing software development company, Bear Computers, are some of the local firms with data processing staffs. However, the two largest employers are Country Companies and State Farm, and these alone provide unusual student demand.

The head of training at Country Companies has identified 28 current employees interested in enrolling in a Master of Science degree program in Applied Computer Science (25 of these are graduates of this department). A Senior Training Coordinator at State Farm has determined that about 53 data processing professionals are currently interested in a master's in Applied Computer Science from ISU. Given the expected growth of 200 new data processing employees per year, he estimates about 61 new applications per year over the next four years.

These figures show an exceptional demand in our immediate area for the Information Systems and Decision Support sequences in this degree. In addition, many undergraduates from the Chicago area enroll here so we can reasonably expect to attract graduate students from there also. Finally, we expect demand for selected courses in these sequences from students in several other graduate programs including Business, Mathematics, and Economics.

Illinois State University has a long history as the premier teacher education University in the state. As such, teachers look to Illinois State University for advanced degrees and retraining into new areas. Thus, the Teacher Retraining Sequence will draw students statewide. To service this clientele, we expect to expand our summer program to offer courses needed by students in the Teacher Retraining Sequence. Moreover, our central location will attract evening students from as far away as Peru, Peoria, Lincoln and Decatur. Our already extensive evening undergraduate offerings will be extended to include graduate courses.

22. Occupational Demand

Many sources state the need for more people with degrees
in computer science and data processing. As stated in "Snowbird
Report - A Discipline in Crisis" in the June 1981 issue
of Communication of the ACM and repeated in the IEEE Computer
Journal December 1983:

"-About 250 new PhDs graduated in 1979 as compared with
1300 positions seeking PhDs.

"-Fewer than 100 new PhDs sought academic positions as compared
with over 650 academic positions known to be open.

"-Undergraduate enrollments doubled since 1975.

"-Intense competition for computer specialists produced
record salaries: new MS holders got offers matching full-year
academic salaries for new PhDs; experienced assistant professors
got industrial offers as high as $45,000."

The shortage in Ph.D. graduates causes the market for master's
degree graduates to be larger than in most other disciplines.
It is becoming common, in both academe and industry, for
a person with a master's and substantial industrial experience
to be hired into a position requiring a terminal degree.
In addition, the need for more master's level supervisors
will continue to grow to match the growth in need for basic
data processing personnel.

This growth is predicted often, as is shown by a typical
article such as one in Computerworld, January 7, 1980.
In this article it is predicted that programmers will be
in short supply throughout the 1980s, and that all the problems
inherent in a labor shortage will continue. In particular,
the article states:
    "Nothing short of a massive recession or a major education
effort will alter this outcome. Long-term changes are necessary
if the future is to differ significantly from the present.
But short-term needs will preclude such changes.
    "There are three major reasons why short-term needs
will absorb most of our efforts: the inertia of software
developed over the past 30 years, the pressure to implement
new applications and the continuing shortage of well-trained
computer professionals."

According to the New York Times Magazine, October 14, 1984,
the Bureau of Labor Statistics Projections predict the largest
percentage gain in new jobs will be for computersystem analysts
with computer programmers showing the second largest percent
gain. The number of new jobs expected between 1982 and

1995 and the percentage gain those numbers represent are shown below for three relevant occupations.

	Number New Jobs	% gain
Computer programmers	205,000	77
Computer-Systems analysts	217,000	85
Computer-operating personnel	157,000	27

As an example of the need for high school teachers of computer science, the United States House of Representatives, on September 13, 1984, debated a bill estimated to cost some $8.5 billion over five years, to improve, among other subjects, the teaching of mathematics and science (including computer science). The House Education and Labor Committee, which fashioned the proposed legislation, pointed to estimates that the country will need 113,000 more computer scientists and electrical engineers in the next five years than colleges will produce. The bill would provide funds to design programs to improve instruction at the high school level, to improve guidance and counseling, and to improve the knowledge and teaching skills of teachers through retraining and upgrading. Thus, the Teacher Retraining Sequence will represent a timely opportunity for the Applied Computer Science Department to help fill this national need.

23. The Principal Faculty

The objectives of the proposed Master of Science degree essentially state that the graduates will be able to analyze a variety of complex business or education related problems, be able to solve the problems using appropriate tools, be able to communicate with others, and be able to adapt to a changing environment. The industry experience and research interests of the principal faculty provide the foundation necessary to help the students meet these objectives. Nine members of the current faculty, all full-time, will be expected to contribute directly to the proposed Master of Science degree program in Applied Computer Science. Five of these have earned the doctorate, while the remaining four have Master's degrees plus considerable industry experience. These nine individuals hold degrees in five different disciplines. Three faculty included teacher training studies as part of their baccalaureate degree, and two continued to pursue education related studies in graduate school. One of the Master's degree holders has earned the highly esteemed Certificate of Data Processing. Seven of these nine faculty members have consulting experience or full-time work experience in the data processing industry. Eight of the nine are currently members of the graduate faculty at ISU. Two are officers in the local chapter of the Data Processing Management Association, and one is an officer

in the local chapter of the Association for Computing Machinery. The major research interests of this group may be summarized by the following six categories: software development tools and techniques, database systems, project management, data communications and networks, microcomputer applications, and computer science education. (Short resumes are in Appendix B and another summary of faculty qualifications is part of Appendix C.)

The proposed Master of Science degree curriculum contains three sequences: Information Systems, Decision Support and Teacher Retraining. These sequences can only be partially supported by the current faculty. The relationship of these nine faculty members to the specific curricula is discussed below. As can be seen from Table 23-1 below, the current faculty could support the proposed Information Systems Sequence. With two exceptions, each course could be taught by one or more of the current faculty members without an inordinate amount of preparation. This is consistent with the industrial experience and research interests of the faculty. However, in order to adequately support the new 400-level courses as well as the current 300-level courses, it will be necessary to hire additional faculty with specific backgrounds and interests. These needs are summarized in section 24.

At least one additional faculty member must be hired to support the Teacher Retraining Sequence. The faculty members assigned to support the Teacher Retraining sequence should be familiar with either the secondary school or the community college environment. Although three of the current faculty studied education topics along with their baccalaureate degrees, and two pursued education related studies in graduate school, only a few have teaching experience at either the secondary or junior college level. As is shown by table 23-2, some of the current department faculty would be able to support the Teacher Retraining Sequence, but it is anticipated that only David Scanlan, and perhaps Gerry Chrisman, would participate. There are, of course, some faculty in other departments who are capable of helping to support the Teacher Retraining Sequence.

The Decision Support Sequence cannot be offered until a faculty member is hired with a background in discrete and continuous simulation, operations research, and computer modeling. Only one department faculty member, Curt White, is currently able to teach ACS 444 (Discrete Systems Simulation), but his professional interests lie in other areas. No one else currently in the department has either the background or the interest required to teach either ACS 444 or ACS 445 (Applied Computer Modeling), both of which are required

core courses in the Decision Support Sequence. There are some faculty in other departments who are capable of teaching these courses.

Finally, table 23-3 shows that the other proposed 400-level courses which span all of the sequences could be offered by the current faculty. All of the listed faculty have written theses, some have supervised Master's theses at other universities, most have managed software development projects, and two have experience in research methods.

Tables 23-1, 23-2, and 23-3 show the relationship of the current faculty to the 400-level courses that are being proposed to support the Master's degree in Applied Computer Science. Since textbooks are not available for many of these courses, the time and support needed for preparing to teach them will be greater than for undergraduate courses. There is no table for the Decision Support Sequence.

Key to the tables:
- 1= Strong interests in teaching, and able to teach.
- 2= Able to teach, but only mild interest.
- 3= Strong interest in teaching, but will require considerable time to prepare. However, this course does represent an area of professional interest.

----------Course----------

	455	456	460	463	467	476	477	478
Beccue			3	1				1
Brumbaugh		3				1	1	
Chrisman, C			1	1	2	3	3	1
Chrisman, G			1	3	3		3	3
Kacmar		3				2	2	
Kephart			3	1	3	1		3
Sanders		3	2	1	3			
Scanlan	3		3		3	3		3
White	1					1	3	

Information Systems Sequence
Table 23-1

----------Course----------

	407	411	412	413	432
Beccue					2
Chrisman, C	2	2	2		2
Chrisman, G	3	2	2	3	1
Kacmar	3	3			
Kephart					1
Sanders	2	2	2	2	2
Scanlan	2	1	1	2	3
White	2				

Teacher Retraining Sequence
Table 23-2

----------Course----------

	400	491	497	499
Beccue	2	2		2
Chrisman, C	2	1		2
Chrisman, G	1	1		1
Sanders	1	1		2
Scanlan	2		1	2
White	2	2		2

General Courses
Table 23-3

TABLE IV-4

LINE CODE	STAFF REQUIREMENTS	FY87 BUDGET YEAR	FY88 2ND YEAR	FY89 3RD YEAR	FY90 4TH YEAR	FY91 5TH YEAR
01	FACULTY-ADMIN (TOTAL 02-04)	22.75	23.50	23.50	23.50	23.50
02	ADMIN./OTHER PROFESSIONAL	2.00	2.00	2.00	2.00	2.00
03	FACULTY	20.00	20.00	20.00	20.00	20.00
04	GRADUATE ASSISTANTS	.75	1.5	1.5	1.5	1.5
05	CIVIL SERVICE STAFF & STUDENT EMPLOYEES	4.14	4.14	4.14	4.14	4.14
06	TOTAL STAFF (01-05)	26.89	27.64	27.64	27.64	27.64

24. Qualifications of faculty who would be sought to fill any new positions needed to support the program.

A minimum of five new positions must be created to support the proposed master's degree program. To complement the existing faculty, new positions would be filled with individuals having the following qualifications:

Positions One: Ph.D. with background in discrete and continuous simulation, operations research, and computer modeling.
Positions Two: Ph.D. with background in advanced microcomputer applications, or interactive graphics.
Position Three: Ph.D. with background in online systems, data communication and networking.
Position Four: Ph.D. with background in advanced database management or software testing and quality assurance.
Position Five: Ph.D. with a background in computer science education at the secondary school level.

SUPPORT SERVICES

25. New Equipment and Instructional Materials

The department has about 10 Apples and 18 IBM PC microcomputers. This number is marginally adequate for the current undergraduate curriculum. The department will obtain a minicomputer during this 1984-1985 academic year which will have minimal memory, disk storage, control units and terminals.

To furnish the students with the variety of experiences they may face upon entry into the business world, we will require them to be conversant with all three sizes of computers, micro, mini and mainframe. In addition, the trend in the industry is towards interactive systems, which will require us to incorporate the latest technology and most current software into our facilities. Thus, for example, there is a need for such tools as Excellerator.

Additional microcomputers will be necessary to support the new microcomputer classes and the new courses which will incorporate microcomputers in their offices in order to be able to develop the new classroom materials and to respond to student questions. Due to licensing and copyright requirements, it will be necessary to purchase multiple copies of software for the micros.

The minicomputer will include all initial software, but maintenance contracts and software updates will need to be purchased. Moreover, as the program grows to its expected size, it will be necessary to purchase additional memory, disk storage, control units, terminals, other peripheral devices and software.

We will continue to work with the Computer Center staff to maintain the mainframe and to seek to expand its power and capability.

Companies require their data processing staff to participate in Professional Development Seminars. As a result of FIDP monies, several members of the department were able to attend seminars last year. This has had an immediate positive effect on the undergraduate curriculum. In a similar way, it will be necessary for graduate faculty to continually attend Professional Development Seminars in order to keep abreast of the rapidly changing technology, both hardware and software, in computer science.

Additional office supplies, paper and equipment will be needed. With the increase in students it will also be necessary to increase the general supplies used for reproducing handouts and instructional computer manuals. Travel funds to present papers and attend Professional Development Seminars will be needed.

26. Library Holdings and Needs

The reference books currently in the library collection form a good foundation for the proposed program, but in addition to the annual acquisitions, approximately 50 new titles should be added to better support the proposed sequences. In addition, the library budget will have to be increased so that the annual acquisitions may include titles specifically related to the graduate program.

The bulk of the periodical collection is geared toward the general populace rather than toward a graduate faculty and student body. Approximately 15 subscriptions will have to be added to the periodical collection and maintained annually.

27. Internships.

Not applicable.

28. Support for other off-campus programs.

Not applicable

ACCREDITATION AND LICENSURE

29. What accreditation or licensure bodies exist for programs in this field?

    Not applicable.

30. Will accreditation be sought for the proposed program within the next 5 years?

    Not applicable.

31. If the proposed program will be administered by an academic unit that is also responsible for established programs, has accreditation been sought for these existing programs?

    Not applicable.

FINANCING

32. Projections of Program Expenditures and Revenues

    (See Table IV-5)

    a. Projected increments in total resource requirements may be explained as follows:

        In year one, the need to fund five graduate assistants (at $6000 for 10 months) is projected. In the second year, five additional graduate assistants are projected (at $6600 for 10 months).

TABLE IV-5

TOTAL RESOURCE REQUIREMENTS FOR THE NEW PROGRAM REQUEST

(in thousands)

LINE CODE		BUDGET YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR
01	TOTAL RESOURCE REQUIREMENTS	1619.5	1652.5	1652.5	1652.5	1652.5
02	TOTAL RESOURCES AVAILABLE FROM FEDERAL SOURCES	2.6	2.6	2.6	2.6	2.6
03	TOTAL RESOURCES FROM OTHER NON-STATE SOURCES	0	0	0	0	0
04	EXISTING STATE RESOURCES	1207.9	1616.9	1649.9	1649.9	164 ?
05	STATE RESOURCES THROUGH INTERNAL ALLOCATION	0	0	0	0	0
06	NEW STATE RESOURCES REQUIRED (01 MINUS THE SUM OF 02-05)	409	33	0	0	0

BREAKDOWN OF THE FIGURE SHOWN ON LINE 06 FOR THE BUDGET YEAR:

07	STAFF	242,000
08	EQUIPMENT AND INSTRUCTIONAL MATERIALS	100,000
09	LIBRARY	7,000
10	CONTRACTUAL SERVICES	50,000
11	OTHER SUPPORT SERVICES	10,000

b. New State resources required in the budget year may be explained as follows:

07 Staff ($242,000)
The five new staff are delineated in paragraph 24. In order to attract qualified Senior Ph.D.s, it will be necessary to offer competetive salaries. Projecting the need for 2 Full Professors, 2 Associate Professors, 1 Assistant Professor and a modest per cent increase in salaries over the next two years, an average salary of $42,400 will be needed. Funds for five graduate assistants ($6,000 each) in the proposed program will also be needed.

08 Equipment and Instructional Material ($100,000)
As outlined in paragraph 25, the program will require the Department to purchase new microcomputers and printers, and new peripherals for the Department minicomputer. In particular, additional primary memory, printers, control units, terminals and software development stations will be needed.

09 Library ($7,000)
Paragraph 26 describes the need for additional periodicals and monographs.

10 Contractal ($50,000)
Paragraph 25 also describes the need for new software, software updating, and Professional Development Seminars. Service agreements for maintenance of new equipment will also be needed.

11 Other ($10,000)
Including travel funds for use in attending Professional Development Seminars and funds for additional supplies, especially computer paper, ribbons, etc.

c. Although efforts to attract funding from external sources will continue to be made, no such sources of funding are assured at this time.

OFF CAMPUS PROGRAMS

33. Not applicable.

Illinois State University
College of Arts and Sciences
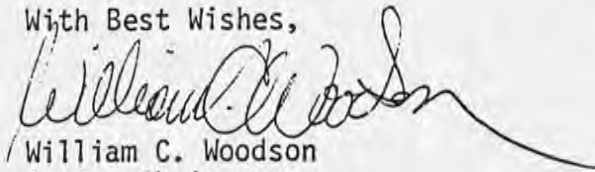Department of English

February 1, 1985

Dr. Lawrence Eggan, Chairperson
Department of Applied Computer Science
Illinois State University

Dear Professor Eggan:

I am glad to indicate on behalf of the Department of English that
we will be able to add an additional section of English 349,
Technical Writing, to accommodate the students in your proposed
new graduate program who will need to take it.

With Best Wishes,

William C. Woodson
Acting Chairperson

WCW:ce

cc: Charles B. Harris

APPENDIX B

FACULTY AND/STAFF

THE PRINCIPAL FACULTY

Barbara Beccue. B.S. 1964, M.S. 1966, Ph.D., Family and Consumption Economics, 1978, University of Illinois. Programmer/-analyst, Caterpillar Tractor, 1965-67; Systems analysis and database design specialist, Department of the Army, 1967-70. Instructor, Assistant Professor, Associate Professor, Computer Science, Bradley University, 1970-81; Associate Professor, Applied Computer Science, Illinois State University, 1981-. Member graduate faculty and graduate advisor, Bradley University. Two refereed journal articles, three refereed papers at national meetings. Special interests include Database Systems, Systems Development, Software Quality Assurance, Security and Recovery.

Larry J. Brumbaugh. B.S. 1965, University of Pittsburgh, M.A. Mathematics; 1968, West Virginia University; Candidate for Ph.D., Mathematics, University of Kentucky, 1973; M.S. Computer Science, University of Kentucky, 1976; additional work toward Ph.D., Computer Science, University of Illinois; Programmer, US Steel Corporation, 1966-1967; Graduate Assistant, University of Kentucky, 1968-1971 and 1974-1976, Mathematics and Computer Science; Assistant Professor, Department of Business Administration (taught Computer Science courses), Morehead State University, 1976-1979; Assistant Professor, Applied Computer Science, Illinois State University, 1979-; Independent Programming Consultant specializing in large IBM systems; large software systems developed for Kentucky State Health Department, US Department of Agriculture, Boy Scouts of America-Chicago Council, Spiegel Corporation, Country Companies Insurance; recognized as regional expert on large IBM systems. Special interests include MVS Systems, VSAM, and Data Communications.

Carol Chrisman. A.B., University of Detroit, 1969; M.S., Purdue University, 1971; Ph.D., Mathematics (Automata Theory), Purdue University, 1974. Programmer (part-time), Michigan, 1967-1969; consultant with Realworld Software, 1977-1979; Database Coordinator for Administrative Computer Center, Northern Illinois University, half-time 1979-1980; Intern at IBM, Kingston, NY, summer 1980. Assistant Professor, Computer Science, Northern Illinois University, 1974-1982; Associate Professor, Applied Computer Science, Illinois State University, 1982-. Member graduate faculty (master's program) Northern Illinois University; member, Chicago Data

Processing Education Council, 1980-1982. Publications include: five refereed journal articles, seven refereed papers at national meetings. Special interests include Database Management Systems, 4th Generation Languages, Software Development, Structured Analysis and Design.

Gerry L. Chrisman, B.S. 1966, M.S., Mathematics, 1968, Ph.D., Mathematics Education, 1974, Purdue University. Part-time consultant, Realworld Software, Dekalb, IL 1980; Technical staff, data base group, Bell Laboratories, Naperville, IL summer 1981. Assistant Professor, Mathematics Education, Northern Illinois University, 1974-77; Instructor, Mathematics, St. Xavier College, Chicago, 1977-78; Assistant Professor, Computer Science, Northern Illinois University, 1978-82; Associate Professor, Applied Computer Science, Illinois State University, 1982-. Taught graduate computer science courses, Northern Illinois University; member, Chicago Data Processing Educational Council (primarily commercial education managers), 1981-1982; Education Director, Twin City Chapter, Data Processing Management Association, 1984; Membership Director, Twin City Chapter, DPMA, 1985. Two refereed journal articles; several talks on computer science at regional meetings. Special interests include Systems Design and Development, Fourth Generation Systems, Database Systems and Design, Project Management.

Lawrence C. Eggan. B.A., Pacific Lutheran University, 1956; M.S., Ph.D., Mathematics, University of Oregon, 1958, 1960; Instructor, Assistant Professor, University of Michigan 1960-1965; Visiting Lecturer, Visiting Professor, University of London, 1963-64, 1976-77; Associate Professor and Chairman Mathematics, Pacific Lutheran University, 1965-68, Associate Professor, Professor, Mathematics, Illinois State University, 1968-1984; Associate Editor (responsible for computer science, 1980-81), Mathematical Reviews, 1979-81; Chairperson, Applied Computer Science, 1984-. Member graduate faculty, University of Michigan (directed 1 doctoral dissertation in Computer Science); Chairman, Mathematics Graduate Committee during development and implementation of Doctor of Arts program in Mathematics, 1969-1975, 1977-79. Publications include more than 15 research papers (1 in Theoretical Computer Science), numerous reviews and one book. Special interests include Compiler Design, Automata Theory, Formal Languages.

Charles J. Kacmar. B.S., M.S., Mathematics, Illinois State University 1977. On-line Systems Technical Support at the CONTINUUM COMPANY, Austin, Texas, 1980-81; Instructor in Applied Computer Science 1977-1980; Assistant Professor Applied Computer Science 1981-. Developed several major software systems used within ACS, within the University, and within industries (such as Illinois Bell, A.E. Staley);

Member, Systems Programming Staff, University Computer Center, Consultant Provost's office on hardware and software usage. Independent Programming Consultant, Northern Trust Bank, State Farm, Country Companies. One textbook published 1984, one in draft form; Textbook Reviewer. Special interests include Telecommunications, Interactive Systems, Micro-mainframe Communications and Systems.

David F. Kephart. BBA, University of Arizona, 1972; M.S., Computer Science, University of Arizona, 1974; Candidate for Ph.D., Higher Education, University of Kentucky. Recipient Certificate of Data Processing, 1984. Instructor Data Processing, Chadron State College, 1973-74; Assistant Professor, Data Processing, Morehead State University, 1974-1980; Assistant Professor, Applied Computer Science, Illinois State University, 1980-. Member graduate faculty, Morehead State University, Independent Programming Consultant specializing in large software systems, clients include Gateway Health District, State of Kentucky, Boy Scouts of America, Country Companies, Spiegel Corporation. Director, ACS Department Coop Program. Special interests include Experiential Learning, Structured Analysis and Design.

Dean E. Sanders, B.S. Western Michigan University, 1966; M.S. Michigan State University, 1967; Ph.D., (Mathematics), Michigan State University, 1972; additional graduate work, Computer Science, The Ohio State University, 1974-1978. Assistant Professor, Mathematics, Capital University, 1972-1979; Assistant Professor, Computer Science, Central Michigan University, 1979-1981; Associate Professor, Applied Computer Science, Illinois State University, 1981-. Member, graduate faculty, Central Michigan University. Developed computer science curriculum at Capital University; Coordinator of academic computing at Capital University; Coordinator of academic computing at Capital University; Faculty Research Associate studying educational uses of microcomputers, Illinois State University; attended professional development seminars in Project Management and Software Testing. Publications include three refereed journal articles and three refereed papers at national meetings; reviewed several books; developed instructional materials for use by instructors in various courses. Special interests include Software Engineering, Systems Development Methods, Computer Science Education.

David A. Scanlan, B.S. Illinois State University, 1969; M.S., Illinois State University, 1971; Ed.D., Educational Psychology, Northern Illinois University, 1977. Associate Professor, Psychology, Quincy College, 1969-1980; Assistant Professor, Applied Computer Science, Illinois State University, 1980-. Teaching interests include Educational Applications of Computers, Microcomputers, Programming Languages, Data Structures, Artificial Intelligence (AI), Computer Architecture

and Organization. Three research grants, three refereed journal articles, seven refereed papers at national meetings. Special interests include AI, Computer Aided Instruction, Human Factors, Digital Electronics.

Curt M. White, B.S., Wayne State University, 1976; M.A., Computer Science, Wayne State University, 1978; Candidate for Ph.D., Computer Science, Wayne State University. Instructor, Computer Science, Wayne State University, 1978-1980; Instructor, Applied Computer Science, Illinois State University, 1980-1982; Assistant Professor, Applied Computer Science, Illinois State University, 1982-. Consultant, State Farm Insurance, 1983-. Director of Microcomputer Lab, 1980-1984. Two refereed papers at national meetings; several invited talks and lectures to professional organizations. Special interests include Local Area Networks, Microprocessor Based Networks, Genetic Modeling, Microcomputer Applications.

Appendix C.   Relation to 1985-90 Academic Plan

The academic Senate has approved the 1985-90 Academic Plan and is interested in how this program relates to the objectives and criteria established there.   In this appendix, we address some of these concerns.

One of the five specific objectives of the College of Applied Science and Technology is to "Expand the Graduate Program." Two programs are specifically mentioned there, one being the master's degree in Applied Computer Science. Moreover, the paragraph of explanation goes on to pledge reallocations which are "justified by the strong undergraduate programs upon which the graduate programs are based."

In Section II, Academic Planning Priorities, of the Academic Plan five criteria are stated which new graduate programs should meet. Specifically, Section II states: "Illinois State University will continue to support, develop, and initiate graduate programs which meet the following criteria." We address each of these criteria below:

a)   **Existing faculty qualifications and interests are demonstrably adequate to support and/or initiate a program with valued and distinctive goals.**

Since it is difficult to synthesize collective qualifications from individual vita, we will summarize the relevant experiences of the faculty here.

Five of the current faculty have Ph.D.'s, four from Big Ten Universities, and one has an Ed.D. Four have been on the graduate computer science faculties at other universities (Bradley, Central Michigan, Northern Illinois), and two additional have taught graduate computer science courses. Of the 10 individuals whose vita appear in the proposal, 8 are on the ISU Graduate Faculty (Carol Chrisman and Larry Eggan as full members) while two (Barbara Beccue and Curt White) have not applied for membership. Only Professors Scanlan and Eggan have taught graduate courses at ISU, and without a graduate program in the ACS Department there has been no need up to this time for membership on the graduate faculty by ACS department members.

Except for Professors Gerry Chrisman, Larry Eggan and Dave Scanlan, all of the research and scholarly activity mentioned in vitas has been in computer science and computer science education. Professors Gerry Chrisman and Dave Scanlan are now publishing in computer science, although their early activity was in mathematics education and psychology, respectively. Professor White is actively working on his dissertation in computer science.

Professors Brumbaugh, Kacmar and Kephart have achieved a high level of scholarly activity through their consulting with large corporations on systems development and software design. Professor Brumbaugh consulted on the development of large systems for the State of Kentucky, the U.S. Department of Agriculture,

Spiegel Corporation and Country Companies. Professor Kephart has similarly been a consultant for the State of Kentucky, Boy Scouts of America, Spiegel Corporation, World Book, Inc. and Country Companies. Professor Kacmar worked for a computer software firm for a year and has developed numerous software systems for the University (one of these is being used by Illinois Bell and A.E. Staley). He has been a consultant to Northern Trust Bank, State Farm and Country Companies. Professor Kacmar has published an advanced textbook, and both he and Professor Brumbaugh have book manuscripts under review. All three are working on papers, with several having been recently submitted for publication (at least 1 accepted).

For Fall 1985, recruitment of two doctoral level tenure track positions has been initiated, with one scheduled to be in a Decision Support area.

There is no question that the current faculty can support the Information Systems Sequence. In addition, while not fully able to support the other sequences, the expertise of current and past faculty are at least adequate to _initiate_ them.

b)   **Students graduating from the program, be it as academic researchers or as post-graduate practioners, have skills demonstrably consistent with relevant professional standards.**

This criterion is intended primarily to apply to current programs being identified for continuing support and development. It is difficult to demonstrate that students graduating from a program have skills until there are some who have graduated. Moreover, although the undergraduate program is very similar to the nationally recommended curriculum of the Data Processing Management Association, no curriculum has as yet been established by them at the graduate level. Consequently, this graduate program will build on the strengths of the undergraduate program (see Appendix D of this proposal), and the experience of the faculty with graduate programs at other universities.

c)   **The research, creative activity and professional practice performed by students and faculty meet relevant professional standards.**

Again, since students have not yet graduated, we cannot evaluate their performance. The performance by faculty is exemplified by the requests by companies for our faculty as consultants. Professor Kacmar is currently consulting at Country Companies. Professor Kephart recently gave a 3 day seminar to the staff at World Book Corporation. Professors Brumbaugh and Kacmar gave a Special Seminar to Country Companies staff members last spring. One advanced textbook has been published and publishing companies are interested in manuscripts from three other faculty. Over the past 2 years, 9 papers have been submitted and 6 accepted

for publication and presentation through a rigorous refereeing process for presentation at national Association for Computing Machinery (ACM), Special Interest Group on Computer Science Education meetings, while 3 papers were presented at the national ACM Computer Science Conference.

d)   The program has sufficient self-sustaining support and enhances other University programs.

When this proposal is accepted, the additional dollars for faculty and other budget items, together with the pledged college reallocations, will give the program the needed support.

The addition of more faculty and graduate assistants will help the department expand it's service role at the undergraduate level. Graduate assistants will be available, under faculty supervision, to lead individual-instruction-intensive laboratory sections of large classes taught by senior faculty. This availability of computer science instruction will enhance many programs throughout the university.

The Decision Support Sequence, as its development is described in section 20, will serve to enhance many other University programs.

e)   The benefits of the program, defined in terms of the educational, research, and public service needs of the State of Illinois, are proportional to the incremental costs of the program.

The education, research and public service needs of the State of Illinois in computer science and data processing are great. The State is attempting to move from an industrial manufacturing base to a technological and service base, both of which will require substantial computer and data processing.

Illinois State University has recently been awarded a grant from the Department of Commerce and Community Affairs (DCCA) which will increase its public service capability. Through the Technology Commercialization Center which this grant will help establish and through the process already used for undergraduate projects, the graduate directed projects in ACS can be used to assist new and developing companies to evaluate and implement needed systems. The Teacher Retraining Sequence will help fill the need for qualified teachers in high schools and community colleges. Recent popular and professional literature expresses the view that the most rapidly expanding area over the next decade will be in Decision Support.

Finally, John Naisbitt, author of the best seller, _Megatrends_, and one of America's foremost social forecasters, predicts a "new information/electronics economy", one in which nearly the whole economy rests on the computer. To help meet this developing challenge, a master's degree in Applied Computer Science is needed.

Appendix D

In support of the claim that the undergraduate program is strong enough to support a graduate program, we list the following facts:

a) A composite score of 21 or above is required for immediate freshman admission and a 2.75 GPA is required for transfer admission to the ACS major.

b) A GPA of 2.5, both overall and in the major, is required for retention in the ACS major. (In spite of this, over 90% of the students were retained in the major this spring.)

c) One out of every 8 honor students is an ACS major. Thus although less than 4% of the students major in ACS, more than 12% of the honors students major in ACS.

d) The faculty-student ratio (student credit hour/F.T.E.) is better than the University or CAST average. This is especially significant in a laboratory intensive department.

e) The department, with between 600 and 700 majors currently, is one of the largest in the University.

f) The largest COOP/Intern program in ISU is in ACS. (See the list of employers attached at the end of this appendix.)

g) Companies recruiting for students come from relatively far away to recruit our students and all students willing to relocate get job offers. Of the 221 companies recruiting through the ISU Placement Office, 90 recruit in ACS. Moreover, the regard with which the ACS department is held is attested to by the attached letter from Parker Lawlis, Director of the ISU Placement Service.

h) The Bloomington-Normal Chapter of the Data Processing Management Association (DPMA) is nominating the ACS Department for a national DPMA award for excellence.

i) Of the 65 competitive scholarships recognized at the 1984-85 Scholarship Awards Ceremony, more than 12% went to ACS majors.

j) ACS students compete for regional and national awards, AND WIN. The ACS Department has had:
 - 1 Bone Scholar each of last three years,
 - 5 of 6 DPMA Scholarships last two years,
 - 2 Association for Computing Machinery 1984 Scholarships
 - several National Merit Scholars,
 - 2 International Computer Programs Scholarship winners and other finalists in last three years,
 - a 1984 Lincoln Academy Achievement Award,
 - a 1984 M.J. Scholarship Award,
 - an ROTC Technical Enrichment Program national winner (30 each year, Full pay and Scholarship to attend the University of Texas at Austin for M.S. in E.E. (Robotics),

and our graduates have earned special on-the-job recognition:
- Systems Engineer of the Year, Oxford Software Corporation International, Peter Tapling (1983), Rebecca Vaudrie (1984),
- One of two Shearson Lehman American Express employees sent to London to install a new large system to service Europe; Sharon Holmes, the youngest project leader in the company.

APPLIED COMPUTER SCIENCE
ENROLLMENT PLACEMENT DATA   *Coop/Intern*

	Spring '85	Spring '84	Summer '84	Fall '84
Country Companies	13	10	14	13
City of Bloomington	1	1	0	1
Caterpillar	0	1	0	6
Computer Services at ISU	4	7	8	3
CIA	1	1	0	0
Bachrachs	0	3	1	0
Beltone	2	1	0	1
IBL	0	3	0	0
IBM	5	3	1	3
Interdac	0	1	1	0
Canteen	2	1	1	1
Monsanto	7	4	4	4
Northern Trust	1	2	1	0
Tazewell County Gov't		1	0	0
		39		
Underwriters Lab	1			
McLean County	1			
DBMS	1			
Fike & Fike	1			
General Telephone GTE			1	0
Funks Seeds	2		1	0
State of Illinois	42		4	0
Natural Gas Pipeline			4	0
Chicago School Board			1	0
Natural History Survey			1	0
General Foods			1	0
McDonnell Douglas			1	0
Inland Investments			1	0
Hamilton Electronics			1	0
Motorola			1	0
NI Gas			1	0
State Farm			4	0
World Book			3	0
Spiegels, Inc.			2	0
Bear Computers			1	1
Arthur Andersen			1	0
General Electric			1	1
Mitch Co.			1	0
J. Powell & Assoc.			1	0
DuPont			1	0
T. M. & Co.			1	0
Medicus			1	0
Baxter-Travenol			1	0
National Mfg.			1	0
Economy Fire & Casualty			1	0
Levi, Ray & Shoup			1	0
			70	
AE Stahley				1
Vet Tech				1
1st National Bank of Georgia				1
				37

To whom it may concern:

Attached please find a computer-generated list of organizations hiring graduates of Illinois State University's Applied Computer Science Dept. I have taken the liberty of marking those firms that actively recruit on campus for these ACS graduates.

As a review of this list will show, the ACS Dept. at I.S.U. is a program of national scope, attracting the most prestigious business organizations to the I.S.U. campus. The benefit for the ACS Dept. from this national exposure is obvious, however, a point often missed is the benefit gained by other academic depts. from the contacts established through recruitment of ACS graduates. Several firms now recruit from a variety of depts after first establishing a recruiting "track record" in the ACS Dept.

It is a fact that the Applied Computer Science Dept. is one of the most successful programs at I.S.U., and the program has greatly enhanced the reputation of I.S.U. as an institution of higher learning.

Parke Lawles, Director
Placement Service
3/5/85