PROGRAM REVIEW

February 7, 2011

UNIT Computer Science DEPARTMENT Computer Science COLLEGE College of Science & Math

GRADUATE _____ UNDERGRADUATE X

UNIT CONTACT PERSON _____

CHAIRPERSON SIGNATURE _____

DEAN SIGNATURE _____

EXECUTIVE SUMMARY UNDERGRADUATE

This is second review of the BS in Computer Science and BS in Computer Information Systems in the last two years, with the programs having previously received very positive statements from both the Program Review Committee (PRC) and the Provost in a letter dated June 3, 2009. However, due to the recent economic crisis, these programs are being evaluated again in 2010, this time with the PRC asking some specific questions and making several very helpful suggestions to the program faculty. The questions involved the high cost per major, some possible unused capacity, low enrollment courses, a decrease in majors, costs vs. revenue inequities, and contributions to University Studies classes. All of these questions have been addressed in this report, with most of them focusing on the data from the 2008-09 academic year.

The PRC suggested "a more extensive review to identify possible cost saving measures and improve revenue streams" and later recommended investigating a possible move of the AD 101 course to Computer Science. This report addresses these suggestions and concludes that it is willing to take on AD 101 and other new and existing service courses in order to increase its revenue stream. In addition, this report provides a plan for significant cost-saving measures which has already started implementation through a reduction in program faculty. If allowed to be fully enacted, it is expected that between the plans for increased revenue and decreased costs will provide even more net income than the $30 per credit hour increase on CS and IS-prefix courses which will likely be enacted by the Board of Regents on May 15.

This report also contains a strong statement of support for the Computer Science and Computer Information Systems from the departmental Advisory Board, and details of the excellent ABET (accreditation) evaluation of the computer science program that was conducted last fall, with a final, positive vote from ABET expected in a meeting which will be held on July 9-10.

Finally, this report provides details of the continued growth and excellent salary opportunities for graduates of bachelor's degree programs in the computing field, on all levels: regional (including St. Louis), state and national. It is due to this and the continued attraction to these programs of high-quality students who receive a high-quality education at Southeast, that the faculty of these programs strongly recommend continuance of the Computer Science and Computer Information Systems degrees, using the plans that are outlined in this document to address the questions and suggestions raised by the PRC.

Program Review Final University Committee Chair Comments

I. SIZE, SCOPE, AND PRODUCTIVITY OF THE PROGRAM

Briefly describe the depth and breadth of your unit's offerings (Undergraduate).

Only two majors in this unit (which comprise the entire department) are available to incoming students: Computer Science (CS) and Computer Information Systems (CIS). CS split into two majors in 1995, CS and Applied Computer Science (ACS), and in 2005 ACS was renamed Computer Information Systems. Multiple options in both majors were eliminated in 2004.

The CS program, which uses a standard CS curriculum model, had an excellent site visit in September 2009 from the Computing Accreditation Commission (CAC) of ABET. There are several curricular models in the computing sciences; the 2010 IS curriculum model mostly closely matches the purposes of our CIS major, and as well as being applications-oriented, and the CS faculty will be using it while considering CIS curriculum changes. There are no plans to have CIS accredited in the near future.

There are also minors in CS and IS.

SIZE and SCOPE DATA UNDERGRADUATE							
Measure	Minimum	Aspirational Target	Year				
			AY07	AY08	AY09	4	5
Majors UNIT Total	85	170	154	159	130		
Appl Computer Sci:Infor Systms [BS/BS/ACSI]			4	1	0		
Appl Computer Sci:Intrdscplnry [BS/BS/ACII]			5	3	1		
Appl Computer Sci:Technology [BS/BS/ACTI]			6	1	0		
Applied Computer Science [BS/BS/APCS]			17	9	3		
Computer Information Systems [BS/BS/CIS]			33	46	32		
Computer Science [BS/BS/CPSC]			80	94	93		
Computer Science: Compttnl Sys [BS/BS/CSPI]			5	3	1		
Computer Science: Computer Sys [BS/BS/COYI]			1	1	0		
Computer Science: Graphic Sys [BS/BS/CSRI]			3	1	0		
Minors UNIT Total			29	22	19		
Computer Science			3	15	13		
Computer Science Minor			17	0	0		
Information Systems			9	7	6		
Completers UNIT Total	3	20	19	16	16		
Appl Computer Sci:Infor Systms [BS/BS/ACSI]			3	1	0		
Appl Computer Sci:Intrdscplnry [BS/BS/ACII]			2	1	0		
Appl Computer Sci:Technology [BS/BS/ACTI]			3	0	0		
Applied Computer Science [BS/BS/APCS]			3	2	1		
Computer Information Systems [BS/BS/CIS]			0	6	3		
Computer Science [BS/BS/CPSC]			4	6	12		

Computer Science: Compttnl Sys [BS/BS/CSPI]			3	0	0		
Computer Science: Graphic Sys [BS/BS/CSRI]			1	0	0		
% Completion Rate 6 YR	35	52	51	46	57		
Unit - % Retention FS YR 1 -- F YR 2	25	60	38	37	59		
Unit - % Retention FS YR 3 -- F YR 4	60	90	80	67	44		
UNIV - % Retention FS YR 1 -- F YR 2			65	74	78		
UNIV - % Retention FS YR 3 -- F YR 4			90	78	81		
SCH On Campus FS			1,741	1,637	1,410		
SCH Off Campus FS			0	0	0		
SCH Total FS			1,741	1,637	1,410		
SCH Summer On and Off Campus			39	66	3		
SCHR (SCH ratios) On Campus Fall/Spring	173	247	160	138	105		
SCHR (SCH ratios) Off Campus Fall/Spring	0	0	0	0	0		
SCHR (SCH ratios) Total	173	247	160	138	105		
Delaware SCHR			164	170			
% of Sections with Enrollment < 10 (GR < 8)	10	5	25	24	44		

Area of Concern for Size and Scope Data (Undergraduate)

The majors data provided to the CS department for their ABET self-study used the fall official numbers (4th week) showed a steady growth in students majoring in CS (including the former options) from 32 in 2003-04 to 73 in 2008-09, with an increase each fall.

Since ACS changed its name to CIS, there has been a steady decrease in CIS majors. The change came about because the CS program was to undergo ABET/CAC accreditation in 2005, and ABET said that ACS needed to have a degree name that would not confuse it with CS, thus the new CIS name. (Accreditation efforts were then delayed due to the chair's departure, a wait that eventually lasted four years.) There are two reasons for the CIS enrollment drop. First, ACS sounds more like a "computer science" degree than CIS does, despite the fact that the curriculum did not change. Second, the CS degree received more resources and gaining increased visibility due to accreditation efforts, thus hurting CIS enrollment.

The overall unit number of majors remained steady from 2005-06 to 2007-08 (again, using fall 4th week), with a drop in 2008-09. Two significant changes in the unit's introductory sequence already in effect by Fall 2008 helped turn around this short-term decline. Due to a retirement, a new PhD in CS (Dr. Amer) started teaching CS155 and her fresh approach to the course has increased retention. Also the restructuring of CS300, a key prerequisite for upper level courses, has increased the pass rate, which will increase both retention and the completer rate.

TEACHING PERSONNEL DATA UNDERGRADUATE							
	Minimum	Aspirational Target	AY07	AY08	AY09	Year 4	Year 5
Unit Full Time Faculty Number	6.00	8.00	6.00	7.00	7.00		
Unit Full Time Faculty Adjusted for Release	6.00	8.00	5.50	6.00	6.50		
Unit Full Time Faculty UG FTE			10.65	11.83	13.37		
Unit Regional Campus Faculty Number					0.00		

Other Teaching Personnel UG Number	0.00	0.00	1.00	1.00	0.00		
Other Teaching Personnel UG PTFTE	0.00	0.00	0.20	0.00	0.00		

Area of Concern for Teaching Personnel Data (Undergraduate)

Currently, there are eight members of the faculty, five tenured, one other tenure-track and two GNTTs. The five tenured include a half-time release for the department chair, and the two GNTTs are both half-time teaching in the department (one – Ms. Carole Pfeiffer – is also the department technician, with the other – Dr. Xiaobing Hou – also half-time with Industrial and Engineering Technology). Full teaching load with current faculty would therefore be 162 contact hours (which are used instead of credit hours by the College of Science and Mathematics) per academic year, excluding summers (30 hours for the one GNTT equivalent plus 24 hours each for the 5.5 tenure-track). The department is projected to use 143 contact hours (including nine hours of UI 100) in 2010-11. This led to the College of Science and Mathematics (after consulting CS and IET) declining to renew the half-time appointment to the CS department of Dr. Hou, reducing the full teaching load of the department to 147 contact hours, only four more than projected.

COMPARISONS UNDERGRADUATE										
	AY07		AY08		AY09		Year 4		Year 5	
	COLL	UNIV	COLL	UNIV	COLL	UNIV	COLL	UNIV	COLL	UNIV
% Completion Rate 6 YR	50.94	50.77	49.74	50.82	43.70	47.04				
Unit - % Retention FS YR 1 -- F YR 2	46.37	62.68	45.72	63.69	57.56	66.03				
Unit - % Retention FS YR 3 -- F YR 4	74.73	82.78	76.79	83.34	70.52	82.34				
UNIV - % Retention FS YR 1 -- F YR 2	64.73	62.81	64.95	63.69	73.06	66.13				
UNIV - % Retention FS YR 3 -- F YR 4	83.33	83.02	85.63	83.73	82.08	82.40				
SCHR (SCH ratios) On Campus Fall/Spring	269.00	262.00	275.00	261.00	273.00	248.00				
SCHR (SCH ratios) Off Campus Fall/Spring	215.00	227.00	183.00	290.00	203.00	213.00				
SCHR (SCH ratios) Total	258.00	242.00	279.00	265.00	253.00	242.00				
% of Sections with Enrollment < 10 (GR < 8)	19.22	17.54	18.56	17.42	16.85	22.70				

SIZE and SCOPE DATA SUMMARY UNDERGRADUATE				
Measure	Mean	5 year Outcome	% of Aspiration Target	Trend
Majors UNIT Total	147.7	Needs Improvement	86.85	Irregular
Appl Computer Sci:Infor Systms [BS/BS/ACSI]	1.7			Declining
Appl Computer Sci:Intrdscplnry [BS/BS/ACII]	3.0			Declining
Appl Computer Sci:Technology [BS/BS/ACTI]	2.3			Declining
Applied Computer Science [BS/BS/APCS]	9.7			Declining
Computer Information Systems [BS/BS/CIS]	37.0			Irregular
Computer Science [BS/BS/CPSC]	89.0			Irregular
Computer Science: Compttnl Sys [BS/BS/CSPI]	3.0			Declining
Computer Science: Computer Sys [BS/BS/COYI]	0.7			Declining
Computer Science: Graphic Sys [BS/BS/CSRI]	1.3			Declining

Minors UNIT Total	23.3			Declining
Computer Science	10.3			Irregular
Computer Science Minor	5.7			Irregular
Information Systems	7.3			Declining
Completers UNIT Total	17.0	Needs Improvement	85	Irregular
Appl Computer Sci:Infor Systms [BS/BS/ACSI]	1.3			Declining
Appl Computer Sci:Intrdscplnry [BS/BS/ACII]	1.0			Declining
Appl Computer Sci:Technology [BS/BS/ACTI]	1.0			Irregular
Applied Computer Science [BS/BS/APCS]	2.0			Declining
Computer Information Systems [BS/BS/CIS]	3.0			Irregular
Computer Science [BS/BS/CPSC]	7.3			Improving
Computer Science: Compttnl Sys [BS/BS/CSPI]	1.0			Irregular
Computer Science: Graphic Sys [BS/BS/CSRI]	0.3			Irregular
% Completion Rate 6 YR	51.3	Needs Improvement	98.71	Irregular
Unit - % Retention FS YR 1 -- F YR 2	44.7	Needs Improvement	74.43	Irregular
Unit - % Retention FS YR 3 -- F YR 4	63.7	Needs Improvement	70.73	Declining
UNIV - % Retention FS YR 1 -- F YR 2	72.3			Improving
UNIV - % Retention FS YR 3 -- F YR 4	83.0			Irregular
SCH On Campus FS	1,596.0			Declining
SCH Off Campus FS	0.0			Static
SCH Total FS	1,596.0			Declining
SCH Summer On and Off Campus	36.0			Irregular
SCHR (SCH ratios) On Campus Fall/Spring	134.3	Red Flag	54.38	Declining
SCHR (SCH ratios) Off Campus Fall/Spring	0.0	Red Flag	0	Static
SCHR (SCH ratios) Total	134.3	Red Flag	54.38	Declining
% of Sections with Enrollment < 10 (GR < 8)	31.0	Aspiration	620	Irregular

UNDERGRADUATE

Brief Conclusion from Data

It has been noted that the mean SCHR is below the Delaware mean, which questions whether this is unused capacity. The unused capacity is acknowledged. The non-renewal of Dr. Hou's contract is the first step towards addressing this situation (discussed more under additional data below). The decrease in the number of majors in 2008-09 was for the first after several years of steady enrollment. This increased the percentage of sections with fewer than 10 students was steady in the previous few years. A plan for increasing retention in place for over a year appears to be succeeding; for instance, the department plans to teach 18 sections this fall (not counting zero-credit and independent study courses), and only 5 have fewer than 10 students currently enrolled (one of them has 9); that is 27%, in line with 2007 and 2008.

Additional Data or Comments

None of the five tenured CS department faculty members appear close to retirement. Both of the other two faculty lines are essential; Dr. Amer is one of two faculty

members with a PhD in computer science, with two being the minimum necessary to long term retain accreditation for the computer science program, and Ms. Pfeiffer's salary is by far the smallest in the department, so much that finding a half-time technician or assigning a faculty member half time to replace her might be almost as expensive as her current full-time pay.

Some courses could be taught once a year instead of twice a year, which would reduce the percentage of courses with less than 10 students, but at the same time that would decrease teaching load unless other courses outside of the department are found for CS faculty to teach. Even if such courses outside of the department are found, the savings would be at most 19 contact hours (CS 245, CS 280, CS 300, CS 495, one CS elective and IS 130), and would cause some CS or CIS majors to delay their graduation for a year, or even change majors, and a loss of CS and IS minors. (It should be noted that CS 245, CS 280 and CS 300 already each have more than 10 students enrolled for this fall.) Those 19 hours, in addition to the 4 hours of unused load for 2010-11, would make 23 hours, or the equivalent of more than 7 sections for the year (fall and spring together) with three contact hours each, and also equivalent to almost one full-time tenure-track/tenured faculty member (0.75 GNTT).

The Program Review Committee suggested that the CS department look into taking over AD 101 to handle unused capacity. The course is currently taught using about 15 sections each semester (30 per year), including regional sites, the equivalent of three GNTTs. Since the department's unused load is the equivalent of about 7 sections per year, some additional GNTTs (either current AD 101 instructors or replacements for them) would be needed for the computer science unit in order to teach this course. (A course redesign in 2010-11 might make more effect use of existing CS faculty.) However, face-to-face AD 101 sections on the main campus run at 35 students each, which would greatly increase capacity for the computer science unit.

Plan to Address

First, plans to address this area from the last program review (which were targeted towards the original 2012 date for the next program review) are continuing, with the status of those two items discussed in the follow-up section below. One of those two items would reduce the unused faculty load in 2010-11 to just one contact hour, the other would increase enrollment through greatly increased recruiting efforts.

Second, the CS faculty will continue its retention efforts, which have already reversed a short-term spike in low-enrollment courses. However, it should be noted that traditionally computer science programs throughout the United States have difficulties in retaining students, especially those with less than average analytical skills.

Third, the CS department is willing to take over AD 101, with the understanding of the limitations described above, i.e. it would require some GNTTs to teach a majority of those 30 sections. This would maximize CS faculty teaching load and greatly increase teaching capacity. (The CS department is also willing to take over additional computing courses taught in other units as well.)

Fourth, a long-overdue process to revitalize the CIS program will be enacted. In line with CIS's original name (Applied Computer Science), this revision will consider the application of computing in various disciplines. This will be a thorough examination involving all the core and non-core courses. The program will be redesigned during 2010-11 with the following in mind: the future job market conditions, the students' interest and capabilities, and the guidelines in curriculum models such as the Information Systems 2010 developed jointly by the Association for Computing Machinery (ACM) and the Association for Information Systems (AIS). The revamped program will have different threads to address various application areas (such as arts, biology, business, entertainment, law) and specialization in the related computing discipline itself (such as embedded systems, infrastructure & security, software engineering). New courses for the various application threads (which combine application domains with computing) will be designed jointly with faculty in other departments. It is hoped that this curriculum revamp will attract many new students, including those that might have chosen the now-cancelled Management Information Systems program.

Finally, if a tenured faculty member without a PhD in computer science leaves Southeast, consideration should be given to filling that line with a GNTT, in order to provide more flexibility.

Brief Follow Up on Outcomes of Plans to Address from Last Review

The next program review was originally supposed to be in 2012, and as such any Plans to Address from the last review are still in progress. The two proposed actions mentioned in the last review related to this section, and their current status, are:

* Continue to seek increased internal demand for courses taught by CS faculty, including the possible development of one or more university studies UI/IU 3XX courses. Target date for action: Spring 2010 (after the accreditation visit).
Current Status (May 2010): On schedule; an IU 3xx course on computer ethics has been proposed to the CS faculty by Dr. Amer, and is under active discussion. If an IU 3xx course is approved for Spring 2011, this would reduce the department's unused capacity from four to just one contact hour.

* Continue ongoing work with University Admissions on recruitment of CS and CIS majors and minors.
Current Status (May 2010): Dean McGowan and Dr. Bagert had previously agreed this should be a priority after accreditation is achieved in summer 2010. The intention is for the department chair to visit guidance counselors at several high schools in the Bootheel starting in Fall 2010, while coordinating those visits with University Admissions.

Program Review Final University Committee Chair Comments

II. REVENUE AND OTHER RESOURCES GENERATED BY THE PROGRAM

REVENUE DATA UNDERGRADUATE					
Measure	AY07	AY08	AY09	Year 4	Year 5
All Courses - SCH Revenue					
On Campus FS	344,247.93	353,461.04	326,668.80		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	8,041.47	14,625.72	695.04		
Subtotal Revenue SCH	352,289.40	368,086.76	327,363.84		
All Courses - Fees Revenue					
On Campus FS	1,110.00	1,570.00	1,180.00		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	110.00	100.00	0.00		
Subtotal Revenue FeeS	1,220.00	1,670.00	1,180.00		
All Courses - Total SCH and Fees	353,509.40	369,756.76	328,543.84		
Univ Studies Crses - SCH Revenue					
On Campus FS	40,336.92	33,035.76	27,106.56		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	0.00	0.00	0.00		
Subtotal Revenue SCH	40,336.92	33,035.76	27,106.56		
Univ Studies Crses - Fees Revenue					
On Campus FS	0.00	210.00	130.00		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	0.00	0.00	0.00		
Subtotal Revenue FeeS	0.00	210.00	130.00		
Univ Studies - Total SCH and Fees	40,336.92	33,245.76	27,236.56		
SER/BC/ROM Crses - SCH Revenue					
On Campus FS	121,010.76	142,723.12	153,372.16		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	6,855.09	6,852.60	0.00		
Subtotal Revenue SCH	127,865.85	149,575.72	153,372.16		
SER/BC/ROM Crses - Fees Revenue					
On Campus FS	1,080.00	1,360.00	1,030.00		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	110.00	100.00	0.00		
Subtotal Revenue Fees	1,190.00	1,460.00	1,030.00		
SER/BC/ROM - Total SCH and Fees	129,055.85	151,035.72	154,402.16		
Major Courses - SCH Revenue					

On Campus FS	182,900.25	177,702.16	146,190.08		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	1,186.38	7,773.12	695.04		
Subtotal Revenue SCH	184,086.63	185,475.28	146,885.12		
Major Courses - Fees Revenue					
On Campus FS	30.00	0.00	20.00		
Off Campus FS	0.00	0.00	0.00		
Summer On and Off Campus	0.00	0.00	0.00		
Subtotal Revenue FeeS	30.00	0.00	20.00		
Major Courses - Total SCH and Fees	184,116.63	185,475.28	146,905.12		
Unit Revenue External Grants	0.00	0.00	0.00		

SUMMARY UNDERGRADUATE		
Measure	Mean	Trend
All Courses - SCH Revenue		
On Campus FS	341,459.26	Irregular
Off Campus FS	0.00	Static
Summer On and Off Campus	7,787.41	Irregular
Subtotal Revenue SCH	349,246.67	Irregular
All Courses - Fees Revenue		
On Campus FS	1,286.67	Irregular
Off Campus FS	0.00	Static
Summer On and Off Campus	70.00	Declining
Subtotal Revenue FeeS	1,356.67	Irregular
All Courses - Total SCH and Fees	350,603.33	Irregular
Univ Studies Crses - SCH Revenue		
On Campus FS	33,493.08	Declining
Off Campus FS	0.00	Static
Summer On and Off Campus	0.00	Static
Subtotal Revenue SCH	33,493.08	Declining
Univ Studies Crses - Fees Revenue		
On Campus FS	113.33	Irregular
Off Campus FS	0.00	Static
Summer On and Off Campus	0.00	Static
Subtotal Revenue FeeS	113.33	Irregular
Univ Studies - Total SCH and Fees	33,606.41	Declining
SER/BC/ROM Crses - SCH Revenue		
On Campus FS	139,035.35	Improving

Off Campus FS	0.00	Static
Summer On and Off Campus	4,569.23	Declining
Subtotal Revenue SCH	143,604.58	Improving
SER/BC/ROM Crses - Fees Revenue		
On Campus FS	1,156.67	Irregular
Off Campus FS	0.00	Static
Summer On and Off Campus	70.00	Declining
Subtotal Revenue Fees	1,226.67	Irregular
SER/BC/ROM - Total SCH and Fees	144,831.24	Improving
Major Courses - SCH Revenue		
On Campus FS	168,930.83	Declining
Off Campus FS	0.00	Static
Summer On and Off Campus	3,218.18	Irregular
Subtotal Revenue SCH	172,149.01	Irregular
Major Courses - Fees Revenue		
On Campus FS	16.67	Irregular
Off Campus FS	0.00	Static
Summer On and Off Campus	0.00	Static
Subtotal Revenue FeeS	16.67	Irregular
Major Courses - Total SCH and Fees	172,165.68	Irregular
Unit Revenue External Grants	0.00	Static

UNDERGRADUATE

Brief Conclusion from Data

Revenue decreased across the board in 2008-09 due to the corresponding loss of majors. An increase in majors will increase revenue. However, this alone is not sufficient, at least in the short-term.

Additional Data or Comments

The CS department has been informed that it is likely that $30 per credit hour increase on courses in this unit (i.e. those with CS or IS prefixes) will enacted by the Board of Regents on May 15, and will be implemented starting in Fall 2010. The Budget Committee projections indicate that this will bring in $150,000 in additional revenue over the next three years. However, it is unclear how much the increased cost to the student will affect the number of CS and CIS majors.

Plan to Address

The goal of the CS department is to increase revenues and decrease costs over the next three years sufficiently to persuade the Board of Regents to rescind the $30 per credit hour increase starting in Fall 2013. Some of this is intended to come from an increase in revenue from existing sources, but more from a significant decrease in costs, whose Plan to Address is described in Section III.

There are two steps proposed. First, as discussed in Section I, steps were taken starting in 2008 to increase retention, which is showing payoff with higher enrollments expected from Fall 2010 registration to date. Such efforts will of course continue.

Second, as also stated in Section I, the department is willing to take on new and existing computing-related service courses, which will increase revenue for a relatively minimal cost (compared to courses for CS/CIS majors). However, such efforts would be hampered if the $30 per credit hour increase was applied to courses such as AD 101 if CS took charge of them.

Brief Follow Up on Outcomes of Plans to Address from Last Review

No plans to address in this area were included in the last program review, other than the recruitment efforts already discussed in Section I.

Program Review Final University Committee Chair Comments

III. COSTS AND OTHER EXPENSES ASSOCIATED WITH THE PROGRAM

COSTS DATA UNDERGRADUATE					
	AY07	AY08	AY09	Year 4	Year 5
Cost Per Major	2,962.00	3,091.00	4,275.00		
Unit Costs per Major SCH - On campus FS	344.00	421.00	620.00		
Unit Costs per Major SCH - Off campus FS	0.00	0.00	0.00		
Unit Costs per Major SCH - Summer	178.00	452.00	0.00		
Unit Costs per Major SCH - Overall	342.00	422.00	618.00		
Unit Costs for Major Crses - On campus FS	453,172.00	473,930.00	555,746.00		
Unit Costs for Major Crses - Off campus FS	0.00	0.00	0.00		
Unit Costs for Major Crses - Summer	2,932.00	17,611.00	0.00		
Unit Costs for Major Crses - Overall	456,103.00	491,541.00	555,746.00		
Unit Costs per Univ Studies SCH - On campus FS	125.00	243.00	262.00		
Unit Costs per Univ Studies SCH - Off campus FS	0.00	0.00	0.00		
Unit Costs per Univ Studies SCH - Summer	0.00	0.00	0.00		
Unit Costs per Univ Studies SCH - Overall	125.00	243.00	262.00		
Unit Costs for Univ Studies Crses - On campus FS	25,571.00	37,173.00	30,596.00		
Unit Costs for Univ Studies Crses - Off campus FS	0.00	0.00	0.00		
Unit Costs for Univ Studies Crses - Summer	0.00	0.00	0.00		
Unit Costs for Univ Studies Crses - Overall	25,571.00	37,173.00	30,596.00		
Unit Costs per SER/BC/ROM SCH - On campus FS	271.00	339.00	352.00		
Unit Costs per SER/BC/ROM SCH - Off campus FS	0.00	0.00	0.00		
Unit Costs per SER/BC/ROM SCH - Summer	178.00	215.00	0.00		
Unit Costs per SER/BC/ROM SCH - Overall	264.00	333.00	352.00		
Unit Costs for SER/BC/ROM Crses - On campus FS	55,139.00	114,453.00	139,671.00		
Unit Costs for SER/BC/ROM Crses - Off campus FS	0.00	0.00	0.00		
Unit Costs for SER/BC/ROM Crses - Summer	2,932.00	3,218.00	0.00		
Unit Costs for SER/BC/ROM Crses - Overall	58,071.00	117,671.00	139,671.00		
Unit Costs per All SCH - On campus FS	310.00	387.00	515.00		
Unit Costs per All SCH - Off campus FS	0.00	0.00	0.00		
Unit Costs per All SCH - Summer	178.00	386.00	0.00		
Unit Costs per All SCH - Overall	307.00	387.00	514.00		
Unit Costs for All Crses - On campus FS	533,882.00	625,556.00	726,012.00		
Unit Costs for All Crses - Off campus FS	0.00	0.00	0.00		
Unit Costs for All Crses - Summer	5,863.00	20,828.00	0.00		
Unit Costs for All Crses - Overall	539,745.00	646,384.00	726,012.00		

COSTS COMPARISONS UNDERGRADUATE					
	AY07	AY08	AY09	Year 4	Year 5
College Cost per Major	4,816.00	5,019.00	1,911.00		
University Cost per Major	3,297.00	3,345.00	2,083.00		
Delaware Study Cost/SCH Unit	313.00	374.00	0.00		
College Cost per Major SCHR	282.00	322.00	325.00		
University Cost per Major SCHR	204.00	214.00	231.00		
College Cost per Univ Studies SCHR	142.00	116.00	107.00		
University Cost per Univ Studies SCHR	153.00	108.00	106.00		
College Cost per SER/BC/ROM SCHR	103.00	106.00	109.00		
University Cost per SER/BC/ROM SCHR	121.00	130.00	117.00		
College Cost per all SCHR	142.00	147.00	143.00		
University Cost per all SCHR	153.00	155.00	161.00		

SUMMARY UNDERGRADUATE		
	Mean	Trend
Cost Per Major	3,442.66	Improving
Unit Costs per Major SCH - On campus FS	461.66	Improving
Unit Costs per Major SCH - Off campus FS	0.00	Static
Unit Costs per Major SCH - Summer	210.00	Irregular
Unit Costs per Major SCH - Overall	460.66	Improving
Unit Costs for Major Crses - On campus FS	494,282.66	Improving
Unit Costs for Major Crses - Off campus FS	0.00	Static
Unit Costs for Major Crses - Summer	6,847.66	Irregular
Unit Costs for Major Crses - Overall	501,130.00	Improving
Unit Costs per Univ Studies SCH - On campus FS	210.00	Improving
Unit Costs per Univ Studies SCH - Off campus FS	0.00	Static
Unit Costs per Univ Studies SCH - Summer	0.00	Static
Unit Costs per Univ Studies SCH - Overall	210.00	Improving
Unit Costs for Univ Studies Crses - On campus FS	31,113.33	Irregular
Unit Costs for Univ Studies Crses - Off campus FS	0.00	Static
Unit Costs for Univ Studies Crses - Summer	0.00	Static
Unit Costs for Univ Studies Crses - Overall	31,113.33	Irregular
Unit Costs per SER/BC/ROM SCH - On campus FS	320.66	Improving
Unit Costs per SER/BC/ROM SCH - Off campus FS	0.00	Static
Unit Costs per SER/BC/ROM SCH - Summer	131.00	Irregular
Unit Costs per SER/BC/ROM SCH - Overall	316.33	Improving
Unit Costs for SER/BC/ROM Crses - On campus FS	103,087.66	Improving

Unit Costs for SER/BC/ROM Crses - Off campus FS	0.00	Static
Unit Costs for SER/BC/ROM Crses - Summer	2,050.00	Irregular
Unit Costs for SER/BC/ROM Crses - Overall	105,137.66	Improving
Unit Costs per All SCH - On campus FS	404.00	Improving
Unit Costs per All SCH - Off campus FS	0.00	Static
Unit Costs per All SCH - Summer	188.00	Irregular
Unit Costs per All SCH - Overall	402.66	Improving
Unit Costs for All Crses - On campus FS	628,483.33	Improving
Unit Costs for All Crses - Off campus FS	0.00	Static
Unit Costs for All Crses - Summer	8,897.00	Irregular
Unit Costs for All Crses - Overall	637,380.33	Improving

UNDERGRADUATE

Brief Conclusion from Data

The main source of the large cost increase in 2008-09 was due to the hiring of Dr. Amer (in order to obtain ABET accreditation) and taking on half of Dr. Hou's salary, which will not be the case after May 2010. The current situation and limited options involving existing CS faculty were discussed in detail in Section I.

Additional Data or Comments

It should be pointed out that Dr. Hou joined the CS faculty due to a process initiated by then-Provost Jane Stephens. It was not sought by CS, and it was understood at the time that this would increase departmental costs. Dr. Hou is an excellent teacher, but his addition has adversely affected several of the ratios used by Assessment to determine the level of productivity of the CS department, most notably Cost Per SCH.

Plan to Address

1. As mentioned above, after this month, Dr. Hou will no longer be on the computer science payroll, saving the department $28,683 per year, or more than half of the increase revenue projected by the Budget Committee from the $30 per credit hour increase (see Section II).

2. Over $46,000 per year has been spent during the last few years on equipment. It is proposed to reduce this amount to $30,000 using the following steps:

a. The number of computer stations (currently 35) in the CS "open lab" (Dempster Hall 023) can be reduced by the number of department faculty needing new desktops and those extra computer stations can be placed in faculty offices, thus eliminating the cost of new faculty workstations. The result of this reduction will provide more space for student work areas and for student personal laptop use in the open lab, where many CS and CIS students (especially commuters) congregate between classes during the day.

b. Over time, the number of stations in the open lab would continue to be decreased, thus significantly decreasing equipment costs. This would likely have the side effect of eventually phasing out stations dedicated to the capstone project course, and instead use server space from CSTL.

c. Splitting the CS "closed lab" (Dempster Hall 026), which has 40 computers, into two labs of 20 computers to better address the teaching needs of the department. (This could be done using a divider which would allow 40-station lab when necessary.)

d. Approximately 40 laptops, 40 laptop batteries and 2 power carts are housed in the department storeroom. This equipment receives little use, and splitting the closed lab into two parts would eliminate any current need for them. Although these computers are somewhat out of date and rather slow, they are still capable of running Visual Studio and Microsoft Office. These machines also have wireless capability. The department will explore uses for these machines or receive credit for their reasonable value if they are moved to another department.

e. Regulate printing costs in the closed lab as is currently done in the open lab.

f. Faculty computers are usually replaced once every three years. For those faculty desiring the department to pay for two computers (both a desktop and a laptop) will need to replace them on a staggered six-year cycle.

3. Work to ensure that most CS office materials/handouts and instructor materials/handouts are be electronically generated. This would also allow this department to work toward being more "green". Projected savings: $1,000 per year.

4. Reduce the professional development funds contributed by the department so that there is an average of only one conference per year covered (funds permitting). (Commitments already made for 2010-11 would be honored.) Projected savings: $2,000 per year.

The above adds up to $47,683 per year. This, plus slightly increase revenue from increased enrollment, should match the increased revenue projected from the $30 per credit hour fee increase, and would hopefully lead to its repeal in 2013.

If cost reductions are still insufficient, the difficult decision to eliminate student grader and lab workers (about $3000 per year) will be strongly considered. The reluctance to do this stems from the fact that this would take both money and valuable learning experience away from CS and CIS students.

Brief Follow Up on Outcomes of Plans to Address from Last Review

No plans to address in this area were included in the last program review.

Program Review Final University Committee Chair Comments

IV. CONTRIBUTION TO UNIVERSITY STUDIES AND COURSES SERVING OTHER PROGRAMS

UNIT SCH FROM UNIVERSITY STUDIES AND COURSES SERVING OTHER PROGRAMS					
	AY07	AY08	AY09	Year 4	Year 5
University Studies: On Campus FS	204	153	117		
University Studies: Off Campus FS	0	0	0		
University Studies: Summer	0	0	0		
University Studies: Total	204	153	117		
Services: On Campus FS	0	15	132		
Services: Off Campus FS	0	0	0		
Services: Summer	0	0	0		
Services: Total	0	15	132		
ROM: On Campus FS	612	646	530		
ROM: Off Campus FS	0	0	0		
ROM: Summer	33	30	0		
ROM: Total	645	676	530		
Business Core: On Campus FS	0	0	0		
Business Core: Off Campus FS	0	0	0		
Business Core: Summer	0	0	0		
Business Core: Total	0	0	0		

UNIT SCH SUMMARY		
Measure	Mean	Trend
University Studies: On Campus FS	158.0	Declining
University Studies: Off Campus FS	0.0	Static
University Studies: Summer	0.0	Static
University Studies: Total	158.0	Declining
Services: On Campus FS	49.0	Improving
Services: Off Campus FS	0.0	Static
Services: Summer	0.0	Static
Services: Total	49.0	Improving
ROM: On Campus FS	596.0	Irregular
ROM: Off Campus FS	0.0	Static
ROM: Summer	21.0	Declining
ROM: Total	617.0	Irregular
Business Core: On Campus FS	0.0	Static
Business Core: Off Campus FS	0.0	Static

Business Core: Summer	0.0	Static
Business Core: Total	0.0	Static

UNDERGRADUATE

Brief Conclusion from Data

The department offers two to three sections of UI 100: Digital Nation each fall and one most spring semesters, plus a section of UI 450 (Capstone Project) every spring (now team taught with Physics & Engineering Physics and Global Studies, as of 2009-10). The number of hours will vary with the number of sections the department is asked to teach (it was only two in 2008-09). Rest assured, the CS department has taught its share of UI 100 sections (it was four in 2009-10) and will most assuredly continue to do so.

The large increase in service hours is due to CS 177, which has been required of new Physics and Engineering Physics students since Fall 2008.

Additional Data or Comments

None.

Plan to Address

As previously stated in Section I, the CS department is currently developing a University Studies course entitled "Computing and Ethics".

Also, as previously discussed, the department is capable of offering (jointly, where necessary) introductory computer application/programming courses for all majors in the University. To start with, the department wishes to take on the responsibility for teaching AD 101, and add new or existing courses to teach or co-teach later.

Brief Follow Up on Outcomes of Plans to Address from Last Review

No plans to address in this area were included in the last program review, other than the IU 3xx course already discussed in Section I.

Program Review Final University Committee Chair Comments

V. EXTERNAL DEMAND

EXTERNAL DEMAND DATA UNDERGRADUATE										
	AY07		AY08		AY09		Year 4		Year 5	
ACT DATA										
	N	ACT	N	ACT	N	ACT	N	ACT	N	ACT
No. Identifying Planned Major										
UNIT Totals			809	22.36						
COMPUTER & INFO SCI GEN [560]			284	21.90						
COMPUTER PROGRAMMING [561]			340	22.10						
COMPUTER SCIENCE [562]			171	23.50						
MATH/COMPUTER SCIENCE [565]			14	24.30						
No. of ACT Scores to Southeast										
UNIT Totals			78	22.38						
COMPUTER & INFO SCI GEN [560]			28	21.80						
COMPUTER PROGRAMMING [561]			28	22.40						
COMPUTER SCIENCE [562]			22	23.10						
MATH/COMPUTER SCIENCE [565]			0	0.00						
Yield: No. Enrolled at Southeast										
UNIT Totals			23	23.37						
COMPUTER & INFO SCI GEN [560]			6	23.00						
COMPUTER PROGRAMMING [561]			6	23.70						
COMPUTER SCIENCE [562]			11	23.40						
MATH/COMPUTER SCIENCE [565]			0	0.00						

SUMMARY UNDERGRADUATE		
	Mean	Trend
Yield: No. Enrolled at Southeast		
UNIT Totals	23.4	
COMPUTER & INFO SCI GEN [560]	23.0	
COMPUTER PROGRAMMING [561]	23.7	
COMPUTER SCIENCE [562]	23.4	
MATH/COMPUTER SCIENCE [565]	0.0	

Additional Data Available at http://www.missourieconomy.org/occupations/occ_proj.stm

UNDERGRADUATE

Brief Conclusion from Data

The only comment on the one year of information on the External Demand spreadsheet is that the average ACT scores under "Number Enrolled at Southeast" for AY08 is more than a point lower than those actually majoring CS and CIS at Southeast. Exactly what that means is unclear.

Additional Data or Comments

State data from website:

MERIC confirms that computing jobs in the state of Missouri are increasing at a much-higher-than-average rate, and with solid starting and average salaries both statewide and in the St. Louis and Southeast (Missouri) Regions.

In "Missouri's Employment Outlook 2006-2016", "Computing Software Engineers, Applications" (CSEA) is the fourth-fastest growing occupation (33.65% over a ten-year-period).

The MERIC document "2006-2016 Career Grades: Navigating Missouri's Top Jobs" gives a grade of A+ over the entire state to “Computer Systems Analysts” (CSA), as well as for the St. Louis Region.

In an updated, more detailed spreadsheet for 2008-18, MERIC shows CSEA and CSA as A+ jobs for the St. Louis Region, and A- jobs for the Southeast Region. Entry-level salaries for either of these in both regions are above $50,000.

A second spreadsheet shows that statewide, CSEA and CSA rank 29th (mean $78,380) and 33rd ($76,060), respectively, under "Occupations with the Highest Wages [Overall]".

Corresponding national data:

Every two years, the U.S. Department of Labor publishes an Occupational Outlook Handbook (OOH); the handbook for Spring 2010 looks at prospects for job growth over the period 2008-18, and reflects Missouri's positive outlook regarding the computing jobs available to CS and CIS graduates. They project an increase of 252,000 software engineering jobs (an increase of 32%) over that decade. It also cited a July 2009 report that starting salary offers for graduates with a bachelor's degree in CS averaged $61,407 over the previous year.

(It should be noted that both state and national data list an occupation of "Computer Programmer". As stated in the latest OOH, these jobs are mainly for people without bachelor’s degrees in CS i.e. they do not pertain to the job outlook for Southeast CS or CIS graduates.)

Also, U.S. News and World Report's "Job Outlook for Best Careers 2010" lists "Computer Software Engineer" as one of the ten best careers of 2010, and two other computing-related jobs among their top 50.

Stakeholders:

The Computer Science Advisory Board met had their annual meeting at Southeast on May 1, 2010, and issued the following statement on May 3:

"We, the advisory board for Southeast Missouri State University's Computer Science Department, feel it is of utmost importance that both the Computer Science and Computer Information Systems degree programs continue to receive the support of the University and the wherewithal to continue the respective degree offerings for the foreseeable future. Person for person, Southeast's Computer Science department produces highly prepared and extremely competent computer scientists, application engineers, software engineers and computer software and hardware specialists. Our regional community would be poorer without them.

"We feel, with accreditation nearly in hand (the accreditation is up for vote on July 9th 2010 with no foreseeable issues), the Computer Science degree must be given its chance to shine. Additionally, several plans are in place to further expand the Computer Information Systems degree's productivity by implementing key interdisciplinary coursework which would both foster interdepartmental relationships while increasing the awareness of the vital importance of computer information systems within other programs.

"The loss of either of these degree paths would be a blow not only to the University as a whole, but the regional community as well."

Plan to Address

The only need is to ensure that our programs are up-to-date and continue to meet the needs of our stakeholders. The CS program is in good shape and the CIS program is being revised, as discussed in Section I.

Brief Follow Up on Outcomes of Plans to Address from Last Review

No plans to address in this area were included in the last program review.

Program Review Final University Committee Chair Comments

VI. QUALITY OF PROGRAM INPUTS

UNDERGRADUATE					
Measure	AY07	AY08	AY09	Year 4	Year 5
ACT	23.03	24.65	25.41		
Selected Merit Scholarships	6.00	14.00	6.00		
High School GPA	3.33	3.31	3.53		
CBASE Composite	0.00	0.00	0.00		
CBASE English	0.00	0.00	0.00		
CBASE Math	0.00	0.00	0.00		
CBASE Science	0.00	0.00	0.00		
CBASE Social Studies	0.00	0.00	0.00		
CBASE Writing	0.00	0.00	0.00		

COMPARISONS UNDERGRADUATE															
	AY07			AY08			AY09			Year 4			Year 5		
	COLL	UNIV	NAT	COLL	UNIV	NAT	COLL	UNIV	NAT	COLL	UNIV	NAT	COLL	UNIV	NAT
ACT	23.53	22.24	21.10	24.08	22.38	21.20	24.49	22.59	21.10						
High School GPA	3.47	3.31		3.52	3.29		3.68	3.40							
CBASE Composite	0.00	0.00		0.00	0.00		0.00	0.00							
CBASE English	0.00	0.00		0.00	0.00		0.00	0.00							
CBASE Math	0.00	0.00		0.00	0.00		0.00	0.00							
CBASE Science	0.00	0.00		0.00	0.00		0.00	0.00							
CBASE Social Studies	0.00	0.00		0.00	0.00		0.00	0.00							
CBASE Writing	0.00	0.00		0.00	0.00		0.00	0.00							

SUMMARY UNDERGRADUATE		
Measure	Mean	Trend
ACT	24.20	Improving
High School GPA	3.32	Irregular
CBASE Composite	0.00	Static

UNDERGRADUATE

Brief Conclusion from Data

After analyzing the ACT and high school GPA data, the department feels that most of its incoming students have the average-to-excellent background in math and science required for success in CS or CIS. The ACT data provided by Institutional Research states that in 2007, 2008, and 2009 the average ACT scores were 23.03, 24.65 and 25.41 for all students majoring in the computer science department. Compared with the ACT average of AY07, AY08 and AY09 for undergraduates in the college, CS department undergraduate ACT averages are higher (except AY07). They are higher than the averages in the entire university for AY07, AY08 and AY09, as well. There is also an indication that the trend of ACT average for CS department freshmen is on the rise: jumping from 23.03 of AY07 to 25.41 of AY09, while the trend of the ACT average is flat at both college and university level.

The high school GPA data shows that in 2007, 2008, and 2009 the average GPA were 3.33, 3.31 and 3.53 for all students majoring in the computer science department, which is higher than its average for undergraduates in the university. The provided data also indicates that the trend of GPA average for CS department freshmen is generally improving, with only a 0.02 decrease (basically flat) in AY08 causing the "irregular" trend.

Additional Data or Comments

This past year's freshmen have bonded especially well, with many of them spending considerable time together during the day in the CS open lab. A programming competition for the students organized by Dr. Amer has also helped stimulate these high-quality students in CS-prefixed courses.

Plan to Address

None needed.

Brief Follow Up on Outcomes of Plans to Address from Last Review

No plans to address in this area were included in the last program review, other than the recruitment efforts already discussed in Section I.

Program Review Final University Committee Chair Comments

VII. QUALITY OF PROGRAM OUTPUTS

WP003 UNDERGRADUATE										
	AY07		AY08		AY09		Year 4		Year 5	
	N	%	N	%	N	%	N	%	N	%
>= 9.5 (superior)	0	0.00	1	7.14	3	18.75				
8.0 - 9.0 (proficiency)	12	60.00	5	35.71	12	75.00				
7.0 - 7.5 (marginal pass)	8	40.00	6	42.85	0	0.00				
< 7.0 (fail)	0	0.00	2	14.28	1	6.25				
Unit First Time Pass Rate	20	100.00	13	92.85	15	93.75				
Unit Mean	20	7.97	14	7.57	16	8.71				

WP003 COMPARISONS UNDERGRADUATE					
	AY07	AY08	AY09	Year 4	Year 5
College Mean	8.26	8.40	8.67		
College Pass Rate	100.00	99.31	98.13		
University Mean	8.25	8.34	8.35		
University Pass Rate	97.99	98.74	98.23		

DISCIPLINE SPECIFIC UNDERGRADUATE						
		AY07	AY08	AY09	Year 4	Year 5
MFAT (Majors Only)						
MF12: MFAT CompSci - Total	Southeast	143.72	143.24	146.36		
	Comparison					
MFAT (All Majors)						
MF12: MFAT CompSci - Total	Southeast	144.77	145.18	148.17		
	Comparison					

WP003 SUMMARY UNDERGRADUATE		
Method	Mean	Trend
WP003 Mean	8.12	Irregular

DISCIPLINE SPECIFIC SUMMARY UNDERGRADUATE		
Method	Mean	Trend
MFAT (Majors Only)		
MF12: MFAT CompSci - Total	144.10	Irregular
MFAT (All Majors)		
MF12: MFAT CompSci - Total	145.66	Improving

UNDERGRADUATE

Brief Conclusion from Data

The WP 003 writing examination results for the last three years have 75% of departmental graduate at Core Proficiency level or higher. The students passed with Superior level have increased consistently from 0% in AY07 to 7.14% in AY08, and 18.75% in AY09.

The MFAT Computer Science exam results, even with CS major and CIS major combined, have been relatively consistent (a range of less than 3 points on a scale of 200); CS seniors normally do significantly better on the exam than CIS ones, since about 20% of the exam MFAT Computer Science content is not normally studied by CIS majors.

Additional Data or Comments

The most recent MFAT results (AY10) average is 154.5 which is a more than 8-point increase than AY09, the best of the previous three years. (The AY10 data was provided by Testing Services to the department chair.)

It should also be noted that the relatively consistency in MFAT exam scores is encouraging since the CS and CIS seniors only have to take the test and make a good faith effort (i.e. not doing something like answering the same letter for each question) as opposed to achieving some minimum score. It is because of this that the MFAT is not used in the annual assessment plan for CS and CIS, which instead uses assessment of course outcomes (objectives) and other quantitative data in order to assess achievement of program outcomes (objectives).

In its evaluation of the computer science program last fall, ABET only found one concern, no weaknesses and no deficiencies in its assessment of program outcomes, and that concern that perhaps too much time was being put in by the faculty in assessment tasks. (This concern is being addressed.) ABET also found no concerns, weaknesses or deficiencies in its evaluation of the faculty's continuous improvement process for the computer science program.

Plan to Address

None needed.

Brief Follow Up on Outcomes of Plans to Address from Last Review

ABET/CAC accreditation for the computer science program is all but achieved, with the final vote scheduled for July 9-10.

Program Review Final University Committee Chair Comments

VIII. CURRENCY OF CURRICULUM

UNDERGRADUATE

What steps have you taken to ensure that your programs and courses are up-to-date and effective?

Most of the CS faculty members attend computing education conferences each year, most prominently the Symposium on Computer Science Education held annually by ACM.

For CS, Southeast follows the general guidelines of the most recent version of the curriculum model jointly developed by ACM and the Computer Society of the Institute of Electrical and Electronics Engineers (IEEE-CS) as part of the Computing Curricula project discussed in Section I.

The CS curriculum was reviewed as part of the accreditation visit last fall. They found no deficiencies, no weaknesses, and only one concern:

"The team found that students have a number of opportunities to practice written and oral communication skills through assignments in a variety of courses, but students are not provided feedback on the quality of their writing. Students are required to pass a university-wide two part essay evaluation (WP003) assuring a minimum level of writing proficiency. However, this evaluation focuses on general rather than technical writing, and the lack of critical evaluation in these skills may impact the student's ability to effectively communicate technical information."

For ABET, a concern does not affect whether or not a program is accredited, or the length of its accreditation. However, the CS faculty had already been acting on this issue by the time of the visit, by supporting a proposal by the English department to make IU 309 (Writing for Science and Technology) a permanent course. If approved, the CS (and CIS) curricula will almost certainly be modified to require it.

Concerning CIS, as stated in Section I, the curriculum will be redesigned during 2010-11 with the future job market, the students' interest and capabilities, and the IS2010 Model Curriculum in mind.

Program Review Final University Committee Chair Comments

IX. IMPACT, JUSTIFICATION, AND OVERALL ESSENTIALITY TO THE SOUTHEAST MISSION

UNDERGRADUATE

Consider this excerpt of the University's mission statement:

"Southeast Missouri State University provides professional education grounded in the liberal arts and sciences and in practical experience…By emphasizing student-centered and experiential learning, the University prepares individuals to participate responsibly in a diverse and technologically-advanced world..."

Certainly the degrees in the computer science unit are excellent examples of professional education grounded in the liberal arts and (primarily computer) sciences and in practical experience (mainly through the capstone project), and also prepares individuals to participate responsibly in a technologically-advanced world.

Conversely, the computing field is so ubiquitous to the technology present society that its absence would be highly unusual. For instance, the largest four-year college or university in Missouri that does not have a computer science degree is Missouri State Southern University (enrollment 5,264 in 2009), and the largest that does not have either a CS or CIS degree is Rockhurst University (enrollment about 3,000 in 2009). In fact, there may not be any college or university in the United States with an enrollment greater than 10,000 that does not have some type of computing degree.

As was discussed in the section on external demand, the types of jobs which typically require four-year computing degrees are highly rated by State of Missouri in general, and also in the St. Louis area. These jobs are also rated as rapidly-growing nationally – with solid starting salaries upon graduation – by the U.S. Department of Labor. The Advisory Board for the CS department echo those views in statement dated May 3, 2010 (reproduced in the external demand section).

Finally, as mentioned in section on quality of program inputs, the computer science program attracts excellent students who often remain at Southeast even if they change majors outside of the unit. Some of those high-quality students would not have initially enrolled in Southeast if there were no computing degrees.

Program Review Final University Committee Chair Comments

X. PLANNING FOR THE FUTURE

Given impending personnel and environmental changes, how do you envision the configuration of your unit in five years? What components would be phased out? What components would be reduced in size? What components will have grown? What new components will have been developed? What other units might be involved in the new components?

UNDERGRADUATE

The configuration of the unit as far as majors and minors are concerned (with CS and CIS degrees, CS and IS minors) is expected to be the same in five years. The CS department proposes to add some existing service courses such as AD 101, and develop new service courses in conjunction with other departments.

No current components would be phased out.

No current components would be reduced in size.

CIS will have grown.

The service component will have significantly grown.

As discussed in Section I, the revamped CIS program will have different threads to address various application areas. Some of the units that might be involved include biology, criminal justice, mathematics, physics and engineering physics and various business units.

Finally, the topic of streamlining the CS department by possibly combining it with other departments was considered. During separate brainstorming, our faculty and the Physics and Engineering Physics (PHEP) faculty considered the idea of merging the two departments. However, after discussion, neither faculty felt the potential savings of the merger was sufficient to outweigh the potential challenges. The chairs of the CS and Mathematics departments also briefly discussed whether a merger would be mutually beneficial, with no definitive conclusion made. In general, the CS faculty feels that it is important to have its own department to maintain its identity, which will strengthen the CS unit overall.

Program Review Final University Committee Chair Comments

DEANS' COMMENTS

With a recently completed and glowing ABET accreditation process, it is clear that the quality of the computer science program is nothing short of outstanding. Additionally, the quality of their incoming students and the success of their graduates are also high. I am concerned that the $30 per credit hour fee attached to CS courses will deter future students from choosing this major. However, the high cost of the program is also clear. One action has already been taken and that was the non-renewal of a half-time RNTT that will take effect next year. I do not support the cost reductions outlined in section III. The reduction of the equipment budget will hamper the future flexibility of the department to respond to the ever changing technology in the field. The other reductions are minor. I do not support the move of AD101 to the department. AD101 is a HCOB core course and does not fit with the programming focus of CS. It is possible for several CS courses to be taught once a year instead of every semester that would result in the loss of an additional faculty member. This could be handled in several ways. I would be

supportive of qualified CS faculty teaching courses in other departments such as Physics, Math, and IET or teach AD101. Also, it is possible to move a current CS faculty member to one of these departments if openings were available. I would also seriously consider merging this department with Physics and Engineering Physics. Savings would derive from the loss of a Chair's stipend and an administrative assistant. I overwhelmingly support the continuation of these degree programs.

Final University Committee Chair Comments on Entire Document

Provost's Decision