

**FY2011 DEPARTMENTAL ANNUAL REPORT
OF CONTINUOUS IMPROVEMENT**

**Department of Mathematics and Computer Science
Fort Hays State University**

June 30 2011

I. DEPARTMENTAL OVERVIEW

The coming year is another year of challenges and opportunities for the Mathematics and Computer Science department. Professor Elena Urnysheva has left the department and we are trying to hire a strong mathematician to replace her. Dr. Anyanwu and Dr. Zeng are coming back to teach computer science courses. With the increasing demand for Computer Science graduates, we need to hire someone with a Ph.D. in Computer Science to enhance the quality of instruction and research in that area. Dr. Dreiling, Dr. Young, and Dr. Weber are our Math Education experts and are working super hard to educate our future mathematics teachers. Jeffery Sadler is coming back to teach his modern algebra and calculus. Mary Kay Schippers, Michelle Zeng, and Judy Brummer are coming back to teach their general education classes. Darlene Plymell has retired and Judy Brummer will replace her. Now we need to find someone for our intermediate algebra courses to replace Judy Brummer who will teach higher level courses. Pat Luea, continues with teaching intermediate algebra. Mark Pahls, Ginger Hamilton, and Ron Sandstrom will teach virtual courses as adjunct professors. Mary Kay Schippers is planning to retire fall of 2012, so we better train someone to teach the Liberal Arts Mathematics course which was taught by Mary Kay.

Quantitatively, the number of undergraduate credit hours generated by the department has increased from 6600 in 2007 to 8800 in 2010. This is a 33% increase in productivity which indicates the hard work and dedication of our faculty. The quality of instruction and research also continues to improve in our department. Presentations and publications are encouraged and rewarded.

Two words that are often used to describe our society in the 21st century are technology and change. Both words are fundamental to the mission and vision of the Department of Mathematics and Computer Science. Technology is driven by not only the advances in hardware and related devices; but, also, by the software that makes those devices useful to the user. The discipline of computer science with our major in software engineering is focused to produce majors who can develop software, using current methodologies, to be used on these devices. Our curriculum prepares students to become Java certified before they graduate. Java programs are the engine that drives the internet. The discipline of mathematics has provided for 300 years and continues to provide the language and tools necessary to describe and analyze changes in society. These students are well prepared to enter the industrial work place, government security agencies, as well as the teaching profession. Employment prospects are currently good, and future projections indicate strong demand for all of our graduates. Salaries for computer science graduates are excellent with many growth opportunities within companies. Unfortunately, salaries for education are dismal even though the job market is not close to being satisfied.

A. Departmental Mission and Vision Statements

Department Mission Statement

The Department of Mathematics and Computer Science awards both the Bachelor of Arts and Bachelor of Science in Mathematics; and the Bachelor of Science (Applied) in Computer Science. The undergraduate major programs meet the needs of students who: (a) are preparing to teach mathematics at the middle, secondary or two-year college level; (b) plan a career in business and industry using

computers and mathematics; or (c) plan to continue to study mathematics or computer science at the graduate level. Depending on their career goals, students choose one of two emphases: Teaching or Industrial/Academic, in the mathematics major; or one of six software development emphases in the computer science major. Furthermore, courses are provided for students who require knowledge of mathematics or computing as part of liberal education, or in preparation for varied fields of study.

Department Vision Statement

The Department of Mathematics and Computer Science aspires to hire, retain, and support faculty from diverse backgrounds with varied interests who are recognized locally, regionally, and nationally to be dedicated, effective teachers, active scholars, and service minded; and who work collegially within a supportive environment to provide curricula in:

- A) Computer Science so
1. Students gain and develop foundation skills and concepts enabling them to adapt to quickly changing technologies.
 2. Students have opportunities to become certified in internet interactive languages.
 3. Students are competent in current technologies, methods, and procedures.
 4. Students have a fundamental understanding of computer science concepts allowing them to pursue further study.
 5. Students are exposed to and appreciate the usefulness of computer science in society.
 6. Students seek to be part of the premier institution within the State of Kansas for the education of computer application programmers.
- B) Mathematics so
1. Students possess a fundamental understanding of the basics of mathematics.
 2. Students are exposed to the study and appreciation of the concepts and methods thereby promoting interest and understanding in mathematics.
 3. Students are prepared for further undergraduate and graduate studies in mathematics, the sciences, and other areas.
 4. Students are exposed to and appreciate the usefulness of mathematics as a universal language of the diverse society in which we live.
 5. Students seek to be part of the premier institution within the State of Kansas for the education of middle and secondary level mathematics teachers.

B. Departmental Goals, Objectives, and Strategic Priorities

1. Create a Math Tutoring Center. (Partially achieved)
2. Develop a MATLAB center so students in higher level mathematics courses can do their projects with the most advanced technology available.
3. Develop a problem-solving study group in connection with our Thursday Seminar. (Partially achieved with the leadership of Dr. Young, Dr. Weber, and Dr. Zeng)
4. Increase the number of students interested in teaching mathematics at the middle, secondary, and college level by use of two new endowed scholarships.

5. Continue to press the Kansas Legislature to provide forgivable financial awards to those students choosing to teach mathematics at the secondary level.
6. Develop courses around the theme of Computer Forensics which could lead to a certificate.
7. Encourage students to gain Java certification.
8. Develop projects/activities for all lower level and general education courses that make use “Mobile Computing” in terms of an on-line graphing calculator, Excel Spreadsheet, or MAPLE Software which is a sophisticated mathematical software package.
9. Enhance the quality of computer science teaching and research by hiring new faculty and reassigning responsibilities. (Partially done)
10. Enhance the level of courses offered for gifted students or students who intend to go to graduate school. (Partially done by offering Topology and Partial Differential Equations as summer courses)

C. Department Productivity and Distinctive Accomplishments

Quantitatively, the number of undergraduate credit hours generated by the department has increased more than 33% over the past 3 years, from 6600 credit hours to 8800, which is impressive by any standard. The quality of instruction and research also continues to improve in our department. Presentations and publications are encouraged and rewarded.

Dr. Bill Weber finished his Ph.D. and he was promoted to assistant professor, tenure track position. Professor Elena Urnysheva is leaving us and the search committee has a really hard time to find a reasonable mathematician who can teach the variety of courses taught by Elena.

The spring meetings of the mathematics faculty from institutions across the state have encouraged participation of undergraduate and graduate students in paper or poster sessions. During the past four years there has also been an undergraduate problems solving contest. This year FHSU had two teams of three each compete in the contest. We graduated 11 students in mathematics and computer science department. Some of them are going to go to graduate schools with a strong desire to get their Ph.D. degrees in mathematics or computer science. Our retention rate is the increasing significantly from an average of 65% to 75% in 2011.

DEPARTMENTAL PERFORMANCE METRICS

A. Department Performance Indicators

Key Performance Indicator	FY2007	FY2008	FY2009	FY2010	FY2011
Freshmen [20 TH DAY FALL SEMESTER, HEADCOUNT]	15	20	20	21	18
Computer Science (BS,110-9999)	10	13	10	12	9
Mathematics (BA,BS,110-1701)	5	7	10	9	9
Transfer Students [20 TH DAY FALL SEMESTER, HEADCOUNT]	14	10	12	13	13
Computer Science (BS,110-9999)	9	4	8	6	4

Key Performance Indicator	FY2007	FY2008	FY2009	FY2010	FY2011
Mathematics (BA,BS,110-1701)	5	6	4	7	9
Undergraduate (first majors/second majors) [20 TH DAY FALL SEMESTER, HEADCOUNT OF FIRST MAJORS, HEADCOUNT OF SECOND MAJORS]	88/8	90/6	92/1	98/4	99/2
Computer Science (BS,110-9999)	39/3	40/1	46/0	50/1	46/0
Mathematics (BA,BS,110-1701)	49/5	50/5	46/1	48/3	53/2
MLS Majors [20 TH DAY FALL SEMESTER, HEADCOUNT OF ADVISEES WITH 120-4901]	1	2	2	1	1
Major Retention [20 TH DAY FALL SEMESTER, PERCENT OF MAJORS RETURNING]	67.08%	66.27%	65.47%	59.55%	75.53%
Computer Science (BS,110-9999)	60.61%	58.97%	66.67%	64.44%	75.00%
Mathematics (BA,BS,110-1701)	71.74%	72.34%	64.44%	54.54%	76.08%
Undergraduate Student Credit Hours [TOTAL UNDERGRAD SCH]	6434	6757	7076	8649	8802
Graduate Student Credit Hours [TOTAL GRAD SCH]	158	148	116	59	59
Tenured or Tenure-track Faculty (Headcount) [FTE OCCUPIED FROM POSITION CONTROL]	6	6	7	7	6
Non Tenure-Track Faculty (Headcount) [FTE OCCUPIED FROM POSITION CONTROL]	4	5	4	5	6
Other Faculty (Headcount/Sections Taught) [OTHER FACULTY AT 4 SECTIONS = 1 FTE FORMULA; INCLUDE NUMBER OF FTE AND SECTIONS TAUGHT]	2/8	3/9	3/9	5/20	5/14
Undergraduate Degrees [UNDERGRAD DEGREES AWARDED]	8	15	13	7	11
Computer Science (BS,110-9999)	3	4	2	2	5
Mathematics (BA,BS,110-1701)	5	11	11	5	6
Briefly note 2-3 improvements over the last year prompted from the above enrollment indicators. 1) Higher number of undergraduate majors. 2) Higher retention rate. 3) Higher number of credit hours generated by the department.					
Number of books, book chapters, and refereed articles published [TOTAL NUMBER PUBLISHED]	12	6	6	4	7
Percent of faculty publishing refereed books, chapters, or articles [PERCENT OF FACULTY PUBLISHING FOR FY2011 (FACULTY PUBLISHING/TOTAL FACULTY)]	60%	60%	30%	40%	40%
Number of non-refereed articles and presentations [TOTAL NUMBER COMPLETED]	55	52	54	57	55

Key Performance Indicator	FY2007	FY2008	FY2009	FY2010	FY2011
Percent of faculty publishing non-refereed articles or presentations [PERCENT OF FACULTY COMPLETING (FACULTY PUBLISHING/TOTAL FACULTY)]	100%	100%	100%	100%	100%
Number of scholarly performances and other creative activities [TOTAL NUMBER OF CREATIVE PERFORMANCES]	8	16	18	20	22
Percent of faculty in scholarly performances or other creative activities [PERCENT OF FACULTY IN CREATIVE SCHOLARSHIP (FACULTY PERFORMING CREATIVE ACTIVITY/ TOTAL FACULTY)]	100%	100%	100%	100%	100%
Total number of external grant applications submitted/percent of faculty submitting [TOTAL NUMBER OF EXTERNAL GRANT APPLICATIONS/PERCENT FUNDED]	40%	30%	10%	10%	20%
Total number of funded external grants/percent of faculty funded [DOLLAR AMOUNT OF EXTERNAL GRANT APPLICATIONS, PERCENT OF FACULTY FUNDED]	2/50%	2/67%	1/10%	1/10%	1/10%
Briefly note 2-3 improvements over the last year prompted from the above scholarly/creative activities indicators. <ol style="list-style-type: none"> 1) Number of scholarly performances increased. 2) Number of published articles increased. 					
[NOTE: Each department MUST report at least two direct measures of student learning outcomes and two indirect measures. Examples of direct measures include: first-time pass rate or average scores on standard exit exam, number of students successfully completing reviewed portfolios. Indirect measures would include student satisfaction, alumni and employer data, or any other perception based data.]					
Direct Outcome 1 Monitor the correlation coefficient between scores on posttest and grades in college algebra	.754 spring	.743 spring	.718 spring	.741 spring	.783 spring
Direct Outcome 2 Monitor the percentage of (A-B-C-D)students obtaining 70% or better on the final exam in college algebra	48 spring	63 spring	58 spring	56 spring	52 Spring
Indirect Indicator 1 Oral and written exit interview of students in computer science .					24 questions were asked and data was collected. Comments were mostly on the need

Key Performance Indicator	FY2007	FY2008	FY2009	FY2010	FY2011
					for updating the Computers in RH206 and getting new software.
Indirect Indicator 2 Quality of students research papers and their seminar presentations				3.4/4	3.65/4 Students do research and present their work as a seminar project under the supervision of a faculty.
Dept senior students' Level of Academic Challenge [FHSU LAC SCORE, DEPT LAC SCORE]	54.15 55.50	53.87 52.40	54.65 50.11	55.9 48.72	56.4 48.56
Dept senior students' Active and Collaborative Learning [FHSU ACL SCORE, DEPT ACL SCORE]	44.61 42.73	45.85 53.81	45.34 44.76	46.1 53.97	43.9 42.86
Dept senior students' Student-Faculty Interaction [FHSU SFI SCORE, DEPT SFI SCORE, N, %]	44.19 38.89	44.73 43.33	45.34 53.33	41.0 46.30	38.5 43.65
Dept senior students' Enriching Educational Experiences [FHSU EEE SCORE, DEPT EEE SCORE, N, %]	33.44 29.37	34.09 32.54	34.72 38.49	34.0 37.77	32.9 27.79
Dept senior students' Supportive Campus Environment [FHSU SCE SCORE, DEPT SCE SCORE, N, %]	59.06 48.33	57.30 59.44	59.57 56.11	60.3 61.46	60.8 52.78
Number of NSSE participants [NUMBER OF DEPT SR STUDENTS, PERCENT]	6 27%	10 43.5%	5 21.7%	9 47.7%	7 28.0%
<p>Briefly note 2-3 improvements over the last year prompted from the above student learning/engagement indicators.</p> <ol style="list-style-type: none"> 1) Department senior students' Supportive Campus Environment has increased. 2) Dept senior students' Level of Academic Challenge has increased. 					
[NOTE: Departments may pick up to three key performance indicators they currently measure but are not captured above. These measures could be used to track departmental results on specific yearly goals. Examples might include: number of SRPs attended, number of new freshmen contacted. (These will vary by department					

Key Performance Indicator	FY2007	FY2008	FY2009	FY2010	FY2011
based on goals.])					

C. Department Quality Initiatives and Results

FY2011 Quality Initiatives	Results
Improve the quality of our seminars by developing a technical writing course as pre-seminar.	The seminar committee met and revised the structure of the seminar requirements. That includes participation in technical writhing sessions. The new structure will be implemented fall of 2011.
Faculty will be asked to present and publish more focused articles.	Not much progress in this quality initiative was made. Faculty likes to approach their own areas of interest instead of following a guideline.

FY2012 Quality Initiatives	Responsible Party, Resources, and Plan
We need to hire a Ph.D. in Computer Science.	The search committee needs to start very soon to find a competent Computer Science faculty to enhance the quality of instruction and research in the department.
We need to hire a Ph.D. in Mathematics with statistical background.	The search committee needs to start very early to find a competent Mathematics faculty to enhance the quality of instruction and research in the department.

D. Institutional Quality Results

FY2011 University Initiatives	Department Activities/Results
Increase access and retention for Hispanic students	We respect all ethnic groups and we do not discriminate against anyone. If you like mathematics and computer science we are at your service.
Increase the quantity and quality of K-12 teachers educated	With our excellent faculty members we teach future teachers to be innovative, informed, open-minded and hard working.
Improve undergraduate students' foundational skills	With constant monitoring and advising our students, they have no way to go but to improve their skills. We encourage technology and critical thinking as well as reading mathematical journals and writing papers and solving problems.
Enhance physical wellness of students, faculty, and staff	Fortunately most our faculty are young and healthy. Some old ones (speaking of myself) need more encouragement to exercise and stay in shape.
Internationalize the campus and curriculum	Fortunately our department is probably the most diverse department on campus. We have faculty from five different countries and students from all over the world. What else we can ask for?

II. FY2011 STRATEGY AND OPPORTUNITIES FOR IMPROVEMENT

A. Departmental Reflection of Strengths, Needs, Opportunities, and Threats

Current Strengths	Current Needs
Excellent teachers as evidenced by ratings on Student evaluations. We have competent and energetic faculty. There is so much potential to do quality research and teaching if the reward system points toward that direction.	We need a new faculty with Ph.D. in Computer Science. We need more faculty members and we need to pay our current faculty more, to keep them away from overload teaching. Research should be more emphasized and rewarded.
Future Opportunities	Future Threats
More on-line computer science courses. A new faculty member in computer science has an interest in developing said courses. Expand offerings for pre/in-service middle school teachers.	Lack of competing salaries for secondary mathematics teachers makes future enrollment increases unlikely. KSDE has recently instituted a policy where by students can become endorsed to teach mathematics by completing just 50% of our approved program. Hence, students have little incentive to have declared mathematics major.

B. Opportunities for Improvement

Opportunity for Improvement	Resources Required	Expected Result and Completion Date
The computers in RH 206 are very old and need to be upgraded.	The restructure of RH 206 may enhance the quality of instruction in that room.	An action plan will be written to reflect the need. If resources are provided the new computers will be installed.
With the increasing demand for computer science graduates, we need to enhance our quality of instruction in that area.	We need to hire a new faculty with a Ph.D. in computer science.	An action plan will be designed to ask for more money to hire a competent computer science faculty.

SUPPORTING MATERIALS

A. Department Degree Program Affinity Diagram(s)

**Department of Mathematics and Computer Science
Affinity Diagram for Computer Science Program**

Characteristics of Computer Science Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes
<p>Knowledgeable They use theories, terminology, and skills to model real world situations.</p> <p>Problem Solvers They model real world situations.</p> <p>Analytical/Precise They use higher level reasoning skills to solve problems.</p> <p>Creative/Flexible They analyze problems from a fresh perspective.</p> <p>Strategy Minded They see the big picture including the political, social, and economic context of which they are a part.</p> <p>Innovative/Adaptive They are knowledgeable about new technologies and how to deploy them.</p> <p>Dedicated/Patient They continue to work on problems that do not meet with immediate success.</p> <p>Cooperative They are team players and see the end-user's point of view.</p> <p>Competitive/Desire</p>	<p>Goal 1 To model real world situations.</p> <p>Objective #1 The learner will demonstrate the ability to define a problem clearly.</p> <p>Goal 2 To analyze software problems resulting from a real world situation.</p> <p>Objective #1 The learner will demonstrate the ability to determine a problem's tractability.</p> <p>Objective #2 The learner will demonstrate the ability to determine when consultation with outside experts is appropriate.</p> <p>Objective #3 The learner will demonstrate the ability to evaluate and choose an appropriate solution strategy.</p>	<p><u>A. Program Core Curriculum</u> <i>Develops Knowledge</i> CSCI 261 Computer Science I (C) CSCI 345 Logical Foundations of Computing CSCI 361 Computer Science II (C++) CSCI 363 Computer Operating Systems CSCI 365 Systems Architecture CSCI 465 Programming Languages CSCI 562 Data Structures and Algorithm Design</p> <p>Develops Skills CSCI 369 Java Programming CSCI 466 Software Engineering I CSCI 564 Networks and Data Communication CSCI 566 Software Engineering II <i>Develops Perspective</i> CSCI 160 Orientation to Computer Science CSCI 322 Interactive Systems Design CSCI 567 Internship</p> <p><u>B. Cognate Focus Tracks</u> (Select one Track and take up to 23 hrs.) Track 1: Business Emphasis ACCT 203 Financial Accounting ACCT 204 Managerial Accounting CIS 304</p>	<p>Program</p> <ul style="list-style-type: none"> • Five year program review as developed by Fort Hays' College of Arts & Sciences • Survey student and employer satisfaction with program and graduates. The results are used to improve the program • Collect outcome information relating to program goals • Entrance and exit testing of students <p>Students</p> <ul style="list-style-type: none"> • The student will prepare a portfolio illustrating the range of knowledge, skills and perspective possessed. • Written examinations and 		

Characteristics of Computer Science Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes
<p>to Improve They are aware of marketplace dynamics and organizational realities; they stay ahead of change by initiating change.</p> <p>Communicative They express themselves effectively in oral and written discourse.</p>	<p>Objective #4 The learner will demonstrate the ability to study, specify, design, implement, test, modify, document, and maintain that solution.</p> <p>Goal 3 To be knowledgeable about new technologies and how to deploy them.</p> <p>Objective #1 The learner will demonstrate the ability to evaluate alternatives and perform risk analysis on that design.</p> <p>Objective #2 The learner will demonstrate the ability to integrate alternative technologies in that solution.</p> <p>Goal 4 To possess a computer</p>	<p>Management Information Systems ECFI 305 Managérial Finance MGT 301 Management Principles MKT 301 Marketing Principles MGT 408 Production Management</p> <p>Track 2: Mathematics Minor MATH 235 Analytical Geometry and Calculus II MATH 236 Analytical Geometry and Calculus III MATH 240 Linear Algebra MATH 350 Introduction to Mathematical Statistics MATH 545 Discrete Structures or MATH 354 Differential Equations MATH 665 Numerical Analysis</p> <p>Track 3: Geographic Applications Emphasis GSCI 000 Cartography: Theory and Applications GSCI 240 Introduction to Geographic Information Systems</p> <p>GSCI 000 Advanced Geographic Information Systems GSCI 461 Computer Applications GSCI 474 Aerial Photo GSCI 000 Remote Sensing</p> <p>Track 4: Physics Emphasis</p>	<p>completion of laboratory projects in all required courses</p> <ul style="list-style-type: none"> • Capstone course: Software Engineering II and Internship to satisfy learning-in-context • Formal and informal student needs assessment • Transcript analysis 		

Characteristics of Computer Science Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes
	<p>science maturity that enables them to read, analyze, and communicate logically and effectively in a professional situation.</p> <p>Objective #1 The learner will demonstrate the ability to communicate the solution of a problem to colleagues, professionals in their field and to the general public.</p> <p>Objective #2 The learner will demonstrate the ability to be able to think logically and make appropriate decisions based on critical thinking.</p> <p>Goal 5 To see the political, social, and economic context of a problem.</p> <p>Objective #1 The learner will demonstrate the</p>	<p>PHYS 211 Physics for Scientists and Engineers I PHYS 211L Physics for Scientists and</p> <p>Engineers I Lab MATH 235 Analytical Geometry and Calculus II PHYS 212 Physics for Scientists and Engineers II PHYS 212L Physics for Scientists and</p> <p>Engineers II Lab PHYS 213 Computational Physics PHYS 521 Mechanics</p> <p>Track 5: Technology Studies Emphasis TECS 110 Communication Systems TECS 130 Production Systems TECS 200 Engineering Graphics TECS 318 Computer Aided Drafting TECS 430 Computer Aided Manufacturing TECS 560 Training and Instructional Systems TECS 580 Industrial Management TECS 590 Occupational Safety, Health and Liability</p>			

Characteristics of Computer Science Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes
	<p>ability to be an effective problem solver, using optimization techniques to obtain a best solution.</p> <p>Objective #2 The learner will demonstrate the ability to be capable of reading undergraduate software engineering, of comprehending the concepts, and of communicating the ideas to others using available technology.</p>				

Department of **Mathematics and Computer Science**
Affinity Diagram for **Mathematics Program**

Characteristics of Mathematics Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes

Characteristics of Mathematics Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes
<p>Knowledgeable They apply qualitative and quantitative methods to solve problems. They use mathematical theories, terminology, and skills to model real world situations. They are familiar with a broad range of areas within mathematics, the terminology, major theorems, and methods of argument. They apply a broad knowledge to obtain new theoretical results or practical applications.</p> <p>Logical They express mathematical thoughts in a way that can be clearly understood by others. They carefully consider assertions before accepting or rejecting them.</p> <p>They have the ability to construct and follow a step-by-step logical argument.</p>	<p>Goal 1 To model real world situations. Objective #1 To define a problem clearly.</p> <p>Goal 2 To apply appropriate techniques to analyze mathematical problems resulting from a modeled real world situation. Objective #1 To evaluate and choose an appropriate solution strategy. Objective #2 To be an effective problem solver using optimization techniques to obtain the best possible solution to a problem.</p> <p>Goal 3 To follow and exhibit a logical mathematical argument. Objective #1 To communicate a solution to colleagues, professionals in the field, and the general public.</p>	<p>Program Core Curriculum Develops Knowledge/Skills MATH 234,235,236 Analytical Geometry and Calculus I, II, and III MATH 240 Linear Algebra MATH 250 Elements of Statistics CSCI 261 Computer Science I MATH 350 Introduction to Mathematical Statistics MATH 354 Differential Equations MATH 510 Higher Algebra Or MATH 546 Discrete Structures MATH 531 Advanced Calculus MATH 665 Numerical Analysis</p> <p>Develops Perspective MATH 575 Seminar</p>	<p>Program Employment Survey: Yearly collection of data on types of employment of graduates to determine whether graduates obtain employment matching the student's option. Results are used to advise students in making career choices.</p> <p>Alumni Survey: Survey graduates five years after graduation to determine their perception of their mathematics education in preparing them for careers and further education. Results are used to evaluate the timeliness and appropriateness of the curricula.</p> <p>Model Programs: Collect from American Mathematical Society, Mathematics Association of America, National Council of Teachers of Mathematics, Association of Computing Machinery examples of suggested curricula. Results</p>		

Characteristics of Mathematics Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes
			<p>are used to compare the major curricula against national standards.</p> <p>Individual Achievement Capstone Course: All students enroll in Seminar in Mathematics in which the individual student selects a topic, researches it, writes a paper, and gives an oral presentation to the seminar group. All faculties read the paper and attend the talk. The student's grade is then assigned by departmental consensus. Success requires the ability to work independently, synthesize and extend mathematical knowledge and the ability to impart that knowledge to others. Faculty assesses the appropriateness of the individual student's major courses.</p> <p>Portfolio: All students will prepare a portfolio illustrating the range of knowledge, skills</p>		

Characteristics of Mathematics Program	Expected Learning Outcomes	Curriculum	Assessment Approach and Methods	Results	Curricular and/or Pedagogical Changes
			and perspective possessed.		

Department Staffing Plan

College of Arts and Sciences
Department Staffing Plan and Assignments (Projected)
Department of Mathematics and Computer Science
Date: 10/21/2010

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Current Department Needs	Faculty Member	Current Faculty Expertise	Birthdate	Assigned Instructional FTE's	Rank Current Date	Degree Completed	Track	Current Salary In Line
Analysis Elementary Statistics Statistics Applied	?	?	?	1.0	Assist. Prof.	Ph.D.	Tenure Track	41000
Analysis Computer Science Applied	L. Anyanwu	Information Education	09/26/48	1.0	Assoc. Prof. 2008	Ed.D. 1988	Tenure Track	45500
Upper Algebra Teacher Education Liberal Arts Elementary Statistics	W. Weber	Math Education Elementary Statistics	07/10/1975	1.0	Instructor 2004	Ph.D. 2010	Tmp.	41870
Computer Literacy Teacher Education Liberal Arts Elementary Statistics	L. Young	Education Statistics	07/06/1973	1.0	Assist. Prof. 2008	Ph. D. 2007	Tenured	44894
Analysis Computer Science Applied	H. Zeng	Applied Computer Science	07/16/1967	1.0	Assoc. Prof. 2008	Ph.D.2001	Tenured	56543
Upper Algebra Analysis Geometry Elementary Statistics Statistics Applied	M. Riazi-Kermani	Analysis Differential Equations Numerical Methods Higher Algebra	11/18/1944	1.0	Professor 1998	Ph.D. 1984	Tenured	96843
Computer Literacy Teacher Education Liberal Arts Elementary Statistics	M.K. Schippers	General	11/12/1956	.5	Instructor 1998	M.S.	Tmp.	26429
Computer Literacy Teacher Education Liberal Arts Elementary Statistics	K. Dreiling	Education Geometry	12/24/1960	1.0	Assist. Prof. 2008	Ph.D. 2007	Tenured	47666
Analysis Teacher Education Elementary Statistics	J. Sadler	Education Higher Algebra	09/28/1963	1.0	Instructor 2000	M.S./ABD	Tmp	46111
Liberal Arts	M. Zeng	Education	10/16/1965	1.0	Instructor 2001	M.S. 2001	Tmp.	36834
Algebra	?	Education		1.0	Instructor	M.S. ?	Tmp	38000

Diversity Ratio = ____

B. Bibliography of Departmental Scholarly Activity

- 1) Triangle Constructions in Taxicab Geometry, accepted for publication in *Mathematics Teacher*,
- 2) Best Teaching Practices at the College Level, *Kansas Association of Teachers of Mathematics Bulletin*,

- 3) Western Kansas Math Academy, presentation at the 5th Annual Research at Predominantly Undergraduate Institutions (PUIs) Conference, Hays, KS, Newcomer Session,
- 4) Presentation at Kansas Association of Teachers of Mathematics Annual Conference, Wichita, KS,
- 5) Drawing a Straight Line, presentation at Kansas Association of Teachers of Mathematics Annual Conference, Wichita, KS,
- 6) Drawing a Straight Line, seminar presentation,
- 7) NFL Win Probability, seminar presentation,
- 8) Calculus Readiness Program, KAMS Workshop: How to Ask for Help, Reviewed Mathematics Education Programs for Kansas State Department of Education,
- 9) Completed Ph.D. in Curriculum & Instruction at KSU,
- 10) Attended KMAA Conference in Topeka,
- 11) Presented "On-line homework at FHSU" at KATM Conference in Wichita,
- 12) Presented 2 seminars to the MACS faculty and students,
- 13) Co-developed "Calculus Readiness" course for incoming Pre-Calculus & Calculus students, Begin writing grants (Write at least one), Prepared and presented at Middle School Girls' Math and Science Camp,
- 14) Submitted Grant Proposal for KSDE MSP Grant,
- 15) Submitted article to The Advocate, Submitted article to Mathematics Teaching in the Middle School,
- 16) Submitted article to Mathematics Teacher,
- 17) Received Kansas Distinguished Dissertation Award,
- 18) Presented at KATM, "Anonymity Leakage Reduction in Network Latency", **International Journal of Multimedia and Ubiquitous Engineering (IJMUE)**, Vol. 5, No. 1, pp.19-28, January, 2010.
- 19) "Dynamically Self-adapting RNN-based Intrusion Detection System", accepted for publication in the **International Journal of Multimedia & Ubiquitous Engineering (IJMUE)**,
- 20) presentation with a topic of "High Education Entrance Exam in China"
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