GRADUATE
NEW/REVISED/DELETED GRADUATE PROGRAMS COVER SHEET
(Degree Programs, Sequences, Graduate-Level Certificates)
Graduate Curriculum Committee
2008-09

Deadlines for receipt by Graduate Curriculum Committee:
Revised Degree Program, Sequence, Graduate Certificates: September 29, 2008, for inclusion in 2009-10 catalog
New Sequence, New Graduate Certificate: September 12, 2008, for inclusion in 2009-10 catalog
New Degree Program: February 9, 2009, for inclusion in 2010-11 Graduate Catalog.

DEPARTMENT/SCHOOL School of Information Technology   DATE 04/18/2008

TITLE OF DEGREE, SEQUENCE, OR CERTIFICATE Enterprise Computing Systems

Proposed Action: (Refer to Part I, Section C of *GCC Proposal Guidelines and Procedures*.)

X____ New* (Check one):
    _____ Degree Program** (goes beyond Graduate Curriculum Committee)
    _X__ Sequence (goes beyond Graduate Curriculum Committee)
    _____ Post-Master's Graduate Certificate (goes beyond Graduate Curriculum Committee)
    _____ Post-Baccalaureate Graduate Certificate (goes beyond Graduate Curriculum Committee)
    _____ Graduate Certificate

_____ Change in requirements for: (Check one.)
    _____ Degree Program   _____ Sequence   _____ Certificate

_____ Other program revisions

_____ Deletion of: (Check one.)
    _____ Degree Program (goes beyond Graduate Curriculum Committee)
    _____ Sequence (goes beyond Graduate Curriculum Committee)
    _____ Post-Master's Graduate Certificate (goes beyond Graduate Curriculum Committee)
    _____ Post-Baccalaureate Graduate Certificate (goes beyond Graduate Curriculum Committee)
    _____ Graduate Certificate

*Attach approved *Request for New Program Approval: Reporting of Financial Implications* form (available at www.academicsenate.ilstu.edu/documents.html).
**Obtain the New Program Request (NEPR) format from the Office of the Provost.

Summary of proposed action. For all proposals, provide current title and current catalog copy. Provide new title and new catalog copy for new programs, and for revised programs if catalog copy/title is altered. For revised programs, provide a summary of the changes. (Refer to New/Revised/Deleted Programs checklist in *GCC Guidelines and Procedures*.)

Routing Procedures:

1. _____
   Dept./School Curriculum Committee Chair   Date Approved

4. _____
   College Dean   Date Approved

2. _____
   Department Chair/School Director   Date Approved

5. _____
   Teacher Education Council Chair   Date Approved
   (28 copies to Dean of College of Education)

3. _____
   College Curriculum Committee Chair   Date Approved

6. _____
   Graduate School   Date Approved

Submit the original and two copies of the proposal to the Graduate School (nine copies if part of a degree program or sequence proposal).

1. **Institution:**   Illinois State University
2. **Responsible School:**   School of Information Technology
3. **Program Title:**   Enterprise Computing Systems Sequence in the Masters Degree in Information Systems
4. **Proposed Date of Initiation:**   Fall 2009

5. Summary of the Proposed Action:

The Masters Degree will have five sequences – Systems Development, Telecommunications Management, Information Assurance and Security, Internet Application Development, and Enterprise Computing Systems (15.1212), the new sequence.

In the Enterprise Computing Systems sequence:

- 2 new courses will be added
- Changes to be implemented with first catalog after approval, expected to be the 2010-2011 catalog.

New courses
- ITK 334.05 System Programming and Administration in Enterprise Computing Systems
- ITK 464 Large-scale Enterprise Computing Systems Integration Performance Evaluation

6. Description of Proposed Program Change:

Description of the Proposed New Sequences

Enterprise Computing Systems (15.1212)

The Enterprise Computing Systems sequence is designed to provide students with both theoretical knowledge and practical experience in the area of mainframe based integrated large-scale enterprise systems. The sequence provides an in-depth study of hardware and software infrastructure, middleware implementation, system virtualization, and web server and service integration of enterprise computing systems.

Revision of Catalog Copy

Master's Degree in Information Systems
School of Information Technology
Illinois State University

Catalog Copy (changes in bold)

Current	Proposed
Programs Offered	Programs Offered
The School offers four sequence options to complete the Master of Science degree. The sequences include Systems Development, Telecommunications Management, Information Assurance and Security, and Internet Application Development. Within each sequence the student may choose to complete a 36 semester hour thesis option, a 39 semester hour project option, or a 39 semester hour course option.	**The School offers five sequence options to complete the Master of Science degree. The sequences are Systems Development, Telecommunications Management, Information Assurance and Security, Internet Application Development, and Enterprise Computing Systems. Within each sequence the student may choose to complete a 36 semester hour thesis option, a 39 semester hour project option, or a 39 semester hour course option.**

Curriculum Requirements
 	
This degree assumes an undergraduate knowledge base in computing, which students with undergraduate degrees in computing will normally have acquired. Students lacking sufficient background may be admitted but will need to complete fundamental courses before enrolling in the Information Systems core courses. These students may wish to consider applying for fall admission due to the limited offering of foundation courses during the spring semester.
 	
Students lacking sufficient background should expect to complete some or all of the following courses with a grade of "B" or better:
 	
- ITK 275 Java as a Second Language
    OR
ITK 177 Problem Solving for Information Technology *AND* ITK 178 Computer Application Programming
 	
- ITK 407 Telecommunications Fundamentals
    OR
ITK 254 Hardware and Software Concepts *AND* ITK 375.05 Data Communications
 	
- ITK 408 Information Systems Fundamentals
    OR
ITK 261 Systems Development I *AND* ITK 378.05 Database Processing
	(No change)

The ITK Graduate Advisor will determine specific requirements.	(No change)

The ITK Graduate Advisor will determine specific requirements.

To provide a common background, each student is required to complete the following Core courses:

IS Technology (12 hours):
    ITK 432 Systems Analysis and Design ITK 478 Database Management
    ITK 350.05 Fundamentals of Information Assurance and Security
    ITK 377.05 Practical Telecommunications Networking

IS Management (6 hours):
    ITK 463 Information Technology Project Management
    ITK 496 Information Technology Strategy and Policy

Additional Course (3 hours):
    ITK 497 Research Methodology

All students must take ITK 497 during their first year in the program.

There are three options available within this degree: the Thesis Option, the Project Option, and the Course Option.

The Thesis Option requires a minimum of 36 semester hours as follows:

Core Area courses	21 hours
ITK 499 (Master's Thesis)	6 hours

Choose one of the following sequences:	9 hours

Systems Development
467
2 of: 341.05, 460, 468, 485, 495
OR
Telecommunications Management
479, 477
1 of 371.05, 487, 495
OR
Information Assurance and Security
351.05
2 of: 450, 451, 486, 495
OR
Internet Application Development
353.05
2 of: 354.05, 467, 442, 484, 495

(No change)

	OR **Enterprise Computing Systems** **330.05, 334.05, 464**
Total 36 hours	
Students in the thesis option must complete a minimum of 18 hours of 400-level course work, not counting thesis hours.	
The Project Option requires a minimum of 39 semester hours as follows: Core Area courses 21 hours ITK 494 (Master's Project) 6 hours	**(No change)**
Choose one of the following sequences: 12 hours	
Systems Development 467 3 of: 341.05, 460, 468, 485, 495 OR Telecommunications Management 479 3 of: 371.05, 451, 477, 487, 495 OR Information Assurance and Security 351.05 3 of: 450, 451, 486, 495 OR Internet Application Development 353.05 3 of: 354.05, 467, 442, 484, 495	
	OR **Enterprise Computing Systems** **330.05, 334.05, 464** **1 of: 331.05, 332.05**
Total 39 hours	
Students in the project option must complete a minimum of 21 hours of 400-level course work, not including project hours.	
The Course Option requires a minimum of 39 semester hours as follows: Core Area courses 21 hours Technical Communication: TEC 349, ENG 349, or MQM 416 3 hours	**(No change)**
Choose one of the following sequences: 15 hours	

<u>Systems Development</u> 467, 495 3 of: 341.05, 460, 468, 485 OR <u>Telecommunications Management</u> 479, 495 3 of: 371.05, 451, 477, 487 OR <u>Information Assurance and Security</u> 351.05, 495 3 of: 450, 451, 477, 486 OR <u>Internet Application Development</u> 353.05, 495 3 of: 354.05, 467, 442, 484	(No change) **OR** **<u>Enterprise Computing Systems</u>** **330.05, 334.05, 464, 495** **1 of: 331.05, 332.05**
Total 39 hours	
Students in the course option must complete a minimum of 21 hours of 400-level course work.	

7. Rationale for Proposal:

Over the years the School of Information Technology has worked to improve the quality and rigor of the masters program by offering new sequences in various IT fields. The current proposal follows the changes in the area of enterprise computing. The implementation of the new sequence will open up new research areas and job opportunities for our graduate students in hardware and software infrastructure, middleware, security, multi-platform systems integration, performance evaluation, etc.

IT business trends indicate that the current mainframe system programmers and system administrators are reaching retirement age and the demand for IT personnel to replace these employees will be high. In addition, a study of global computing markets shows that mainframe use continues to rise. From both economic and business integration points of view, the number of integrated large-scale enterprise computing systems will continue to grow in both major corporations and in small to medium businesses.

The proposed establishment of the sequence in each option (Project, Thesis, and Course) of the degree program is a result of student requests and the faculty's desire to provide a more focused degree plan in enterprise computing. The selection of the sequence is a result of the requests from prospective and current students in the program and suggestions from the business advisory boards and industries. The school has had many meetings with both local and regional companies, e.g., State Farm, Caterpillar, John Deere, Anheuser-Busch, Allstate, Charles Schwab, and others. All of these companies have encouraged ITK to offer a program focusing on enterprise computing, expanding the palette of research and education at ITK. Advisory board members have indicated that they will support the program and hire our graduates. IBM has also offered support in terms of educational and research opportunities for faculty, equipment, and support in student recruiting and placement. The establishment of an Enterprise Computing Systems sequence in the MSIS program will place ISU in a leading edge position in both education and research in this field.

8. Expected Impact of Proposal on Existing Campus Programs:

No impact on existing campus programs.

No impact on existing programs within ITK is expected from the proposal.

There are also no additional funding needs or staffing anticipated as a result of this revision to the master's degree. Sufficient seats in graduate ITK classes are expected to be available to accommodate the proposed change.

9. Library resources:

Since this sequence is within the scope of the existing ITK MSIS, no additional library material should be required.

10. Curricular Change Including New Courses:

The Enterprise Computing Systems sequence will utilize a major portion of the courses offered by three existing ITK programs. To achieve the objective of learning about large-scale multi-platform enterprise computing systems, two new courses are added to the sequence. They are:

  a. ITK 334.05 – System Programming and Administration in Enterprise Computing Systems
  b. ITK 464 – Large-scale Enterprise Computing Systems Integration and Performance Evaluation

Students are required to complete the courses above, ITK 334.05 and 464, before graduation. The remaining major requirement courses are currently offered by ITK on a regular basis.

11. Anticipated Staffing Arrangements:

No new staff is required to implement the changes.

ITK 330.05 course is already being offered once each fall, ITK 334.05 will be offered once each spring after the program starts. ITK 464 will be offered once each year during the second year of the program, which means one course per semester will be added starting from the second semester. ITK recruited a faculty member for this sequence in fall semester 2007, with no anticipated need for additional faculty in the next four to five years.

12. Anticipated Funding Needs and Source of Funds:

No new funds are needed.

We are using an IBM z890 mainframe system for all the course work. IBM is donating all of the software and some of the hardware as well as equipment installation and upgrade support, so we have no equipment needs. IBM also provides free faculty and staff training through their Academic Initiative program, and offers additional training in specific areas which can be completed on-line. IBM has provided an academic partition (LPAR) on the university's IBM mainframe since 2006, and that will also be used for both education and research in the new sequence.