

GRADUATE COMMITTEE MINUTES

Chair: Dr. Robert Fernekes

Graduate Committee Meeting Date – October 8, 2009

Present: Dr. Deborah Allen, CHHS; Dr. John Dyer, CIT; Dr. Richard Flynn, CLASS; Dr. Delores Liston, COE; Dr. Risa Cohen, COST; Dr. Robert Vogel, JPHCOPH; Mr. Jonathan Harwell, Library; Dr. Jim McMillan, CHHS; Dr. Ardian Greca, CIT; Dr. Bill Yang, COBA; Dr. Lisa Schulz, COE; Dr. Chunshan Zhao, COST; Dr. Simone Charles, JPHCOPH; Dr. Robert Fernekes, Library; Dr. Chris Kadlec (Alternate, CIT); Dr. Charlie Hardy, Dean, JPHCOPH, [Academic Affairs]; Dr. Dick Diebolt, COGS; Mrs. Audie Graham, COGS

Guests: Dr. Amy Heaston, VPAA; Ms. Candace Griffith, VPAA; Dr. Deborah Thomas, COE; Mr. Wayne Smith, Registrar; Mr. Toby Ziglar, Graduate Admissions; Dr. Jim Harris, CIT; Dr. Robert Cook, CIT; Dr. Ron Shiffler, Dean, COBA/CIT; Mr. Ron Stalnaker, ITS; Mr. Eric Floyd, CATS; Mr. Jason Vickers, ITS; Mr. John Tucker, ITS

Absent: Dr. Pat Walker, CLASS; Dr. Donna Fisher, COBA

I. CALL TO ORDER

Dr. Robert Fernekes called the meeting to order on Thursday, October 8, 2009 at 9:02 AM.

II. APPROVAL OF AGENDA

Dr. Jim McMillan made a motion to approve the agenda as written. A second was made by Dr. Richard Flynn. The motion to approve was passed.

III. SHAREPOINT DEMONSTRATION BY ERIC FLOYD

Mr. Eric Floyd, from the Center for Academic Technology Support, began by introducing Mr. Ron Stalnaker, Mr. Jason Vickers and Mr. John Tucker, who were some of the people involved in getting the Graduate Committee SharePoint site active. He continued with a short PowerPoint presentation, and then the SharePoint demonstration.

SharePoint

What is SharePoint?

- Online collaboration tool
- Share:
 - Documents
 - Discussion topics
 - Calendar
 - Task lists

How are we currently using SharePoint?

- Document sharing
 - Agenda
 - Minutes
- Discussion Board

SharePoint Site

<https://sharepoint.georgiasouthern.edu/VPAA/gcd/default.aspx>

Mr. Floyd recommended that the committee members bookmark the site for easier access, and stated that SharePoint is more compatible with Internet Explorer. He reviewed some of the basic functions that can be utilized through SharePoint, and stated that if anyone ever has questions when using the site for them to call (912) 478-0882, or email etc@georgiasouthern.edu.

He also mentioned a link that the committee may want to review, which includes SharePoint video tutorials. http://www.sharepointhosting.com/video_tutorials.html

IV. NEW BUSINESS

A. College of Education

Dr. Deborah Thomas presented the program agenda item for the College of Education.

Course Deletions:

- a) TCED 5236G
- b) TCED 5237G
- c) TCED 5238G
- d) TCED 5239G

JUSTIFICATION:

The B.S.Ed. in Technology Education program has been deleted and removed from the catalogue. These graduate courses are no longer needed.

Revised Programs:

- a) M.Ed. in Teaching and Learning, Concentration One in MGED – *effective 200908*

JUSTIFICATION:

MSED 7535 is no longer a prerequisite for ESED 7131 for candidates completing the M.Ed. in Teaching and Learning: Concentration One, Middle Grades Education who have identified mathematics education as their teaching concentration.

- b) M.Ed. in Teaching and Learning, Concentration Two with an emphasis in Technology Education – *effective 201108*

JUSTIFICATION:

The **Technology Education emphasis area** in the M.Ed. in Teaching and Learning is being removed (effective 201108) as a result of low enrollments. A Transition Plan for current students is attached.

- c) Ed.S. in Teaching and Learning, Technology Education emphasis area – *effective 201108*

JUSTIFICATION:

The M.Ed. in Teaching and Learning: Concentration Two Secondary Education with an emphasis in Technology Education is being deleted along with the graduate courses in Technology Education as a result of low enrollments; therefore, there will not be advanced courses in Technology Education to support the Technology Education emphasis in the Ed.S. in Teaching and Learning (*effective 201108*).

The **Transition Plan for Ed.S. students** currently pursuing the Technology Education emphasis area is attached.

Other Catalog Copy:

- a) Alternative Teacher Certification Programs and Non-Degree Graduate Studies

JUSTIFICATION:

The Catalog sections for "Alternative Teacher Certification Programs" and "Non-Degree Graduate Studies" need to reflect approved changes that have been made in the M.A.T., the School Psychology program, and the Educational Leadership programs.

MOTION: Dr. Lisa Schulz made a motion to approve the submissions from the College of Education. A second was made by Dr. Flynn. The motion to approve the Course Deletions, Revised Programs, and Catalog section was approved.

B. College of Liberal Arts and Social Sciences

Department of Writing and Linguistics

Course Revisions:

LING - various courses - Prerequisite Change Involving English 1102 for Graduate Courses

JUSTIFICATION:

The current catalog erroneously lists English 1102, an undergraduate course, as the prerequisite. The change will reflect the graduate nature of the courses listed. See attachment.

WGST 5633G - Prerequisite Change Involving English 1102 for Graduate Courses

JUSTIFICATION:

The current catalog erroneously lists English 1102, an undergraduate course, as the prerequisite. The change will reflect the graduate nature of the courses listed.

WRIT - various courses - Prerequisite Change Involving English 1102 for Graduate Courses

JUSTIFICATION:

The current catalog erroneously lists English 1102, an undergraduate course, as the prerequisite. The change will reflect the graduate nature of the courses listed. See attachment.

WRIT 7260 – Writing Project

JUSTIFICATION:

Revisions in this form reflect minor changes in the face-to-face contact hours and course description that allows teachers to participate more than once for professional development hours. The change in description reflects that admission to the institute is by invitation only.

There was no one present from the Department of Writing and Linguistics to discuss the course revisions submitted by the College of Liberal Arts and Social Sciences.

MOTION: Dr. McMillan made a motion to table the Course Revisions submitted by the Department of Writing and Linguistics. A second was made by Dr. Flynn. The motion to table the Course Revisions was passed.

C. College of Health and Human Sciences

Dr. Deborah Allen presented the program agenda item for the College of Health and Human Sciences.

School of Nursing

Revision in admission requirements for Doctor of Nursing Practice (DNP) program.

JUSTIFICATION:

Change in admission requirements for Doctor of Nursing Practice due revised national guidelines.

Dr. McMillan asked for clarification, based on the revised admission requirements, of how the GRE scores will be evaluated for DNP applicants. Dr. Allen explained that there will not be a minimum test requirement, and that the School of Nursing has a credential grid that they use when reviewing applicants to see if they meet program requirements.

MOTION: Dr. McMillan made a motion to approve the revised admission requirements for the DNP program that was submitted by the College of Health and Human Sciences. A second was made by Dr. Ardian Greca. The motion to approve the revised admission requirements was approved.

V. A. OLD BUSINESS – Mr. Jonathan Harwell made a motion to un-table the Masters of Computer Science program proposal that was tabled during the September 10th Graduate Committee Meeting. The revised program proposal and course submissions is below:

<p>Georgia Southern University New Course Form</p>

Subject: CSCI

Number: 7130

Answers to all the following questions must be submitted. Limit total responses to two pages.

- 1. Need for the Course: Identify the need for the course; for example, required for the major, for certification, elective, etc.**
Required core course for the proposed MSCS
- 2. Similarity with existing course: Include a clear statement indicating that a thorough examination has been made of other departments/units/colleges and discuss to what extent this course duplicates or overlaps existing course(s). If course**

duplication occurs, provide a justification for a similar course and a description of dialogues that have occurred with the department(s) where the duplication exists.

No duplication exists

- 3. Accreditation/Licensure approval: Does this course meet the desired requirements for the appropriate accreditation bodies? Has the proposing unit secured the appropriate approval of all on-campus governing bodies {(e.g., Teacher Education Committee (TEC)}?**

NA

- 4. Course Goals/Objectives: Clearly outline the objectives of the proposed course. Describe the student learning outcomes that are expected from this course.**

Course Objectives:

1. Define terms associated with the different artificial intelligence application areas.
2. Discuss the theory underlying search algorithms, logic, rule-based systems and machine learning.
3. Construct applications using an appropriate collection of AI software components.
4. Compare and contrast the approaches to the construction of knowledge bases and expert systems.
5. Demonstrate the application and practice of robotics, natural language processing, computer vision and text-to-speech to real-world applications

Learning Outcomes:

1. Understand and ability to define key terms in artificial intelligence.
2. Understand and ability to apply a variety of search algorithms
3. Understand and the ability to apply logic and rule based systems
4. Understand the main concepts involved in machine learning
5. Ability to design and implement software solutions using appropriate AI software components
6. Ability to compare and contrast the approaches to the construction of knowledge bases and expert systems
7. Ability to demonstrate the application and practice of a variety of AI knowledge areas to real world applications

- 5. Student Assessment Procedures: Briefly describe how student learning will be assessed.**

- Homework assignments to facilitate practical applications of theory.
- Programming Assignments using contemporary tools and standards.
- Semester tests to provide the Instructor and students assessment data on learning outcomes.
- Final Exam

- 6. Course Content Outline: Provide a list of topics covered by the course, methodology used to deliver material, and typical materials (e.g., texts) used within the course.**

Course topics

1. Introduction to Artificial Intelligence
2. AI Architecture
3. Problem Representation
4. Search Algorithms
5. Robotics
6. Artificial Life
7. Computer Gaming
8. Propositional and First-Order Logic
9. Knowledge Bases, Ontologies, Semantic Webs
10. Information Gathering
11. Rule-based Systems
12. Expert Systems
13. Machine Learning
14. Decision Trees
15. Natural Language Processing
16. Computer Vision
17. Text-to-Speech

Methodology to deliver course material:

Lectures (provided online), quizzes, numerous programming and design assignments with frequent feedback, discussions of trends and research topics in AI, discussions of standardization and contemporary technological advances in AI. Major term project.

Textbooks

Russell S, Norvig P (1995) Artificial Intelligence: A Modern Approach, Prentice Hall Series in Artificial Intelligence. Englewood Cliffs, New Jersey.

Practical Artificial Intelligence Programming With Java by Mark Watson (available at no cost on the author's we site)

- 7. University Resources Statement: Provide information concerning what university resources will be required for this course. Do we currently have faculty trained and available to teach this course? Does the university have equipment/technology/software/etc. required? Does the institution have the library resources needed by the instructor or by students taking this class? If insufficient resources currently exist to teach this course, please indicate what is needed and the unit's plan to garner these resources.**

We have four qualified and experienced faculty to teach the course, and university has all the equipment, software and library resources need by the instructor and by the students taking this class. Students will have access to the on-line Digital Library of the ACM and IEEE.

- 8. Fee Explanation (when appropriate): If the proposed course requires an additional fee, explain what it is and how the fee will be used. (Implementation of a special course fee must be approved per university policy.)**

NA

(Please complete curriculum form which follows)

New Course Form

To: Undergraduate Committee
 Graduate Committee

(Date Format: 99/99/99) UC/GC Meeting Date: 10/8/09
 (Date Format: 99/99/99) Date Submitted: 10/5/09
 (Term Format: 200608) Proposed Effective Term: 201008
 CIP Code: 11.07

College Code: 19 - CIT Department Code: 1902 Department: Computer Sciences

1. Subject: CSCI Number: 7130
2. Full Course Title for Catalog: Artificial Intelligence - Theory and Application
 Abbreviated Course Title (max 30 characters): Artificial Intelligence
 (Only abbreviate if Full Course Title is MORE than 30 characters)

3. Will this course be cross-listed with other courses? No
 If Yes, please list the cross-listed courses below.

Subject: _____ Number: _____
 Subject: _____ Number: _____
 Subject: _____ Number: _____

****A New Course Form or Course Revision Form MUST be submitted for each cross-listed course. Forms will not be accepted by the Recording Secretary unless forms for all cross-listed courses are submitted from each College****

4. Will this course be listed on any program page(s)? Yes
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the New Course so they can submit revisions if necessary.

	Low (Must Be Completed)	High (Only for variable hours)
5. Credit Hours:	<u>3</u>	<u>Drop-Down</u>
Billing Hours:	<u>3</u>	<u>Drop-Down</u>
Lecture/Seminar Contact Hours:	<u>3</u>	<u>Drop-Down</u>
Lab Contact Hours:	—	<u>Drop-Down</u>
Will multiple labs be offered for each lecture section?		<u>Drop-Down</u>
Other Contact Hours:	—	<u>Drop-Down</u>
Total Contact Hours:	<u>3</u>	<u>Drop-Down</u>
Ratio of Contact Hours to Credit Hours:	<u>1</u> (Low) : <u>1</u>	— (High) : —

6. Repeatable for Credit: No
 ("Yes" can count more than once toward graduation. "No" will only count once toward graduation.)

7. Additional Fees: No If yes, amount: _____

8. Level: S2-Masters Drop-down Drop-down

9. Grade Mode: N = Normal Drop-down Drop-down Drop-down
 (Default)

10. Schedule Type: M = Asynchronous Instruction Drop-down Drop-down Drop-down
 (Default)

*****Please be sure that Schedule Type matches Lecture, Lab, or Other Hour Type (# 5) *****

PROPOSED	COURSE PREREQUISITE(S)							
	Subject:	CSCI	Number:	3230	Concurrent:	No	Minimum Grade:	B
	And Subject:	CSCI	Number:	3232	Concurrent:	No	Minimum Grade:	B
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
	Additional prerequisite(s): or permission of instructor				Are prerequisites to be enforced at Registration? <u>No</u>			

PROPOSED	COURSE CO-REQUISITE(S)						
	Subject:	_____	Number:	_____			
	And Subject:	_____	Number:	_____			
	And Subject:	_____	Number:	_____			
	And Subject:	_____	Number:	_____			
Additional co-requisite(s):				Are co-requisites to be enforced at Registration? <u>Drop-down</u>			

PROPOSED	CATALOG DESCRIPTION			
	Examines the fundamental theory for research, design, and development of artificial intelligence systems. Emphasizes state space search, computer gaming, logic, and knowledge representation . Topics include expert systems, natural language understanding, planning, machine learning and decision making with a view toward applications. Students develop a working system in a realistic application domain.			

New Course Approval Signature Form

New Course

Proposed Course Subject: CSCI
Proposed Course Number: 7130
Proposed Course Title: Artificial Intelligence - Theory and Application

Approval Signatures

Recommend
 Not Recommend

Chairperson, Department Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

Department/School Chairperson Date

TEC Review Not Required _____ *(Initials of Dept./School Chair or TEC Chair)*
 Review Only *(no action needed)*
 Recommend
 Not Recommend

Chairperson, TEC Executive Committee Date
(If Applicable)

Recommend
 Not Recommend

Director of University Honors Program Date
(If Applicable)

Recommend
 Not Recommend

Chairperson, College Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

Dean of the College Date

Recommend
 Not Recommend

Dean of the Graduate College Date
(If Applicable)

Recommend
 Not Recommend

Chairperson, Senate Undergraduate/Graduate Committee Date

Recommend
 Not Recommend

Provost/Vice President for Academic Affairs Date
(Final sign-off)

*Consultation between appropriate chairpersons and deans must occur if this item impacts another unit before final approval.

Georgia Southern University
New Course Form

Subject: CSCI

Number: 7132

Answers to all the following questions must be submitted. Limit total responses to two pages.

1. Need for the Course: Identify the need for the course; for example, required for the major, for certification, elective, etc.
Required core course for the proposed MSCS

2. Similarity with existing course: Include a clear statement indicating that a thorough examination has been made of other departments/units/colleges and discuss to what extent this course duplicates or overlaps existing course(s). If course duplication occurs, provide a justification for a similar course and a description of dialogues that have occurred with the department(s) where the duplication exists.

No duplication as the course represents a graduate level coverage of Database Systems, both the Theory and Applications within the context of contemporary technology

3. Accreditation/Licensure approval: Does this course meet the desired requirements for the appropriate accreditation bodies? Has the proposing unit secured the appropriate approval of all on-campus governing bodies {(e.g., Teacher Education Committee (TEC)}?

NA

4. Course Goals/Objectives: Clearly outline the objectives of the proposed course. Describe the student learning outcomes that are expected from this course.

Course is focused on effective design and application of complex Database Systems, involving both traditional relational database issues, object-relational databases, advanced rules and constraints, advanced SQL programming, data model validation, ontology based data modeling, contemporary semi-structured data modeling with XML Schema, advances in SQL, XML, XML Schema, XQuery, and Data Modeling standardization. Review of advances in DB research and DB technology trends. Students will also act as practicing advisors to other students working on DB design projects.

Outcomes:

1. An understanding of database systems in the context of traditional relational databases and of contemporary DB theory and application development/evaluation methodologies, tools, standards and practices.
2. Familiarity with design methodologies and tools, as well as relevant standards and practices
3. Ability to specify requirements for a DB, and technologies for a DB development scenario
4. Ability to use appropriate standards, professional practices and contemporary theory, methods and tools in designing, evaluating and improving of DB models and applications
5. Ability to document work to an acceptable standard and perform teamwork including the use of virtual teaming technology

5. Student Assessment Procedures: Briefly describe how student learning will be assessed.

- Project based presentation/discussion and review of the results of a term long DB Project with professional documentation
- Programming Assignments using contemporary tools and standards and a field/laboratory type of study/work
- Design Assignments using contemporary tools and standards and field/laboratory study/work
- Final Exam

6. Course Content Outline: Provide a list of topics covered by the course, methodology used to deliver material, and typical materials (e.g., texts) used within the course.

Course topics

1. Contemporary DB Systems and data quality requirements
2. Theoretical basis for relational databases, SQL, XML, and data modeling
3. Advanced SQL Programming
4. XML and XML Schema
5. XQuery
6. Formalization of Data Modeling
7. Advanced Data Modeling
8. Industrial DB Applications
9. Data Model Validation
10. Rules and constraints in relational and Object relations DB

11. Data Integration'
12. Metadata standardization and repositories
13. DB Research
14. DB Technology Trends

Methodology to deliver course material:

Lectures (provided online), quizzes, numerous programming and design assignments with frequent feedback, discussions of trends and research topics in DB, discussions of standardization and contemporary technological advances in DB and particularly in database design and model validation areas. Major term projects including threaded discussions and consultation engagements by students on other student projects.

Textbooks

1. T. Connolly, C. Begg "Database Systems", 6ed, Addison Wesley 2010,

Recommended reading

1. L. Silverston "The Data Model Resource Book" 2nd Rev. ed. Vol. 1/2, John Wiley 2003
2. D.Hay "Data Model Patterns- A Metadata Map" MK 2006
3. T.Halpin, T. Morgan "Information Modeling and Relational Databases" 2ed. MK 2008
4. S. Dietrich, S. Urban "An Advanced Course in Database Systems- Beyond Relational Database" 2006
5. Selected research papers - including selections from Hillerstein's, Stonebraker's (editors) Readings in DB, MK 2008.
6. XML, XML Schema, XPath, XQuery, IEEE IDEF1X, ISO UML, and SQL:2008 standards on the www.

7. **University Resources Statement: Provide information concerning what university resources will be required for this course. Do we currently have faculty trained and available to teach this course? Does the university have equipment/technology/software/etc. required? Does the institution have the library resources needed by the instructor or by students taking this class? If insufficient resources currently exist to teach this course, please indicate what is needed and the unit's plan to garner these resources.**

We have five qualified and experienced faculty to teach the course, and university has all the equipment, software and library resources need by the instructor and by the students taking this class.

8. **Fee Explanation (when appropriate): If the proposed course requires an additional fee, explain what it is and how the fee will be used. (Implementation of a special course fee must be approved per university policy.)**

NA

(Please complete curriculum form which follows)

New Course Form

To: Undergraduate Committee
 Graduate Committee

(Date Format: 99/99/99) UC/GC Meeting Date: 10/8/09
 (Date Format: 99/99/99) Date Submitted: 10/5/09
 (Term Format: 200608) Proposed Effective Term: 201008
 CIP Code: 11.07

College Code: 19 - CIT Department Code: 1903 Department: CS

1. Subject: CSCI Number: 7132
2. Full Course Title for Catalog: Database Systems Design-Theory and Application
 Abbreviated Course Title (max 30 characters): Database Systems Design
 (Only abbreviate if Full Course Title is MORE than 30 characters)

3. Will this course be cross-listed with other courses? No
 If Yes, please list the cross-listed courses below.

Subject: _____ Number: _____
 Subject: _____ Number: _____
 Subject: _____ Number: _____

****A New Course Form or Course Revision Form MUST be submitted for each cross-listed course. Forms will not be accepted by the Recording Secretary unless forms for all cross-listed courses are submitted from each College****

4. Will this course be listed on any program page(s)? No
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the New Course so they can submit revisions if necessary.

	Low (Must Be Completed)	High (Only for variable hours)
5. Credit Hours:	<u>3</u>	<u>Drop-Down</u>
Billing Hours:	<u>3</u>	<u>Drop-Down</u>
Lecture/Seminar Contact Hours:	<u>3</u>	<u>Drop-Down</u>
Lab Contact Hours:	—	<u>Drop-Down</u>
Will multiple labs be offered for each lecture section?		<u>No</u>
Other Contact Hours:	—	<u>Drop-Down</u>
Total Contact Hours:	<u>3</u>	<u>Drop-Down</u>
Ratio of Contact Hours to Credit Hours:	<u>1</u> (Low) : <u>1</u>	— (High) : —

6. Repeatable for Credit: No
 (“Yes” can count more than once toward graduation. “No” will only count once toward graduation.)

7. Additional Fees: No If yes, amount: _____

8. Level: S2-Masters Drop-down Drop-down

9. Grade Mode: N = Normal Drop-down Drop-down Drop-down
 (Default)

10. Schedule Type: M = Asynchronous Instruction B = Lecture/Supervised Lab Drop-down Drop-down
 (Default)

*****Please be sure that Schedule Type matches Lecture, Lab, or Other Hour Type (# 5) *****

PROPOSED	COURSE PREREQUISITE(S)				
		Subject: <u>CSCI</u>	Number: <u>3230</u>	Concurrent: <u>No</u>	Minimum Grade: <u>B</u>
	And	Subject: <u>CSCI</u>	Number: <u>3232</u>	Concurrent: <u>No</u>	Minimum Grade: <u>B</u>
	And	Subject: <u> </u>	Number: <u> </u>	Concurrent: <u>No</u>	Minimum Grade: <u>D</u>
	And	Subject: <u> </u>	Number: <u> </u>	Concurrent: <u>No</u>	Minimum Grade: <u>D</u>
	Additional prerequisite(s): or permission of instructor				
Are prerequisites to be enforced at Registration? <u>No</u>					

PROPOSED	COURSE CO-REQUISITE(S)			
		Subject: <u> </u>	Number: <u> </u>	
	And	Subject: <u> </u>	Number: <u> </u>	
	And	Subject: <u> </u>	Number: <u> </u>	
	And	Subject: <u> </u>	Number: <u> </u>	
	Additional co-requisite(s):			
Are co-requisites to be enforced at Registration? <u>Drop-down</u>				

PROPOSED	CATALOG DESCRIPTION
	Effective design and application of complex Database Systems, involving both traditional relational databases, object-relational databases, advanced rules and constraints, advanced SQL programming, data model validation, ontology based data modeling, contemporary semi-structured data modeling with XML Schema, and advances in SQL, XML, XML Schema, XQuery, and Data Modeling standardization. Review of advances in DB research and DB technology trends. Students will also act as practicing advisors to other students working on DB design projects.

New Course Approval Signature Form

New Course

Proposed Course Subject: CSCI

Proposed Course Number: 7132

Proposed Course Title: Database Systems Design- Theory and Application

Approval Signatures

Recommend
 Not Recommend

Chairperson, Department Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

Department/School Chairperson Date

TEC Review Not Required _____ *(Initials of Dept./School Chair or TEC Chair)*
 Review Only *(no action needed)*
 Recommend
 Not Recommend

Chairperson, TEC Executive Committee Date
(If Applicable)

Recommend
 Not Recommend

Chairperson, College Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

Dean of the College Date

Recommend
 Not Recommend

Dean of the Graduate College Date
(If Applicable)

Recommend
 Not Recommend

Chairperson, Senate Undergraduate/Graduate Committee Date

Recommend
 Not Recommend

Provost/Vice President for Academic Affairs Date
(Final sign-off)

*Consultation between appropriate chairpersons and deans must occur if this item impacts another unit before final approval.

Georgia Southern University
New Course Form

Subject: CSCI

Number: 7136

Answers to all the following questions must be submitted. Limit total responses to two pages.

- 1. Need for the Course: Identify the need for the course; for example, required for the major, for certification, elective, etc.**
Required core course for the proposed MSCS
- 2. Similarity with existing course: Include a clear statement indicating that a thorough examination has been made of other departments/units/colleges and discuss to what extent this course duplicates or overlaps existing course(s). If course duplication occurs, provide a justification for a similar course and a description of dialogues that have occurred with the department(s) where the duplication exists.**
No duplication exists
- 3. Accreditation/Licensure approval: Does this course meet the desired requirements for the appropriate accreditation bodies? Has the proposing unit secured the appropriate approval of all on-campus governing bodies {(e.g., Teacher Education Committee (TEC)}?**
NA
- 4. Course Goals/Objectives: Clearly outline the objectives of the proposed course. Describe the student learning outcomes that are expected from this course.**
The objectives of the course are as follows:
 1. To teach students the programming and project managements skills necessary to create a Web system solution to a problem through:
 - a. Requirements gathering
 - b. Web systems design
 - c. Web systems implementation
 - d. Web systems testing
 - e. Web systems maintainance
 2. To teach students how to function effectively in a team to produce a Web systems solution to a problem
The learning outcomes are as follows:
 1. Understand fundamental concepts of client-side programming
 2. Understand fundamental concepts of server-side programming
 3. Understand how to perform stateless client/server transactions
 4. Understand how to maintain state on the client
 5. Understand how to maintain state on the server
 6. Understand how to perform server side transactions with a database
 7. Understand distributed Web project design methodologies
 8. Understand database design methodologies for distributed Web projects
 9. Understand testing methodologies for distributed Web projects
 10. Understand project management concepts necessary for creating a distributed Web project
 11. Understand how to create a distributed Web solution to a problem while working within a team
- 5. Student Assessment Procedures: Briefly describe how student learning will be assessed.**
Individual Programming assignments
Participation in discussion forums
A semester long group project
- 6. Course Content Outline: Provide a list of topics covered by the course, methodology used to deliver material, and typical materials (e.g., texts) used within the course.**
 1. Client side programming using HTML, Javascript and CSS
 2. Server side programming using PHP (or JSP)
 3. Submitting form data from client to server
 4. Using cookies to save state on the client
 5. Using Application and Session variables and server side cookies to maintain state on the server
 6. Performing database transactions through PHP (or JSP)

- 7. Design patterns for Web systems
- 8. Designing a database for a Web system
- 9. Testing methods for Web systems
- 10. Project management concepts for Web systems solutions

Methodology used to deliver:

The course will be delivered online using Georgia View and Wimba
 Online modules will developed for each topic through the Center for Online Learning
 Online discussion forums will be used to facilitate discussion
 GA View will be used for collecting assignments, testing and grading
 Wimba will be used for live class meetings
 Slides will be developed, posted online and delivered live on Wimba

Materials used within the course:

1. Textbooks:

PHP and MySQL Web Development by Luke Welling and Laura Thomson, Addison-Wesley Professional; 4 edition (2008)
 Web Standards Programmer's Reference : HTML, CSS, JavaScript, Perl, Python, and PHP

2. Assigned readings from the Internet

3. Sample code (online)

- 7. University Resources Statement: Provide information concerning what university resources will be required for this course. Do we currently have faculty trained and available to teach this course? Does the university have equipment/technology/software/etc. required? Does the institution have the library resources needed by the instructor or by students taking this class? If insufficient resources currently exist to teach this course, please indicate what is needed and the unit's plan to garner these resources.**

The Center for Online learning provides Georgia View with Wimba which will be used exclusively for course delivery. This will require a web cam and microphone for the instructor along with a minimal amount of bandwidth needed to run the course. This equipment is already available through the CS department. The CS faculty are currently undergoing training for producing and delivering online modules for each core and concentration area course in the proposed CS program. There are currently at least four faculty in the department who are qualified to teach and deliver the content for this course. There will be no additional library resources needed for this course.

- 8. Fee Explanation (when appropriate): If the proposed course requires an additional fee, explain what it is and how the fee will be used. (Implementation of a special course fee must be approved per university policy.)**

NA

(Please complete curriculum form which follows)

New Course Form

To: Undergraduate Committee
 Graduate Committee

(Date Format: 99/99/99) UC/GC Meeting Date: 10/8/09
 (Date Format: 99/99/99) Date Submitted: 10/5/09
 (Term Format: 200608) Proposed Effective Term: 201008
 CIP Code: 11.07

College Code: 19 - CIT Department Code: 1902 Department: Computer Sciences

1. Subject: CSCI Number: 7136
2. Full Course Title for Catalog: Distributed Web Systems Design - Theory and Application
 Abbreviated Course Title (max 30 characters): Distributed Web Systems Design
 (Only abbreviate if Full Course Title is MORE than 30 characters)

3. Will this course be cross-listed with other courses? No
 If Yes, please list the cross-listed courses below.

Subject: _____ Number: _____
 Subject: _____ Number: _____
 Subject: _____ Number: _____

****A New Course Form or Course Revision Form MUST be submitted for each cross-listed course. Forms will not be accepted by the Recording Secretary unless forms for all cross-listed courses are submitted from each College****

4. Will this course be listed on any program page(s)? Yes
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the New Course so they can submit revisions if necessary.

	Low (Must Be Completed)	High (Only for variable hours)
5. Credit Hours:	<u>3</u>	<u>Drop-Down</u>
Billing Hours:	<u>3</u>	<u>Drop-Down</u>
Lecture/Seminar Contact Hours:	<u>3</u>	<u>Drop-Down</u>
Lab Contact Hours:	—	<u>Drop-Down</u>
Will multiple labs be offered for each lecture section?		<u>Drop-Down</u>
Other Contact Hours:	—	<u>Drop-Down</u>
Total Contact Hours:	<u>3</u>	<u>Drop-Down</u>
Ratio of Contact Hours to Credit Hours:	<u>1</u> (Low) : <u>1</u>	— (High) : —

6. Repeatable for Credit: No
 (“Yes” can count more than once toward graduation. “No” will only count once toward graduation.)

7. Additional Fees: No If yes, amount: _____

8. Level: S2-Masters Drop-down Drop-down

9. Grade Mode: N = Normal Drop-down Drop-down Drop-down
 (Default)

10. Schedule Type: M = Asynchronous Instruction Drop-down Drop-down Drop-down
 (Default)

*****Please be sure that Schedule Type matches Lecture, Lab, or Other Hour Type (# 5) *****

PROPOSED	COURSE PREREQUISITE(S)			
	Subject:	<u>CSCI</u>	Number:	<u>7132</u>
	Concurrent:	<u>No</u>	Minimum Grade:	<u>B</u>
	And Subject:	_____	Number:	_____
	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	And Subject:	_____	Number:	_____
Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>	
And Subject:	_____	Number:	_____	
Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>	
Additional prerequisite(s): or permission of instructor				
Are prerequisites to be enforced at Registration? <u>Yes</u>				

PROPOSED	COURSE CO-REQUISITE(S)			
	Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
	Additional co-requisite(s):			
Are co-requisites to be enforced at Registration? <u>Drop-down</u>				

PROPOSED	CATALOG DESCRIPTION
	Client and server side programming, stateless client/server transactions, state maintainance, server side database transactions, Web project design methodologies, database design methodologies for distributed Web projects, testing methodologies, and Web systems project management concepts.

New Course Approval Signature Form

New Course

Proposed Course Subject: CSCI
Proposed Course Number: 7136
Proposed Course Title: Distributed Web Systems Design - Theory and Application

Approval Signatures

Recommend
 Not Recommend

Chairperson, Department Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

Department/School Chairperson Date

TEC Review Not Required _____ *(Initials of Dept./School Chair or TEC Chair)*
 Review Only *(no action needed)*
 Recommend
 Not Recommend

Chairperson, TEC Executive Committee Date
(If Applicable)

Recommend
 Not Recommend

Director of University Honors Program Date
(If Applicable)

Recommend
 Not Recommend

Chairperson, College Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

Dean of the College Date

Recommend
 Not Recommend

Dean of the Graduate College Date
(If Applicable)

Recommend
 Not Recommend

Chairperson, Senate Undergraduate/Graduate Committee Date

Recommend
 Not Recommend

Provost/Vice President for Academic Affairs Date
(Final sign-off)

*Consultation between appropriate chairpersons and deans must occur if this item impacts another unit before final approval.

Georgia Southern University
Course Revision Form

To: Undergraduate Committee
 Graduate Committee

(Date Format: 99/99/99) UC/GC Meeting Date: 10/8/09
(Date Format: 99/99/99) Date Submitted: 10/05/09
(Term Format: 200608) Proposed Effective Term: 201008
CIP Code: 11.07

College Code: 19 - CIT Department Code: 1902 Department: Computer Sciences

1. Current Course: Subject: CSCI Number: 7431
Full Course Title: Distributed Database Systems

2. Course Change: Prerequisite(s) Drop-down
Other - Please Justify in the Remarks Drop-down
Drop-down Drop-down

Complete the remainder of this form based on your selection(s) in item #2.

3. Revised Course: Subject: _____ Number: _____
Full Course Title: _____
Abbreviated Course Title (max 30 characters): _____
(Only abbreviate if Full Course Title is MORE than 30 characters)

4. Is this course cross-listed with other courses? Drop-down
If Yes, please list the cross-listed course(s) below.
Subject: _____ Number: _____
Subject: _____ Number: _____
Subject: _____ Number: _____

The Dept(s) offering the cross-listed course must submit a Course Revision Form for each course.

5. Does this course revision require a program revision? Drop-down
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the Course Revision so they can submit revisions if necessary.

	Low (Must Be Completed)	High (Only for variable hours)
6. Credit Hours:	— <u>Drop-Down</u>	—
Billing Hours:	— <u>Drop-Down</u>	—
Lecture/Seminar Contact Hours:	— <u>Drop-Down</u>	—
Lab Contact Hours:	— <u>Drop-Down</u>	—
Will multiple labs be offered for each lecture section?		<u>Drop-Down</u>
Other Contact Hours:	— <u>Drop-Down</u>	—
Total Contact Hours:	— <u>Drop-Down</u>	—
	(Low)	(High)
Ratio of Contact Hours to Credit Hours:	__ : __	__ : __

7. Repeatable for Credit: Drop-down
(“Yes” can count more than once toward graduation. “No” will only count once toward graduation.)

8. Additional Fees: Drop-down If yes, amount: _____

9. Level: Drop-down Drop-down Drop-down

10. Grade Mode: N = Normal Drop-down Drop-down Drop-down
(Default)

11. Schedule Type: M = Asynchronous Instruction Drop-down Drop-down
(Default)

***Please be sure that Schedule Type matches Lecture, Lab, or Other Hour Type (# 6) ***

CURRENT	COURSE PREREQUISITE(S)							
	Subject:	CSCI	Number:	5432	Concurrent:	No	Minimum Grade:	C
	And Subject:	CSCI	Number:	5332	Concurrent:	No	Minimum Grade:	C
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
Additional prerequisite(s): or permission of instructor								
PROPOSED	COURSE PREREQUISITE(S)							
	Subject:	CSCI	Number:	7132	Concurrent:	No	Minimum Grade:	B
	And Subject:	CSCI	Number:	7136	Concurrent:	No	Minimum Grade:	B
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
Additional prerequisite(s): or permission of instructor								
Are prerequisites to be enforced at Registration? <u>Yes</u>								

CURRENT	COURSE CO-REQUISITE(S)							
	Subject:	_____	Number:	_____				
	And Subject:	_____	Number:	_____				
	And Subject:	_____	Number:	_____				
	And Subject:	_____	Number:	_____				
Additional co-requisite(s):								
PROPOSED	COURSE CO-REQUISITE(S)							
	Subject:	_____	Number:	_____				
	And Subject:	_____	Number:	_____				
	And Subject:	_____	Number:	_____				
	And Subject:	_____	Number:	_____				
Additional co-requisite(s):								
Are co-requisites to be enforced at Registration? <u>Drop-down</u>								

CURRENT	CATALOG DESCRIPTION
PROPOSED	CATALOG DESCRIPTION

REMARKS	And JUSTIFICATION: (Short summary)
	We are modifying the course prerequisites and the schedule type to accomodate our proposed online MSCS program.

Course Revision Approval Signature Form

Revised Course

Current Course Subject: CSCI
 Current Course Number: 7431
 Current Course Title: Distributed Database Systems

Proposed Course Subject: CSCI
 Proposed Course Number: 7431
 Proposed Course Title: Distributed Database Systems

Approval Signatures

Recommend _____
 Not Recommend _____
 Chairperson, Department Curriculum Committee Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Department/School Chairperson Date

TEC Review Not Required _____ *(Initials of Dept./School Chair or TEC Chair)*
 Review Only *(no action needed)*
 Recommend _____
 Not Recommend _____
 Chairperson, TEC Executive Committee Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Director of University Honors Program Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Chairperson, College Curriculum Committee Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Dean of the College Date

Recommend _____
 Not Recommend _____
 Dean of the Graduate College Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Chairperson, Senate Undergraduate/Graduate Committee Date

Recommend _____
 Not Recommend _____
 Provost/Vice President for Academic Affairs Date
(Final sign-off)

*Consultation between appropriate chairpersons and deans must occur if this item impacts another unit before final approval.

Georgia Southern University
Course Revision Form

To: Undergraduate Committee
 Graduate Committee

(Date Format: 99/99/99) UC/GC Meeting Date: 10/8/09
(Date Format: 99/99/99) Date Submitted: 10/5/09
(Term Format: 200608) Proposed Effective Term: 201008
CIP Code: 11.07

College Code: 19 - CIT Department Code: 1902 Department: Computer Sciences

1. Current Course: Subject: CSCI Number: 7434
Full Course Title: Data Mining

2. Course Change: Prerequisite(s) Drop-down
Other - Please Justify in the Remarks Drop-down
Drop-down Drop-down

Complete the remainder of this form based on your selection(s) in item #2.

3. Revised Course: Subject: _____ Number: _____
Full Course Title: _____
Abbreviated Course Title (max 30 characters): _____
(Only abbreviate if Full Course Title is MORE than 30 characters)

4. Is this course cross-listed with other courses? Drop-down
If Yes, please list the cross-listed course(s) below.
Subject: _____ Number: _____
Subject: _____ Number: _____
Subject: _____ Number: _____

The Dept(s) offering the cross-listed course must submit a Course Revision Form for each course.

5. Does this course revision require a program revision? Drop-down
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the Course Revision so they can submit revisions if necessary.

	Low (Must Be Completed)	High (Only for variable hours)
6. Credit Hours:	—	<u>Drop-Down</u>
Billing Hours:	—	<u>Drop-Down</u>
Lecture/Seminar Contact Hours:	—	<u>Drop-Down</u>
Lab Contact Hours:	—	<u>Drop-Down</u>
Will multiple labs be offered for each lecture section?		<u>Drop-Down</u>
Other Contact Hours:	—	<u>Drop-Down</u>
Total Contact Hours:	—	<u>Drop-Down</u>
Ratio of Contact Hours to Credit Hours:	(Low) __ : __	(High) __ : __

7. Repeatable for Credit: Drop-down
(“Yes” can count more than once toward graduation. “No” will only count once toward graduation.)

8. Additional Fees: Drop-down If yes, amount: _____

9. Level: Drop-down Drop-down Drop-down

10. Grade Mode: N = Normal Drop-down Drop-down Drop-down
(Default)

11. Schedule Type: M = Asynchronous Instruction Drop-down Drop-down
(Default)

***Please be sure that Schedule Type matches Lecture, Lab, or Other Hour Type (# 6) ***

CURRENT	COURSE PREREQUISITE(S)							
	Subject:	CSCI	Number:	5432	Concurrent:	No	Minimum Grade:	B
	And Subject:	CSCI	Number:	5330	Concurrent:	No	Minimum Grade:	B
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
Additional prerequisite(s): or permission of instructor								
PROPOSED	COURSE PREREQUISITE(S)							
	Subject:	CSCI	Number:	7130	Concurrent:	No	Minimum Grade:	B
	And Subject:	CSCI	Number:	7132	Concurrent:	No	Minimum Grade:	B
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
	And Subject:	_____	Number:	_____	Concurrent:	No	Minimum Grade:	D
Additional prerequisite(s): or permission of instructor								
Are prerequisites to be enforced at Registration? <u>Yes</u>								

CURRENT	COURSE CO-REQUISITE(S)			
	Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
Additional co-requisite(s):				
PROPOSED	COURSE CO-REQUISITE(S)			
	Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
	And Subject:	_____	Number:	_____
Additional co-requisite(s):				
Are co-requisites to be enforced at Registration? <u>Drop-down</u>				

CURRENT	CATALOG DESCRIPTION
PROPOSED	CATALOG DESCRIPTION

REMARKS	And JUSTIFICATION: (Short summary)
	We are modifying the course prerequisites and the schedule type to accommodate our proposed online MSCS program.

Course Revision Approval Signature Form

Revised Course

Current Course Subject: CSCI
 Current Course Number: 7434
 Current Course Title: Data Mining

Proposed Course Subject: CSCI
 Proposed Course Number: 7434
 Proposed Course Title: Data Mining

Approval Signatures

Recommend _____
 Not Recommend _____
 Chairperson, Department Curriculum Committee Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Department/School Chairperson Date

TEC Review Not Required _____ *(Initials of Dept./School Chair or TEC Chair)*
 Review Only *(no action needed)*
 Recommend _____
 Not Recommend _____
 Chairperson, TEC Executive Committee Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Director of University Honors Program Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Chairperson, College Curriculum Committee Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Dean of the College Date

Recommend _____
 Not Recommend _____
 Dean of the Graduate College Date
(If Applicable)

Recommend _____
 Not Recommend _____
 Chairperson, Senate Undergraduate/Graduate Committee Date

Recommend _____
 Not Recommend _____
 Provost/Vice President for Academic Affairs Date
(Final sign-off)

*Consultation between appropriate chairpersons and deans must occur if this item impacts another unit before final approval.

Georgia Southern University
Course Revision Form

To: Undergraduate Committee
 Graduate Committee

(Date Format: 99/99/99) UC/GC Meeting Date: 10/8/09
(Date Format: 99/99/99) Date Submitted: 10/5/09
(Term Format: 200608) Proposed Effective Term: 201008
CIP Code: 11.07

College Code: 19 - CIT Department Code: 1902 Department: Computer Sciences

1. Current Course: Subject: CSCI Number: 7435
Full Course Title: Data Warehousing
2. Course Change: Prerequisite(s) Drop-down
Other - Please Justify in the Remarks Drop-down
Drop-down Drop-down

Complete the remainder of this form based on your selection(s) in item #2.

3. Revised Course: Subject: _____ Number: _____
Full Course Title: _____
Abbreviated Course Title (max 30 characters): _____
(Only abbreviate if Full Course Title is MORE than 30 characters)

4. Is this course cross-listed with other courses? Drop-down
If Yes, please list the cross-listed course(s) below.
Subject: _____ Number: _____
Subject: _____ Number: _____
Subject: _____ Number: _____

The Dept(s) offering the cross-listed course must submit a Course Revision Form for each course.

5. Does this course revision require a program revision? Drop-down
If yes, a Revised Program Form must be submitted for each program on which the course is listed. Please contact other Department(s)/College(s) to inform them of the Course Revision so they can submit revisions if necessary.

- | | Low
(Must Be Completed) | High
(Only for variable hours) |
|---------------------------------------------------------|----------------------------|-----------------------------------|
| 6. Credit Hours: | — | <u>Drop-Down</u> |
| Billing Hours: | — | <u>Drop-Down</u> |
| Lecture/Seminar Contact Hours: | — | <u>Drop-Down</u> |
| Lab Contact Hours: | — | <u>Drop-Down</u> |
| Will multiple labs be offered for each lecture section? | | <u>Drop-Down</u> |
| Other Contact Hours: | — | <u>Drop-Down</u> |
| Total Contact Hours: | — | <u>Drop-Down</u> |
| Ratio of Contact Hours to Credit Hours: | (Low)
__ : __ | (High)
__ : __ |

7. Repeatable for Credit: Drop-down
(“Yes” can count more than once toward graduation. “No” will only count once toward graduation.)

8. Additional Fees: Drop-down If yes, amount: _____

9. Level: Drop-down Drop-down Drop-down

10. Grade Mode: N = Normal Drop-down Drop-down Drop-down
(Default)

11. Schedule Type: M = Asynchronous Instruction Drop-down Drop-down
(Default)

***Please be sure that Schedule Type matches Lecture, Lab, or Other Hour Type (# 6) ***

CURRENT	COURSE PREREQUISITE(S)							
	Subject:	<u>CSCI</u>	Number:	<u>5432</u>	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	And Subject:	_____	Number:	_____	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	And Subject:	_____	Number:	_____	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	And Subject:	_____	Number:	_____	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	Additional prerequisite(s): or permission of instructor							
PROPOSED	COURSE PREREQUISITE(S)							
	Subject:	<u>CSCI</u>	Number:	<u>7132</u>	Concurrent:	<u>No</u>	Minimum Grade:	<u>B</u>
	And Subject:	_____	Number:	_____	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	And Subject:	_____	Number:	_____	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	And Subject:	_____	Number:	_____	Concurrent:	<u>No</u>	Minimum Grade:	<u>D</u>
	Additional prerequisite(s): or permission of instructor							
	Are prerequisites to be enforced at Registration? <u>Yes</u>							

CURRENT	COURSE CO-REQUISITE(S)				
	Subject:	_____	Number:	_____	
	And Subject:	_____	Number:	_____	
	And Subject:	_____	Number:	_____	
	And Subject:	_____	Number:	_____	
	Additional co-requisite(s):				
PROPOSED	COURSE CO-REQUISITE(S)				
	Subject:	_____	Number:	_____	
	And Subject:	_____	Number:	_____	
	And Subject:	_____	Number:	_____	
	And Subject:	_____	Number:	_____	
	Additional co-requisite(s):				
	Are co-requisites to be enforced at Registration? <u>Drop-down</u>				

CURRENT	CATALOG DESCRIPTION
PROPOSED	CATALOG DESCRIPTION

REMARKS	And JUSTIFICATION: (Short summary)
	We are modifying the course prerequisites and the schedule type to accomodate our proposed online MSCS program.

Course Revision Approval Signature Form

Revised Course

Current Course Subject: CSCI
 Current Course Number: 7435
 Current Course Title: Data Warehousing

Proposed Course Subject: CSCI
 Proposed Course Number: 7435
 Proposed Course Title: Data Warehousing

Approval Signatures

Recommend
 Not Recommend _____
 Chairperson, Department Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend _____
 Department/School Chairperson Date

TEC Review Not Required _____ *(Initials of Dept./School Chair or TEC Chair)*
 Review Only *(no action needed)*
 Recommend
 Not Recommend _____
 Chairperson, TEC Executive Committee Date
(If Applicable)

Recommend
 Not Recommend _____
 Director of University Honors Program Date
(If Applicable)

Recommend
 Not Recommend _____
 Chairperson, College Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend _____
 Dean of the College Date

Recommend
 Not Recommend _____
 Dean of the Graduate College Date
(If Applicable)

Recommend
 Not Recommend _____
 Chairperson, Senate Undergraduate/Graduate Committee Date

Recommend
 Not Recommend _____
 Provost/Vice President for Academic Affairs Date
(Final sign-off)

*Consultation between appropriate chairpersons and deans must occur if this item impacts another unit before final approval.

Georgia Southern University
Proposed New or Revised Programs

To: Undergraduate Committee
 Graduate Committee

(Date Format: 99/99/99) UC/GC Meeting Date: 10/8/09
(Date Format: 99/99/99) Date Submitted: 10/5/09
(Term Format: 200608) Proposed Effective Term: 201008
CIP Code: 11.07

College Code: 19 - CIT Department Code: 1902 Department: Computer Sciences

Current Name of Program (ex., B.S. Mathematics):

Proposed New or Revised Name of Program (ex., B.S. Mathematics): M.S. Computer Science

(Regents' format can be found at: <http://www.usg.edu/academics/handbook/section2/2.03/2.03.02.phtml>)

1. Consistent with goals of: (check all that apply)

- Accreditation College Department State/Regional Needs
 University Strategic Plan

2. Type: New Preliminary Proposal (Attach in Regents' required format)

OR

Formal Proposal (Attach in Regents' required format)

OR

Revision to Existing Program (Attach in Regents' required format)

OR

Other Program Proposals or Revisions that do not require Regents' approval

3. Proposal for: Graduate Major

Other:

4. Degree: MS

Other:

5. Total Credit Hours Required: 30

6. Is this a change in credits (for Revisions only)? Yes No

7. Target Group of Students: Graduate Students

8. Additional Resources Needed: (check all that apply)

- Computer Needs Distributed Learning Support Equipment Facilities
 Faculty Library Resources Staff Support
 Other

9. A New or Revised Catalog Program Page must be attached.

NOTE: For Revised Catalog Program Pages:

- Refer to *Sample Program Revisions* for layout format.
- Deletions should be in **BOLD** with a **strikethrough**.
- Additions should be in **BOLD ITALICS**.

10. Provide the Justification/Rationale for New or Revised Programs.

Despite the current economy, the outlook for software professional is quite good. According to the U.S. Department of Labor (<http://www.bls.gov/oco/ocos267.htm>) "Computer software engineers are one of the occupations projected to grow the fastest and add the most new jobs over the 2006-16 decade" Money magazine's top 10 jobs of 2008 are (in order):

1. Software Engineer
2. College professor
3. Financial adviser

4. Human Resources Manager
5. Physician assistant
6. Market research analyst
7. Computer IT analyst
8. Real Estate Appraiser
9. Pharmacist
10. Psychologist

Also according to the U.S. Department of Labor (<http://www.bls.gov/oco/ocos042.htm>), “The rapid and widespread use of computers and information technology has generated a need for highly trained workers proficient in various job functions. These computer specialists include computer scientists, database administrators, and network systems and data communication analysts. Job tasks and occupational titles used to describe these workers evolve rapidly and continually, reflecting new areas of specialization or changes in technology, as well as the preferences and practices of employers.”

Finally, according to the Georgia Tech Research News (April 2005, <http://gtresearchnews.gatech.edu/newsrelease/occupations.htm>) “Though Georgia’s technology industry has been in a downturn since 2001, the number of state residents employed in high tech occupations – paying high wages has actually grown during that time, a Georgia Institute of Technology analysis of employment and wage data shows. Computer systems and software specialists are enabling a lot of different industries, not just information technology services firms, said Jan Youtie, a principal research associate in Georgia Tech’s Economic Development Institute. Analyzing data from both federal and state sources, Youtie and collaborators Philip Shapira and Jue Wang found that jobs requiring high levels of education grew 12 percent in Georgia from 2001 to 2003. While these high tech occupations added approximately 9,000 jobs to the state’s economy, employment in the rest of the state’s occupations declined by two percent.” In fact, according to Youtie, Shapira, and Wang, the number of computer systems and software specialists grew 26% over that period of time.

M.S. COMPUTER SCIENCE 30 HOURS

Advising: College of Information Technology, Department of Computer Sciences, Dr. James Harris Georgia Southern University, P.O. Box 7997, Statesboro, GA 30460, (912) 478-7394, E-mail: jkharris@georgiasouthern.edu.

Admission Requirements

Regular Admission

Domestic Candidates: (Choose Option A or Option B)

Option A

1. Bachelor of Science in Computer Science or in a related field (Computer Engineering, Information Technology, Information Systems, Software Engineering, etc.) from an accredited program.
2. Have a cumulative GPA of 3.0/4.0 or its equivalent.
3. Submit a General GRE score.

Option B

1. Bachelor of Science in Computer Science or in a related field (Computer Engineering, Information Technology, Information Systems, Software Engineering, etc.).
2. Have a cumulative GPA of 2.4/4.0 or its equivalent.
3. Have at least two years of relevant professional experience (employment) in computing.
4. Submit a General GRE score.

International Candidates:

1. Bachelor of Science in Computer Science or in a related field (for example, Computer Engineering, Information Technology, Information Systems, Software Engineering, etc.)
2. Have a cumulative GPA of 3.0/4.0 or its equivalent.
3. Submit a General GRE score.
4. Submit a minimum TOEFL score of 550 (paper-based), 213 (computer-based), or 80 (internet-based) The TOEFL will be waived for international applicants who have graduated from a U.S. College or University.

Provisional Admission

Applicants who meet most (but not all) of the Regular admission requirements may be admitted on a Provisional basis. Applicants granted Provisional admission must earn grades of "B" or higher in the courses taken under the Provisional admission status. Any other conditions of Provisional admission will be stated in the admission letter. Applicants with such admission status may take graduate-level courses counting toward the M.S. degree requirements. It is every student's responsibility to satisfy his or her conditions of admission as soon as possible after acceptance. Prerequisites for provisionally admitted students consist of online versions of the following undergraduate courses:

- CSCI 3230 - Data Structure (3)
- CSCI 3232 - Systems Software (3)

Non-Degree

Applicants who have a high number of deficiencies may be granted Non-Degree admission to the College of Graduate Studies to take a limited number of graduate level courses.

Program of study

The graduate student and the graduate advisor shall develop a Program of Study that consists of 30 hours of graduate course work, including 9 hours of core courses, 9 hours in a concentration area and either 9 hours of elective classes at the 7000 level with 3 hours of CSCI 7899 (project option) or 6 hours of elective classes at the 7000 level with 6 hours of CSCI 7999 (thesis option).

General Requirements

Core Requirements.....9 Hours

- CSCI 7130 - Artificial Intelligence - Theory and Application (3)
- CSCI 7132 - Database Systems - Theory and Application (3)
- CSCI 7136 - Distributed Web System Design - Theory and Application (3)

Area of Concentration.....9 Hours

Database and Knowledge Systems

- CSCI 7431 - Distributed Database Systems (3)
- CSCI 7434 - Data Mining (3)
- CSCI 7435 - Data Warehousing (3)

Electives6 or 9 Hours

- CSCI 7090 - Selected Topics in Computer Science (3) **OR** any CIT 7xxx courses from the IS, IT or CS Departments (by approval) (3)

Project Option (during the last semester).....3 Hours

- CSCI 7899 - Research Project in Computer Science (3)

Thesis Option (not in the same semester)6 Hours

- CSCI 7999 - Thesis (6)

Students with GPA over 3.8 are encouraged to take the Masters Thesis option.

Program Approval Signature Form

New/Revised Program

Current Program Title (*ex., B.S. Mathematics*): _____

Proposed Program Title (*ex., B.S. Mathematics*): M.S. Computer Science

Approval Signatures

Recommend
 Not Recommend

 Chairperson, Department Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

 Department/School Chairperson Date

TEC Review Not Required _____ (*Initials of Dept./School Chair or TEC Chair*)
 Review Only (*no action needed*)
 Recommend
 Not Recommend

 Chairperson, TEC Executive Committee Date
(If Applicable)

Recommend
 Not Recommend

 Director of University Honors Program Date
(If Applicable)

Recommend
 Not Recommend

 Chairperson, College Curriculum Committee Date
(If Applicable)

Recommend
 Not Recommend

 Dean of the College Date

Recommend
 Not Recommend

 Dean of the Graduate College Date
(If Applicable)

Recommend
 Not Recommend

 Chairperson, Senate Undergraduate/Graduate Committee Date

Recommend
 Not Recommend

 Provost/Vice President for Academic Affairs Date
(Final sign-off)

*Consultation between appropriate chairpersons and deans must occur if this item impacts another unit before final approval.

Computer Sciences master's degrees FORMAL PROPOSAL

Institution: Georgia Southern University

Institutional Contact (President or Vice President for Academic Affairs): Dr. Gary Means

Date: 10/05/2009

School/Division: Information Technology

Department: Computer Sciences

Name of Proposed Program: Master of Computer Science

Degree: Master of Science

Major: Computer Science

Degree Inscription: Master of Science in Computer Science

CIP Code: 110700

Anticipated Starting Date: August 2010

Program Classification:

1. Curriculum: List the entire course of study required and recommended to complete the degree program. Provide a sample program of study that might be followed by a representative student.

Coursework:

Core Requirements.....9 Hours

CSCI 7132 - Database Systems - Theory and Application (3)

Prerequisite - A minimum grade of "B" in CSCI 3230 Data Structures and CSCI 3232 Systems Software or permission of instructor

CSCI 7136 - Distributed Web Systems Design - Theory and Application (3)

Prerequisite - A minimum grade of "B" in CSCI 7132 Database Systems - Theory and Application or permission of instructor

CSCI 7130 - Artificial Intelligence - Theory and Application (3)

Prerequisite - A minimum grade of "B" in CSCI 3230 Data Structures and CSCI 3232 Systems Software or permission of the instructor

Area of Concentration.....9 Hours

Database and Knowledge Systems

CSCI 7434 - Data Mining (3)

Prerequisites - A minimum grade of "B" in CSCI 7132 Database Systems - Theory and Application and CSCI 7130 Artificial Intelligence - Theory and Application or permission of instructor

CSCI 7435 - Data Warehousing (3)

Prerequisites - A minimum grade of "B" in CSCI 7132 Database Systems - Theory and Application or permission of instructor

CSCI 7431 - Distributed Database Systems

Prerequisites - A minimum grade of "B" in CSCI 7132 Database Systems - Theory and Application and CSCI 7136 Distributed Web Systems Design - Theory and Application or permission of the instructor

Choose one of the following:

Project Option (during the last semester).....12 Hours

CSCI 7899 – Research Project in Computer Science (3)

CSCI 7000 level graduate electives (9)

or

Thesis Option (not in the same semester).....12 Hours

CSCI 7999 - Thesis (6)

CSCI 7000 level graduate electives (6)

Students with a GPA over 3.8 are encouraged to take the Master's Thesis option.

Note: Defense of both project and Thesis will be preceded by a required oral exam on the same day. This requirement is necessary for assuring the quality of our program and adequate capabilities of its graduates.

Sample program of study (intensive variant assumes six consecutive semesters of online study, including summer semesters)

For a Thesis option

Semester 1:

CSCI 7132 Database Systems - Theory and Application

CSCI 7130 Artificial Intelligence - Theory and Application

Semester 2:
CSCI 7136 Distributed Web System Design - Theory and Application
CSCI 7000 level elective

Semester 3:
CSCI 7435 Data Warehousing
CSCI 7434 Data Mining

Semester 4:

CSCI 7431 Distributed Database Systems
CSCI 7999 Masters Thesis –first 3 credits

Semester 5
CSCI 7999 Masters Thesis –last 3 credits
CSCI 7000 level elective

For a Project option

Semester 1:
CSCI 7132 Database Systems - Theory and Application
CSCI 7130 Artificial Intelligence - Theory and Application

Semester 2:
CSCI 7000 level elective
CSCI 7136 Distributed Web System Design - Theory and Application

Semester 3:
CSCI 7435 Data Warehousing
CSCI 7434 Data Mining

Semester 4:
CSCI 7431 Distributed Database Systems
CSCI 7000 level elective

Semester 5:
CSCI 7000 level CS elective
CSCI 7899 Research Project in Computer Science

a. Clearly differentiate which courses are existing and which are newly developed courses. Include the course titles as well as acronyms and credit hour requirements associated with each course.

All required computer sciences courses currently exist in the Georgia Southern catalog.

Online versions of CSCI 7132, Database Systems - Theory and Application and CSCI 7434, Data Mining have already been developed and CSCI 7130, Artificial Intelligence - Theory and Application, CSCI 7136, Distributed Web Systems Design - Theory and Application, and CSCI 7435, Data Warehousing are being developed this semester. Online versions for CSCI 7431 Distributed Database Systems and CSCI 7000 elective courses will be developed in the spring semester.

b. Append course descriptions for all courses (existing and new courses).

Please see Appendix I

c. When describing required or elective courses, list all course prerequisites.

Given in "1. Curriculum".

d. Provide documentation that all courses in the proposed curriculum have met

all

institutional requirements for approval.

<Provided CSCI 7130, CSCI 7132, and CSCI 7136 are approved>

Currently, all courses involved in the proposed program are in the current Georgia Southern University Catalog. See Appendix I for course catalog descriptions.

e. Append materials available from national accrediting agencies or professional organizations as they relate to curriculum standards for the proposed program.

The accrediting agency for computing (ABET) accredits only undergraduate programs. The ABET accrediting standards for undergraduate programs are listed in Appendix II. ABET does not accredit graduate programs in the computing sciences. The Georgia Southern University Computer Sciences undergraduate program is ABET accredited according to these standards

f. Indicate ways in which the proposed program is consistent with national standards

ABET is the national accrediting agency for computer science. ABET only accredits undergraduate Computer Science programs, so there are no formal professional standards for a Master's degree program. ABET has general accrediting standards (i.e. the non-curriculum standards) and specific (i.e. curriculum) standards. We plan to apply the same evaluation instruments to our graduate program with regard to the general ABET accrediting standards as we do in our undergraduate program. An evaluation form is to be filled out by the thesis committee for the students' capstone project / thesis presentation. Student evaluations in individual courses will be given every semester. The CIT Advisory Board will conduct periodic reviews.

Instrument	Purpose	Frequency
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Faculty Survey	To document faculty satisfaction with students and program	Yearly
Oral Presentation Evaluations	Faculty and peer assessment of quality	Semester
Graduating Student Surveys	To document student satisfaction with faculty, fellow students and the program	Yearly
Alumni Survey/Interview	To document student satisfaction with the program	Every two years after the start of the program beginning with the first graduate
Employer Survey	To document employer satisfaction with the graduates and the program	Every two years after the first graduate

Table 1: Periodic Program Review

g. If internships or field experiences are required as part of the program, provide information documenting internship availability as well as how students will be assigned and supervised.

Our proposed program has no internship or field experience.

h. Indicate the adequacy of core offerings to support the new program.

The core offerings will be provided according to the schedule listed in Table 4. The core course CSCI 7132, Database Systems - Theory and Application, is a necessary pre-requisite course to CSCI 7136, Distributed Web Systems Design - Theory and Application and all area of concentration courses, CSCI 7434, Data Mining, CSCI 7435, Data Warehousing and CSCI 7431, Distributed Database Systems. The core course CSCI 7130, Artificial Intelligence - Theory and Application, is a required course for CSCI 7434, Data Mining. Many techniques in data mining involve AI concepts. The core course CSCI 7136, Distributed Web Systems Design - Theory and Application is a prerequisite course for CSCI 7431, Distributed Database Systems and provides the pre-requisite knowledge for students to create Web projects allowing them to apply concepts learned in upper level courses. The three core courses provide a solid foundation for students to build on in their concentration area.

2. Admissions criteria:

Admission Requirements

1. Regular Admission

Domestic Candidates:

A)

1. Bachelor of Science in Computer Science or in a related field (Computer Engineering, Information Technology, Information Systems, Software Engineering, etc.) from a regionally accredited program.
2. Have a cumulative GPA of 3.0/4.0 or its equivalent.
3. Submit a General GRE score.

OR

B)

1. Bachelor of Science in Computer Science or in a related field (Computer Engineering, Information Technology, Information Systems, Software Engineering, etc.).
2. Have a cumulative GPA of 2.4/4.0 or its equivalent.
3. Have at least two years of relevant professional experience (employment) in computing.
4. Submit a General GRE score.

International Candidates

1. Bachelor of Science in Computer Science or in a related field (for example, Computer Engineering, Information Technology, Information Systems, Software Engineering, etc.)
2. Have a cumulative GPA of 3.0/4.0 or its equivalent.
3. Submit a General GRE score.
4. Submit a minimum TOEFL score of 550 (paper-based), 213 (computer-based), or 80 (Internet-based). The TOEFL will be waived for international applicants who have graduated from a U.S. College or University.

2. Provisional Admission

Applicants who meet most (but not all) of the Regular admission requirements may be admitted on a Provisional basis. Any other conditions of Provisional admission will be stated in the admission letter. Applicants with such admission status may take graduate-level courses counting toward the M.S. degree requirements. It is every student's responsibility to satisfy his or her conditions of admission as soon as possible after acceptance. Prerequisites for provisionally admitted students consist of online versions of the following undergraduate courses. A "B" or better must be earned in both.

- CSCI 3230 Data Structure (3)
- CSCI 3232 Systems Software (3)

International applicants may not be admitted provisionally.

Non-Degree

Applicants who have a high number of deficiencies may be granted Non-Degree admission to the College of Graduate Studies to take a limited number of graduate level courses.

Application Deadlines

The application deadlines for both admissions and financial aid decisions are:

Semester	Domestic	International
Fall	March 1 Priority July 1 Final	March 1 Priority June 1 Final
Spring	October 1	October 1
Summer	April 1	February 1

Table 2: Application Deadlines

The applications available on those dates will be processed as promptly as possible, within one month of the closing date. Admission decisions will be based on the space available and the criteria and preferences explained elsewhere. Applications received after the deadline will be considered if space is available, but such applications will normally not be considered until the next appropriate application deadline.

3. Availability of assistantships:

Since this is an online program, there will be no assistantships available. There will be a graduate assistant provided for the program to help faculty and staff administer the program.

4. Student Learning Outcomes and other outcomes of the proposed program:

The student outcomes for our program are:

- An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;
- An ability to function effectively on teams to accomplish a common goal;
- An ability to use current techniques, skills, and tools necessary for computing practice;
- An ability to effectively research a topic in Computer Science and produce a significant

work as either a written thesis or a software project.

5. Administration of the program:

a. Indicate where the program will be housed within the academic units of the institution

The program will be housed within the College of Information Technology building.

b. Describe the administration of the program inclusive of coordination and responsibility.

The program will be coordinated by a graduate director. The graduate director will be a full time tenured faculty member. The graduate director will be the chair of the Computer Sciences graduate committee. The graduate committee will be responsible for determining acceptance of graduates into the program and for directing administrative and curriculum changes to the program. The graduate committee will consist of three tenured or tenure track graduate faculty members (including the chair).

6. Waiver to Degree-Credit Hour (if applicable): If the program exceeds the maximum credit hour requirement for associate degrees, then provide an explanation supporting the increase in hours.

Not applicable

7. Accreditation: Describe disciplinary accreditation requirements associated with the program (if applicable).

Not applicable

8. Projected enrollment for the program.

We estimate an initial enrollment of 20, 10 in the fall 2010 cohort and 10 in the spring 2011 cohort. It is anticipated that 20% will drop from the program each year. The number of students in each cohort will rise two per year until the fourth year. The number of students was estimated by a conservative review of current market conditions. The student demand at Georgia Southern University is demonstrated by the results of a survey of upper-class undergraduate CIT students and alumni given in the Fall of 2008. Strong interest in the proposed computer sciences masters' degree was expressed by over 80% of surveyed students with over 60% of the aforementioned being qualified for admission. We anticipate that the initial enrollment in 2010/2011 will be largely drawn from existing and former CS and IT students and alumni and information technology professionals upgrading their skills and/or waiting for better economic conditions. We anticipate the demand for the program to rise as our advertising market increases.

9. Faculty

a. Provide an inventory of faculty directly involved with the administration of the program. For each faculty member, provide the following information:

Faculty Name	Rank	Highest Degree	Degrees Earned	Academic Discipline	Current Workload
Debopam Acharya	Assistant Professor	PhD	BS MS	Computer Science	13 Hours
James Bradford	Professor	PhD	BS MS	Computer Science/Human-Computer Interaction	12 Hours
Robert P. Cook	Professor	PhD	BS MS	Computer Science	3 Hours
Ardian Greca	Associate Professor	PhD	BS	Systems and Information Engineering	6 Hours
James Harris	Associate Professor	PhD	BS MS	Computer Science	1 Hour
Vladan Jovanovic	Professor	PhD	B.Eng M. Sci	Software Engineering	9 Hours
Lixin Li	Associate Professor	PhD	BS MS	Computer Science	10 Hours
Youming Li	Associate Professor	PhD	BS MS	Computer Science	9 Hours
Kera Bell Watkins	Assistant Professor	PhD	BS MS	Computer Science/Software Engineering	10 Hours
Wen-Ran Zhang	Professor	PhD	BS MS	Computer Engineering	9 Hours

Table 3: Faculty Qualifications and Workload

Explanation of how workload will be impacted by the new program

Table 4 below shows the courses needed for a two per year cohort model. To support this model, it will be necessary to be able to offer two courses the first semester, four courses the second semester, four courses each fall, spring and summer afterwards. A temporary CS instructor will be hired to cover two undergraduate freshmen level courses in the first semester and four undergraduate freshmen level courses in the second semester freeing up current CS faculty to teach graduate sections. This would be funded through proceeds from the program. A permanent CS instructor/lecturer is to be hired before the start of the fall 2011 semester. This lecturer will teach four lower level CS courses each semester freeing current CS faculty to teach

four graduate courses per semester. A search will be done the first year to fill the lecturer position. In addition, a part-time temporary faculty will teach one entry level programming course each spring. This will also be funded through proceeds from the program. There will be no increase in current faculty teaching loads. There will be an increase in service with the addition of having faculty serve on a graduate committee overseeing the admissions and advising process for the program. The graduate director will be in charge of admissions, advising and will be the chair of the CS graduate committee. For each research project course (CSCI 7899) or thesis course (CSCI 7999) completed, a faculty member will receive 1/2 hours credit. When a faculty member has accumulated 3 hours of credit, they will be given a one course (three hour) reduction in their teaching load, covered by hiring a part-time temporary instructor to cover those three hours. This will be funded through proceeds from the program.

Semester	Courses Offered	Cohort I	Cohort II
Fall 2010	<ul style="list-style-type: none"> • CSCI 7130 Artificial Intelligence - Theory and Application (Cohort I) • CSCI 7132 Database Systems - Theory and Application (Cohort I) 	<ul style="list-style-type: none"> • CSCI 7132 Database Systems - Theory and Application • CSCI 7130 Artificial Intelligence - Theory and Application 	
Spring 2011	<ul style="list-style-type: none"> • CSCI 7130 Artificial Intelligence - Theory and Application (Cohort II) • CSCI 7132 Database Systems - Theory and Application (Cohort II) • CSCI 7136 Distributed Web Systems Design - Theory and Application (Cohort I) • CSCI 7000 elective (cohort I) 	<ul style="list-style-type: none"> • CSCI 7136 Distributed Web Systems Design - Theory and Application • CSCI 7000 elective 	<ul style="list-style-type: none"> • CSCI 7132 Database Systems - Theory and Application • CSCI 7130 Artificial Intelligence - Theory and Application
Summer 2011	<ul style="list-style-type: none"> • CSCI 7136 Distributed Web Systems Design - 	<ul style="list-style-type: none"> • CSCI 7431 Distributed Database Systems • CSCI 7000 elective 	<ul style="list-style-type: none"> • Same as Cohort I Spring 2011

	<p>Theory and Application (Cohort II)</p> <ul style="list-style-type: none"> • CSCI 7431 Distributed Database Systems (Cohort I) • CSCI 7000 elective (Cohort I) • CSCI 7000 elective (Cohort II) 		
Fall 2011	<ul style="list-style-type: none"> • CSCI 7130 Artificial Intelligence - Theory and Application (Cohort III) • CSCI 7132 Database Systems - Theory and Application (Cohort III) • CSCI 7000 elective (Cohort I & II) • CSCI 7435 Data Warehousing 	<ul style="list-style-type: none"> • CSCI 7999 Thesis (3 hrs) • CSCI 7435 Data Warehousing <p>OR</p> <ul style="list-style-type: none"> • CSCI 7435 Data Warehousing • CSCI 7000 elective 	<ul style="list-style-type: none"> • CSCI 7000 elective • CSCI 7435 Data Warehousing <p>Cohort III starts - same schedule as cohort I</p>
Spring 2012	<ul style="list-style-type: none"> • CSCI 7132 Database Systems - Theory and Application (Cohort IV) • CSCI 7130 Artificial Intelligence - Theory and Application (Cohort IV) • CSCI 7136 Distributed Web Systems Design - Theory and Application (Cohort III) 	<ul style="list-style-type: none"> • CSCI 7999 Thesis (3 hrs) • CSCI 7434 Data Mining <p>OR</p> <ul style="list-style-type: none"> • CSCI 7899 Research Project • CSCI 7434 Data Mining 	<ul style="list-style-type: none"> • CSCI 7434 Data Mining • CSCI 7999 Thesis (3 hrs) <p>OR</p> <ul style="list-style-type: none"> • CSCI Data Mining • CSCI 7000 elective <p>Cohort IV starts - same schedule as cohort II</p>

	<ul style="list-style-type: none"> • CSCI 7000 elective (Cohorts II & III) • CSCI 7434 Data Mining (Cohorts I & II) 		
Summer 2012	Same as Summer 2011		<ul style="list-style-type: none"> • CSCI 7431 Distributed Database Systems • CSCI 7999 Thesis (3 hrs) <p>OR</p> <ul style="list-style-type: none"> • CSCI 7431 Distributed Database Systems • CSCI 7899 Research Project
Fall 2012	Same as Fall 2011		
Spring 2013	Same as Spring 2012		
Summer 2013	Same as Summer 2012		

Table 4: Schedule of Classes over three years

Expected responsibilities in the program:

Total Number of Faculty: 9

b. If it will be necessary to add faculty in order to begin the program, give the desired qualifications of the persons to be added, with a timetable for adding new faculty and plan for funding new positions.

A part time instructor is to be hired for the first two semesters. The instructor will have the qualifications to be able to teach introductory programming classes in Visual Basic and Java. That instructor will teach two lower level CS courses the first semester and four the second semester. This will free up current CS faculty to teach the graduate courses necessary to support the program in the first year. A new full time CS instructor/lecturer is to be hired before the start of the Fall 2011 semester. The instructor/lecturer will also have the qualifications to be able to teach introductory programming classes in Visual Basic and Java. This instructor/lecturer would teach four lower level CS courses each semester freeing current CS faculty to teach four graduate courses each semester. A part-time temporary instructor will be hired to teach one introductory programming class each spring. In the third year, a part-time temporary instructor will be hired to cover the course loads necessary to give credit to faculty

teaching the project (CSCI 7899) and thesis (CSCI 7999) courses. Each time a faculty member teaches one of these two courses, they will be given a 1/2 hour credit. When they accumulate three hours credit, they will be given a one course reduction. This part-time temporary instructor should also be able to teach the introductory courses in Visual Basic and Java. A graduate director will be assigned before the start of the program. The director will be given an \$8000/year stipend.

11. Fiscal, Facilities, Enrollment Impact, and Estimated Budget

a. Provide a narrative that explains how current institutional resources will be expended specifically for this program. Provide a narrative that explains how the institution will fiscally support the establishment of the new program through the redirection of new resources. Indicate whether the institution will submit a request for new funds as part of its budget request. The narrative also needs to explain the basis of the institution's projections with regard to anticipated EFT, head count student enrollment, estimated expenditures, and projected revenues.

The first year, it will only be necessary to provide a part time instructor to teach two lower-level CS classes in the first semester and four classes in the second semester, a graduate assistant, a modest supply budget, and training for CS faculty in online course development. In the second year, a full time instructor/lecturer will be hired along with a part-time temporary instructor who will teach one class each spring to cover lower level CS classes, freeing up CS faculty to teach the necessary graduate level classes. Faculty teaching loads will remain the same.

Enrollments are based on two cohorts per year, a fall cohort and spring cohort. In the first academic year, each cohort is projected to have ten students. In the second academic year, 80% of the previous year's cohort will continue and it is projected that each second academic year cohort will have 12 students. The increase of two students per cohort per academic year continues into the third and fourth years with 14 and 16 new students in each of the third and fourth year's cohorts respectively. The "new tuition" field is based on the formula:

$$\text{number of students per semester} * 6 * \$350/\text{credit hr}$$

This is dollar amount summed up over the year (one semester the first fiscal year - three semesters each fiscal year afterwards). The main expenditures come from new online library access (\$6,600/year), a graduate assistant (\$7,200/year), a part-time temporary instructor to teach two classes the first semester (\$7,116) and four classes the second semester (\$14,232) of the program, the graduate directors stipend (\$8000/year) and a new full-time instructor/lecturer in the second academic year (initially \$50,000/year + fringe benefits increasing 3%/year). There will be a 1/2 hour credit for each thesis (CSCI 7999) or project course (CSCI 7899) course taught. When a faculty member has accumulated three hours, they will be given a one course load reduction. This load reduction will be covered by hiring a part-time temporary instructor. These will be

supported through the \$200+/credit hour generated by the program for the department and a graduate assistant provided the administration.

The budget for the first four fiscal years based on our cohort model is shown below.

	First Year FY 2010	Second Year FY 2011	Third Year FY 2012	Fourth Year FY 2013
I. ENROLLMENT PROJECTIONS				
Student Majors				
Shifted from other programs	0	0	0	0
New to the institution	10	22	26	30
Total Majors	10	30	44	51
Course Sections Satisfying Program Requirements				
Previously existing	0	2	12	12
New	2	10	0	0
Total Program Course Sections	2	12	12	12
Credit Hours Generated by Those Courses				
Existing enrollments	0	48	307	363
New enrollments	60	252	300	348
Total Credit Hours	60	300	607	711
DEGREES AWARDED	0	14	24	28
	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>	<i>Year 5</i>
II. EXPENDITURES	EFT Dollars	EFT Dollars	EFT Dollars	EFT Dollars
Personnel – reassigned or existing positions				
Faculty				
Part-time Faculty				
Graduate Assistants				
Administrators (Graduate administrator)	\$8,000	\$8,000	\$8,000	\$8,000
Support Staff				
Fringe Benefits				
Other Personnel Costs				
Total Existing Personnel Costs	\$8,000	\$8,000	\$8,000	\$8,000

EXPENDITURES (Continued)				
Personnel – new positions				
Faculty - Lecturer (one new lecturer in second year)	\$0	\$50,000	\$51,500	\$53,045
Part-time Faculty	\$6,000	\$18,000	16,500	\$19,000
Graduate Assistants	\$3,600	\$7,200	\$7,200	\$7,200
Administrators				
Support Staff				
Fringe Benefits	\$1,116	\$11,532	\$10,137	\$10,424
Other personnel costs				
Total New Personnel Costs	\$10,716	\$87,848	\$87,848	\$92,645
Start-up Costs (one-time expenses)				

Library/learning resources				
Equipment				
Other (Online preps)	\$9,000	\$9,000	\$0	\$0
Physical Facilities: construction or major renovation				
Total One-time Costs	\$9,000	\$9,000	\$0	\$0
Operating Costs (recurring costs – base budget)				
Supplies/Expenses	\$500	\$500	\$500	\$500
Travel	\$500	\$500	\$500	\$500
Equipment				
Library/learning resources	\$3,300	\$6,600	\$6,600	\$6,600
Other				
Total Recurring Costs	\$1,000	\$1,000	\$1,000	\$1,000
GRAND TOTAL COSTS	\$32,016	\$112,448	\$103,448	\$108,245
III. REVENUE SOURCES				
Source of Funds				
Reallocation of existing funds				
New student workload				
New Tuition	\$21,000	\$105,000	\$212,450	\$248,850
Federal funds				
Other grants				
Student fees				
Other				
New state allocation requested for budget hearing				
Nature of Funds				
Base budget	\$8200	\$67,500	\$69,525	\$71,611
One-time funds (Online preps)	\$9000	\$9000	\$0	\$0
GRAND TOTAL REVENUES	\$38,200	\$181,500	\$281,975	\$320,461

Facilities Information for New Academic Programs

Proposed Location for the Program: Online

Floor area required for the program (gross and net square feet): 0

Type of spaces required:

- *No. of classrooms* 0
- *No. of labs* 0
- *No. of offices* 0
- *Other spaces* 0

Place an "X" beside the appropriate selection:

Existing facility will be used as is (Area s.f.):

Existing facility will require modification (Area s.f.):

Projected renovation cost:

Estimated relocation cost:

Total funding required:

Source of Funding:

Construction of new facilities will be required (Area s.f.):

Estimated construction cost:

Estimated total project cost:

Proposed source of funding:

List any infrastructure impacts that the program will have (i.e., parking, power, HVAC, etc.) and indicated estimated cost and source of funding.

None

Other comments:

The proposed Master of Computer Science degree program with a concentration in data and knowledge systems will be the only such degree concentration offered in Georgia and one of only a handful across the country. The area of data and knowledge systems covers areas such as speech and vision recognition systems, expert systems, data storage systems, and information retrieval systems, such as online search engines. According to the U.S. Department of Labor (<http://www.bls.gov/oco/ocos042.htm>), "The rapid and widespread use of computers and information technology has generated a need for highly trained workers proficient in various job functions. These computer specialists include computer scientists, **database administrators**, and network systems and data communication analysts. Job tasks and occupational titles used to describe these workers evolve rapidly and continually, reflecting new areas of specialization or changes in technology, as well as the preferences and practices of employers."

Note: A system Facilities Project Manager may contact you with further questions separate from the review of the new academic program.

Appendix I: Course Descriptions

Computer Sciences (CIT)

CSCI 1230-Introduction to BASIC Programming 3-0-3

Basic concepts, logic and syntax of the BASIC programming language. Elementary programming techniques and algorithms. Topics include: variables, arithmetic operations, input/output, strings, GUI design, IF blocks, loop structures, subprograms, one- and two-dimensional arrays, file processing and applications. Prerequisites: Three hours of mathematics.

CSCI 1232-Introduction to FORTRAN Programming 3-0-3

Basic concepts, logic and syntax of the FORTRAN programming language. Elementary programming techniques and algorithms. Topics include: arithmetic operations, input/output, IF blocks, loop structures, subprograms, one- and two-dimensional arrays, file processing and applications. Prerequisites: Three hours of mathematics.

CSCI 1236-Introduction to Java Programming 3-0-3

Basic concepts, logic and syntax of the Java programming language. Elementary programming techniques and algorithms. Topics include: arithmetic operations, input/output, data types, variables, selection and control statements, applications, applets, strings and event-driven programming. Prerequisites: a minimum grade of "C" in MATH 1111 or equivalent.

CSCI 1301-Programming Principles I 3-2-4

Provides a fundamental understanding of the development of computer solutions to solve problems with emphasis on structured, top-down development and testing. Concepts include the following: an overview of computer system design, problem solving and procedural abstraction design of computer solutions, algorithm development using simple data types and control structures, implementation and testing of programmed problem solutions, design modularization using subprograms and structured and user-defined data types. Prerequisites: MATH 1111 or higher and a minimum grade of "C" in CSCI 12XX language or ENGR 1631.

CSCI 1302-Programming Principles II 3-0-3

A continuation of CSCI 1301. Emphasis is on advanced programming techniques such as recursion, data and responsibility driven design and implementation, GUI, and file processing techniques. Prerequisites: A minimum grade of "C" in CSCI 1301.

CSCI 2120-Computers, Ethics and Society 2-0-2

An investigation of issues related to the use of computers and computer technology including the following: computer ethics, professional standards, and social impact of computer applications. Some topics to be researched include: philosophical ethics, the application of ethical theory to situations involving computer technology, codes of conduct, privacy, data protection, employee privacy, data regulation, artificial intelligence, copyright/patent issues, computer malfunction liability, computer crime and responsibilities of computer users. Prerequisites: A minimum grade of "C" in CSCI 1301.

CSCI 2230-C++ Programming 3-0-3

Basic concepts, logic and syntax of the C++ programming language. Elementary programming techniques and algorithms, debugging. Topics include: arithmetic operations, input/output, data types, variables, functions, selection and repetition statements, arrays, strings and elementary file processing. Prerequisites: a minimum grade of "C" in MATH 1111 or equivalent.

CSCI 3230-Data Structures 3-0-3

Introduction to abstract data types such as lists, stacks, queues, and trees, and algorithm analysis. Prerequisites: Minimum grade of "C" in both CSCI 1302 and MATH 2130.

CSCI 3231-Logic Circuits & Microprocessors 2-2-3

Digital system and Logic Circuits Design. Topics include the study of the Logic gate, Boolean Functions representation and Minimization Combinational and Sequential logic circuits, Programmable Logic Arrays, Data Representation, RAM, ROM, and Cache Memories, Register Transfer Language and micro-operations, Hardware Description Language (VHDL), Microprocessor Organization and Design, Assembly Language, Computer Aided Design Tools and Field Programmable Gate Arrays. Corequisites: CSCI 1302.

CSCI 3232-Systems Software 3-0-3

Basic concepts of computer software systems, including operating systems, language translators, utilities, linkers and loaders. System component interfaces. User-level view of operating systems. Diverse programming language concepts and interfaces. Prerequisites: A minimum grade of "C" in CSCI 1302. Corequisites: CSCI 3230.

CSCI 3236-Theoretical Foundations 3-0-3

A study of languages, formal grammars, and abstract representations of computation. Prerequisites: A minimum grade of "C" in both MATH 2130 and CSCI 1302. Corequisites: CSCI 3230.

CSCI 4790-Special Problems/CO-OP (1 to 3)-0-(1 to 3)

Work experience in computer science through the CO-OP program. A student may enroll in this course more than once, but cumulative credit may not exceed three credit hours. Prerequisite: Acceptance as a CO-OP student in the area of computer science.

CSCI 4890-Directed Study in Computer Sciences (1 to 3)-0-(1 to 3)

Directed study under faculty supervision. Seminar, at least one hour to be used as student engagement in service work. Prerequisites: Permission of instructor and department chair.

CSCI 5090/5090G-Selected Topics in Computer Sciences (1 to 3)-(0 to 2)-(1 to 3)

Specialized study in a selected area of Computer Science. Prerequisite: Permission of instructor.

CSCI 5130/5130G-Data Management for Math and the Sciences 3-0-3

Topics in data management, including operating systems, word processing, spreadsheets, and database management and their applications to mathematics education. Intended primarily for those majoring in Mathematics and Mathematics Education. For those majoring or minoring in Computer Sciences, this course may not be used as an upper level Computer Science elective. Prerequisite: CSCI 1230 or permission of instructor.

CSCI 5230/5230G- Discrete Simulation 3-0-3

Introduction to discrete simulation models and their implementation on computers. Topics include modeling techniques, experiment design, analysis and validation of results. Students will be exposed to one or more computer simulation languages. Prerequisites: minimum grade of "C" in CSCI 3230 and STAT 2231 or permission of instructor.

CSCI 5232/5232G- Operating Systems 3-0-3

A study of functions and structures of operating systems. Emphasis will be placed on the management of files, processes, memory, and input/output devices of the Unix operating system. Prerequisite: minimum grade of "C" in both CSCI 3230 and 3232 or permission of instructor.

CSCI 5234/5234G-Parallel Processing 3-0-3

Fundamental concepts of parallel/distributed computing including architectures of parallel/distributed computing systems, as well as languages, algorithms, performance, and programming practice issues. Prerequisites: minimum grade of "C" in both CSCI 3230 and CSCI 3231 or permission of instructor.

CSCI 5330/5330G- Algorithm Design and Analysis 3-0-3

An in-depth study of the design, implementation, testing, and analysis of algorithms.

Prerequisites: CSCI 3236 and MATH 2242.

CSCI 5331G- Computer Architecture 2-2-3

Topics include the study of the Microprocessor Organization and Bus Structures, Complex Instruction Set Computer (CISC) Systems, Reduced Instruction Set, Computer (RISC) Systems, Micro-programmed Control and Controller Design, Concepts and Application of Embedded Systems, Pipeline and Vector processing, Input-Output Organization, Memory Organization, Parallel processor Architecture. Advanced topics related to Hardware-Software Co-design.

Prerequisite: a minimum grade of “C” in CSCI 3231 or permission of instructor. Corequisites: CSCI 3230.

CSCI 5332/5332G- Data Communications and Networking 3-0-3

Fundamental concepts of data communications including architecture models, protocol suites, network programming, signal and data transmissions, error detection, and performance analysis.

Prerequisites: minimum grade of “C” in CSCI 3232, CSCI 5331 and STAT 2231 or permission of instructor.

CSCI 5335/5335G- Object-Oriented Design 3-0-3

Introduction to concepts, methods, and current practice of object oriented design and analysis.

Topics include the study of the Unified Modeling Language (UML), which has become an industry standard notation. UML topics will include use cases, diagramming notation (class, object, sequence and object state diagrams, etc.). Students will use UML to design and implement individual and small group projects. Additional topics include understanding design patterns in building applications. Prerequisites: minimum grade of “C” in CSCI 3230.

CSCI 5430- Artificial Intelligence 3-0-3

Introduction to different paradigms for creating software that can reason, access a knowledge base, handle uncertainty, learn, communicate, perceive and act. Prerequisites: minimum grade of “C” in both CSCI 3230 and CSCI 5330 or permission of instructor.

CSCI 5432- Database Systems 3-0-3

The fundamental concepts of database management systems (DBMS) including logical and physical database organization, data models and design issues. Emphasis will be placed upon the relational data model including design and implementation using commercial database systems.

Prerequisites: a minimum grade of “C” in CSCI 3230 or permission of instructor.

CSCI 5434/5434G-Theory of Programming Languages 3-0-3

A study of the formal description, the abstraction and the features of modern programming languages. Various computational paradigms and corresponding languages are introduced.

Prerequisites: a minimum grade of “C” in both CSCI 3230 and CSCI 3236 or permission of instructor.

CSCI 5436- Distributed Web Systems Design 3-0-3

This course involves programming methodologies for the World Wide Web. Topics include:

Client-side programming, distributed transactions, remote procedure calls, component objects, server side programming and network load balancing. Prerequisites: a minimum grade of “C” in CSCI 5432 or permission of instructor.

CSCI 5530/5530G-Software Engineering 3-0-3

The course serves as a major integrative, capstone experience for students and requires teamwork. A study of the development and management of software; strategies and techniques of design, testing, documentation and maintenance. Prerequisites: a minimum grade of “C” in CSCI 5432, CSCI 5335 and CSCI 5330 or permission of instructor.

CSCI 7090-Selected Topics in Computer Science (1 to 3)-(0 to 2)-(1 to 3)

Specialized study in a selected area of Computer Science. Prerequisites: Permission of Instructor.

CSCI 7130- Artificial Intelligence - Theory and Application 3-0-3

Paradigms for creating software that can reason, access a knowledge base, handle uncertainty, learn, communicate, perceive and act. Prerequisites: a minimum grade of "B" in both CSCI 3230 and CSCI 3232 or permission of instructor.

CSCI 7132- Database Systems - Theory and Application 3-0-3

Course is focused on effective design and application of complex Database Systems, involving both traditional relational databases, object-relational databases, advanced rules and constraints, advanced SQL programming, data model validation, ontology based data modeling, contemporary semi-structured data modeling with XML Schema, and advances in SQL, XML, XML Schema, XQuery, and Data Modeling standardization. Review of advances in DB research and DB technology trends. Students will also act as practicing advisors to other students working on DB design projects. Prerequisites: A grade of "B" or better in both CSCI 3230 and CSCI 3232 or permission of the instructor.

CSCI 7136- Distributed Web Systems Design - Theory and Application 3-0-3

Client and server side programming, stateless client/server transactions, state maintainance, server side database transactions, Web project design methodologies, database design methodologies for distributed Web projects, testing methodologies, and Web systems project management concepts. Prerequisites: A grade of "B" or better in CSCI 7432 or permission of instructor.

CSCI 7140-Software Development and Machine Architecture 4-0-4

Software and hardware topics that include an object oriented language, web page construction, electric circuits, architecture, language translation, operating systems and networks. Primarily intended for those that are beginning a Masters Degree in Technology. Cannot be taken for credit by those earning a Masters Degree in Mathematics. Prerequisites: Enrollment in the Master of Technology degree program or permission of instructor.

CSCI 7230- Advanced Computer Architecture 3-0-3

Comparing different modern computer systems architecture and investigating their performances. Topics include: parallel computer systems, pipelining techniques, vector processor arrays, multiprocessor systems, data flow machines and fault-tolerant computer systems. Prerequisite: CSCI 5331 or permission of instructor.

CSCI 7232-Switching Theory 3-0-3

Introduction to sets, relations, lattices, and switching algebra. Minimization techniques. Special switching functions. Multivalued logics. Finite state automata. Hazard analysis, fault detection and correction. Testing and testability. Prerequisite: CSCI 5331 or permission of instructor.

CSCI 7330-Advanced Operating Systems 3-0-3

A study of functions and structures of distributed operating systems: communication, synchronization, file system, processes and memory management. Prerequisite: CSCI 5232 or permission of instructor.

CSCI 7332- Parallel Algorithms Design and Analysis 3-0-3

A study of parallel constructs for providing experiences in designing and analyzing parallel algorithms. Prerequisite: CSCI 5330 or permission of instructor.

CSCI 7334- Unix Network Programming 3-0-3

A study of UNIX interprocess communication protocols and how they can be used in programs. Prerequisite: CSCI 3232 or permission of instructor.

CSCI 7336-Broadband Communications 3-0-3

An in-depth study of the structures and principles of broadband networks. Major concepts and principles are explained along with their mathematical analysis. Prerequisite: CSCI 5332 and STAT 2231 or permission of instructor.

CSCI 7337- Optical Networks 3-0-3

An introduction to optical networks, their principles and systems, an understanding of the construction and organization of optical networks along with an in-depth study of the structures and requirements of lightwave-coherent systems. Major concepts and principles are covered along with their mathematical analysis. Prerequisites: CSCI 5332 and STAT 2231 or permission of instructor.

CSCI 7430- Advanced System Modeling and Simulation 3-0-3

Advanced study directed toward system and modeling theory, analysis, validation, verification techniques, simulation languages to model and analyze real systems. Prerequisite: CSCI 5230 or permission of instructor.

CSCI 7431-Distributed Database Systems 3-0-3

A study of distributed database architectures and system design, semantic data control, query processing, transaction management, concurrency control, distributed DBMS reliability, parallel DB systems, distributed object DB management systems, and database interoperability. Prerequisites: A minimum grade of "B" in both CSCI 7132 and CSCI 7136 or permission of instructor.

CSCI 7432-Algorithm Analysis and Data Structures 3-0-3

Advanced topics in algorithm design and analysis and data structures for implementing these algorithms. Problems considered from areas of information storage and retrieval, graph theory, cryptology and parallel processing. Prerequisites: CSCI 5330 or permission of instructor.

CSCI 7434- Data Mining 3-0-3

The application of concepts and techniques from information science, statistics, visualization, artificial intelligence, and machine learning for the purpose of extracting, integrating, and visualizing information and knowledge from large databases. Prerequisite: A minimum grade of "B" in CSCI 7130 and CSCI 7132 or permission of instructor.

CSCI 7435- Data Warehousing 3-0-3

Data warehousing design principles and technical problems inherent in complex industrial implementations using commercial software. Possible topics include: an introduction to data warehousing, multidimensional data modeling, data warehouse architectures, data warehouse design and implementations, development of data cube technology, organizing data warehousing projects, from data warehousing to data mining. Prerequisite: A minimum grade of "B" in CSCI 7132 or permission of instructor.

CSCI 7436- Internet Programming 3-0-3

Advanced design and implementations of large- scale Internet applications through the use of high and low level programming constructs. Possible topics include: client side scripting languages, middle – tier programming languages, middle-tier transaction servers, server-side data access, server-side scripting/programming, integrating applications within a network cluster, internet protocols and socket programming. Prerequisite: CSCI 5332 and CSCI 5432 or permission of instructor.

CSCI 7532- Advanced Software Engineering 3-0-3

The focus is the specification, modeling and prototyping of critical software systems/components. Topics selected from formal specification using Z and VDL, specifications

using UML with OCL for real- time systems. Structure, dynamic and constraint modeling, constraint/ performance [rate monotonic] analysis, concurrency, re-configuration and distribution, prototyping, reuse and integration issues, and component implementation using advanced tools with implementations styles such as Generic and Meta- Programming.

Prerequisite: CSCI 5530 or permission of instructor.

CSCI 7533- Requirements and Architecture 3-0-3

Software requirements and architecture evaluation using examples of complex software intensive systems. Product-line approach and the use of industry standards. Functional and object oriented approaches in complex domains

such as avionics, ground vehicles, medical devices, telecommunications. Students are expected to critically evaluate and develop architecture and requirements for sizable systems, functioning as lead architecture and requirements management. Prerequisite: CSCI 5530 or permission of instructor.

CSCI 7534- Testing and Measurement 3-0-3

Testing and Quantitative evaluation of software products and processes. Topics include: models, methods, standards and tools for testing, measurement and evaluation, test (defect) catalog and coverage testing of units, components, and subsystems. Integration, system acceptance testing and evaluations, test suits, regression testing and test automation. Prerequisite: CSCI 5530 or permission of instructor.

CSCI 7890- Directed Study in Computer Sciences (1 to 3)-(0 to 2)-(1 to 3)

Directed study under faculty supervision. Prerequisite: Permission of instructor and department chair.

CSCI 7899 – Research Project in Computer Sciences (1 to 6)-(0 to 4)-(1 to 6)

Research project addressed toward a real world problem. Prerequisite: Permission of project advisor and permission of department chair.

CSCI 7999 – Thesis (1 to 6)-0-(1 to 6)

Research project addressed toward a real world problem. Prerequisite: Permission of Graduate Program Director

Appendix II: ABET Criteria for Accrediting Computer Science Programs

I. Objectives and Assessments

Intent

The program has documented, measurable objectives, including expected outcomes for graduates. The program regularly assesses its progress against its objectives and uses the results of the assessments to identify program improvements and to modify the program's objectives.

Standards

- I-1. The program must have documented measurable objectives.
- I-2. The program's objectives must include expected outcomes for graduating students.
- I-3. Data relative to the objectives must be routinely collected and documented and used in program assessments.
- I-4. The extent to which each program objective is being met must be periodically assessed.
- I-5. The results of the program's periodic assessments must be used to help identify opportunities for program improvement.
- I-6. The results of the program's assessments and the actions taken based on the results must be documented.

II. Student Support

Intent

Students can complete the program in a reasonable amount of time. Students have ample opportunity to interact with their instructors. Students are offered timely guidance and advice about the program's requirements and their career alternatives. Students who graduate the program meet all program requirements.

Standards

- II-1. Courses must be offered with sufficient frequency for students to complete the program in a timely manner.
- II-2. Computer science courses must be structured to ensure effective interaction between faculty/teaching assistants and students in lower division courses and between faculty and students in upper division courses.
- II-3. Guidance on how to complete the program must be available to all students.
- II-4. Students must have access to qualified advising when they need to make course decisions and career choices.
- II-5. There must be established standards and procedures to ensure that graduates meet the requirements of the program.

III. Faculty

Intent

Faculty members are current and active in the discipline and have the necessary technical breadth and depth to support a modern computer science program. There are enough faculty members to provide continuity and stability, to cover the curriculum reasonably, and to allow an appropriate mix of teaching and scholarly activity.

Standards

- III-1. There must be enough full-time faculty members with primary commitment to the program to provide continuity and stability.
- III-2. Full-time faculty members must oversee all course work.
- III-3. Full-time faculty members must cover most of the total classroom instruction.
- III-4. The interests and qualifications of the faculty members must be sufficient to teach the courses and to plan and modify the courses and curriculum.
- III-5. All faculty members must remain current in the discipline.
- III-6. All faculty members must have a level of competence that would normally be obtained through graduate work in computer science.
- III-7. Some full-time faculty members must have a Ph.D. in computer science.
- III-8. All full-time faculty members must have sufficient time for scholarly activities and professional development.
- III-9. Advising duties must be a recognized part of faculty members' workloads.

IV. Curriculum

Intent

The curriculum is consistent with the program's documented objectives. It combines technical requirements with general education requirements and electives to prepare students for a professional career in the computer field, for further study in computer science, and for functioning in modern society. The technical requirements include up-to-date coverage of basic and advanced topics in computer science as well as an emphasis on science and mathematics.

Criteria for Accrediting Computer Science Programs

Standards

Curriculum standards are specified in terms of semester hours of study. Thirty semester hours generally constitutes one year of full-time study and is equivalent to 45 quarter hours. A course or a specific part of a course can only be applied toward one standard.

General

- IV-1. The curriculum must include at least 40 semester hours of up-to-date study in computer science topics.
- IV-2. The curriculum must contain at least 30 semester hours of study in mathematics and science as specified below under Mathematics and Science.

- IV-3. The curriculum must include at least 30 semester hours of study in humanities, social sciences, arts and other disciplines that serve to broaden the background of the student.
- IV-4. The curriculum must be consistent with the documented objectives of the program.

Computer Science

- IV-5. All students must take a broad-based core of fundamental computer science material consisting of at least 16 semester hours.
- IV-6. The core materials must provide basic coverage of algorithms, data structures, software design, concepts of programming languages, and computer organization and architecture.
- IV-7. Theoretical foundations, problem analysis, and solution design must be stressed within the program's core materials.
- IV-8. Students must be exposed to a variety of programming languages and systems and must become proficient in at least one higher-level language.
- IV-9. All students must take at least 16 semester hours of advanced course work in computer science that provides breadth and builds on the core to provide depth.

Mathematics and Science

- IV-10. The curriculum must include at least 15 semester hours of mathematics.
- IV-11. Course work in mathematics must include discrete mathematics, differential and integral calculus, and probability and statistics.
- IV-12. The curriculum must include at least 12 semester hours of science.
- IV-13. Course work in science must include the equivalent of a two-semester sequence in a laboratory science for science or engineering majors.
- IV-14. Science course work additional to that specified in Standard IV-13 must be in science courses or courses that enhance the student's ability to apply the scientific method.

Additional Areas of Study

- IV-15. The oral communications skills of the student must be developed and applied in the program.
- IV-16. The written communications skills of the student must be developed and applied in the program.
- IV-17. There must be sufficient coverage of social and ethical implications of computing to give students an understanding of a broad range of issues in this area.

V. Laboratories and Computing Facilities

Intent

Laboratories and computing facilities are available, accessible, and adequately supported to enable students to complete their course work and to support faculty teaching needs and scholarly activities.

Standards

- V-1. Each student must have adequate and reasonable access to the systems needed for each course.
- V-2. Documentation for hardware and software must be readily accessible to faculty and students.
- V-3. All faculty members must have access to adequate computing facilities for class preparation and for scholarly activities.
- V-4. There must be adequate support personnel to install and maintain the laboratories and computing facilities.
- V-5. Instructional assistance must be provided for the laboratories and computing facilities.

VI. Institutional Support and Financial Resources

Intent

The institution's support for the program and the financial resources available to the program are sufficient to provide an environment in which the program can achieve its objectives. Support and resources are sufficient to provide assurance that the program will retain its strength throughout the period of accreditation.

Standards

- VI-1. Support for faculty must be sufficient to enable the program to attract and retain high-quality faculty capable of supporting the program's objectives.
- VI-2. There must be sufficient support and financial resources to allow all faculty members to attend national technical meetings with sufficient frequency to maintain competence as teachers and scholars.

2005-2006 Criteria for Accrediting Computer Science Programs

- VI-3. There must be support and recognition of scholarly activities.
- VI-4. There must be office support consistent with the type of program, level of scholarly activity, and needs of the faculty members.
- VI-5. Adequate time must be assigned for the administration of the program.
- VI-6. Upper levels of administration must provide the program with the resources and atmosphere to function effectively with the rest of the institution.
- VI-7. Resources must be provided to acquire and maintain laboratory facilities that meet the needs of the program.
- VI-8. Resources must be provided to support library and related information retrieval facilities that meet the needs of the program.
- VI-9. There must be evidence that the institutional support and financial resources will remain in place throughout the period of accreditation.

VII. Institutional Facilities

Intent

Institutional facilities including the library, other electronic information retrieval systems, computer networks, classrooms, and offices are adequate to support the objectives of the program.

Standards

- VII-1. The library that serves the computer science program must be adequately staffed with professional librarians and support personnel.
- VII-2. The library's technical collection must include up-to-date textbooks, reference works, and publications of professional and research organizations such as the ACM and the IEEE Computer Society.
- VII-3. Systems for locating and obtaining electronic information must be available.
- VII-4. Classrooms must be adequately equipped for the courses taught.
- VII-5. Faculty offices must be adequate to enable faculty members to meet their responsibilities to students and for their professional needs.

Dr. Dick Diebolt explained that one of the Graduate Committee's concerns in the September meeting was related to the 5000G courses in the original proposal. He stated that the College of Information Technology has reconsidered the courses and have submitted three revised courses and three new courses for the Graduate Committee to consider.

Dr. Jim Harris distributed two handouts to the committee. One included the Committee's recommendations from the September meeting with responses from the department. The other was email correspondence between himself and Dr. Yan Wu, the Department of Mathematical Science's Program Director.

**Recommendations to the Computer Science Department
From the September 10, 2009 Graduate Committee Meeting:
Regarding the Master of Science in Computer Science
New Program Proposal**

- 1. Address the concern raised about the impact of the graduate program on the undergraduate program. How can the program be implemented without negatively impacting the undergraduate program? Rethink how the narrative is written. (Added part time temps to fall 2010 and spring 2011 to teach two sections in Fall and four sections in Spring. Added a part time temp to teach an extra course in the Spring. There is now no increase in faculty teaching loads or any change in the undergraduate offerings)**
- 2. Provide a more realistic and detailed budget that reflects how current resources will be expended to support the program, what new resources will be needed, and how these expenditures will be financially supported? The narrative needs to better explain the impact of the proposed program on current resources (including faculty). Explained how the addition of the part time temp would not increase current faculty teaching loads. Explained the extra work needed to be done through the admissions process and advisement. Added a stipend for a graduate director.**
- 3. Confirm discussions with the Library that describes library resources that will be used or needed to support the program and can meet accreditation standards as needed and a budget of the items. Met with Bob Fernekes, Lili Li, and Jonathan Harwell on 9/18/2009 and discussed how to proceed with library resources. Received email from**

Lili confirming the discussions. Added a \$6,600 line item to the budget to cover unforeseen future library expenses.

4. Provide a summary to be shared with the Graduate Committee of discussions between the Computer Science and Mathematics Departments regarding:
 - a. the development of the MS in Computer Science and how it will affect the MS in Mathematics-Computer Science concentration.
 - b. Whether or not the Computer Science concentration in the MS – Mathematics program would be dropped.

Met with the Math graduate director Yan Wu on 9/17 and discussed the impact of our program on the Math grad program. Have an email confirming the meeting and that it is the intention of the Math department to phase out their Math/CS option.

5. Address the concern raised regarding having three 5000G courses comprising the core requirements of the program of study. How will these courses truly be graduate level work? If the intent (as explained by the department chair) is not to allow undergraduate students to enroll, then why hasn't the program developed 6000 or 7000 level courses for the core requirements of the degree program?

Have the course change forms ready to change all core classes from 5000 level to 7000 level.

Dr. McMillan asked how the College was able to add a stipend for a graduate director. Dr. Robert Cook explained that their College allows in state tuition to be the same as out of state and out of country tuition rates. Therefore, the College receives the additional revenue that is generated from those students. He also stated that the suggestions improved the courses. Dr. Cook explained that when the course numbers were changed, they firmed up the content of the proposal and how everything would function more smoothly. He shared that the Graduate Committee's recommendations made the Masters of Computer Science proposal a better program.

Dr. Flynn asked if the 5000 level courses were in place for undergraduates, or if they were just created for this proposal. Dr. Diebolt stated that the three new courses would become the programs core to replace the 5000G courses in the previous proposal and the three revised courses would be in the program concentration. Dr. Flynn also asked if the 5000G level course in the pervious proposal would remain in the course inventory. It was indicated that the courses would since they are courses taken by graduate students in other degree programs.

MOTION: Dr. Flynn made a motion to approve the College of Information Technology submissions. A second was made by Dr. McMillan. The motion to approve the New Courses, Course Revisions, and the Masters of Computer Science program was approved.

B. SUBCOMMITTEE REPORTS & UPDATES

- i. **Vision For Graduate Education (BluePrint Ad Hoc Committee)** – Mr. Harwell distributed the latest draft, Version 8.3, of the Vision for Graduate Education. He explained that the revisions were based on feedback the Ad Hoc Subcommittee received from Deans and Faculty. Mr. Harwell shared that the Ad Hoc Subcommittee would remain in place to develop a Level 2 document, with the proposed name "Statement of Recommendations to the Graduate Committee". This document would include action items and/or specific principles which have been discussed by the Ad Hoc Subcommittee, some of which have arisen from the recent feedback from Deans and Faculty, and which are beyond the scope of a vision statement. He clarified that these are two different documents that will be voted on separately. The subcommittee hopes to

have the Level 2 document available to the Graduate Committee soon for them to review. Mr. Harwell stated that they will continue to accept feedback on the Vision for Graduate Education draft, and hopes for a vote on this draft at the November Graduate Committee meeting.

Dr. Fernekes added if anyone would like to join the Ad Hoc Subcommittee for them to notify Mr. Harwell.

A VISION FOR GRADUATE EDUCATION

GEORGIA SOUTHERN UNIVERSITY

DRAFT VERSION 8.3

OCTOBER 2009

INTRODUCTION:

The goals of graduate education at Georgia Southern University are to provide a learning environment which fosters creative thinking in the minds of our students, and to produce graduates who improve and enrich society. As stated in Georgia Southern's mission, our programs "prepare a diverse and select undergraduate and graduate student population for leadership and service as world citizens. Faculty, staff, and students embrace core values expressed through integrity, civility, kindness, collaboration, and a commitment to lifelong learning, wellness, and social responsibility."

Our academic distinction arises from the quality and integrity of our programs. A graduate degree from Georgia Southern is a valued statement of this distinction, as such degrees are earned only by those individuals who have achieved the standards of this community of learners.

MAINTAINING INTEGRITY AND QUALITY

The hallmarks of graduate education at Georgia Southern University are integrity and quality. Increasing enrollment must be met with resources to improve programs.

We maintain our *integrity* when we have students who are qualified to earn graduate degrees, who are taught by graduate faculty who are qualified to teach in graduate programs. This is accomplished by only accepting qualified students and qualified faculty. The graduate faculty within each college may define additional standards for qualified students and qualified faculty, thus empowering the college faculty in strengthening their graduate programs according to their needs.

In the future, there may be more students in online graduate programs than in traditional graduate programs. This is because there are a finite number of students who can come to the Georgia Southern campus. However, online education is not and should not be more important to Georgia Southern University than face-to-face graduate education. Faculty should be provided with the resources they need in order to sustain the high quality of graduate education at Georgia Southern, regardless of the method of delivery. A logical evolution toward online delivery is expected in some, but not all, programs.

We maintain our *quality* through the use of qualitative measures, including student evaluations of faculty; uniqueness of courses and programs; teaching methods; and the quality of scholarship of students and faculty. While COGS' mission includes

developing, reviewing, and assessing graduate policies and programs, college-level responsibilities include assessing the dispositions of incoming and outgoing students; assessing the programs internally; providing internship programs; maintaining accreditations; providing qualified faculty; planning appropriate student/faculty ratios; delivering cutting-edge practices; and distributing an appropriate workload/teaching load.

These high-quality graduate programs should be provided with the resources needed to sustain them. Such investments in graduate education are vital to maintaining integrity and quality. For example, some of the funds from the e-tuition rate for online courses should flow back to departments and to Henderson Library, in order to directly support the needs of growing programs.

CULTIVATING OUR GRADUATE CULTURE

As one step in the university's development as a doctoral-research university, Georgia Southern needs to identify and develop the values which support its graduate programs. In the effort to meet our goal to cultivate a distinct graduate culture, we should ensure that the graduate programs at Georgia Southern are effective, creative, and cutting-edge.

The growth of a graduate culture also includes the belief that the graduate student body is capable of and invested in developing critical thinking and analytical skills, intellectual curiosity, effective interpersonal skills, and professional dispositions appropriate to the program, the university, and a global society. Graduate programs should be designed to inspire students to not only attain a high level of professional training, but to develop a graduate mindset regarding research and contribution to one's profession.

A commitment to multicultural awareness and knowledge is integral to sustainable graduate programs. Abiding by diversity-oriented and ethical policies and procedures will contribute to the growth of open, inquiry-based learning. Programs must remain motivated to sustain academic rigor and provide a transformative educational experience.

By fostering a strong bond with the undergraduate culture, it is important that each college create a graduate experience which best reflects each college's unique and vibrant mission and strengths.

Overall, graduate education at Georgia Southern University shall:

- ◆ Offer programs which are of high quality, consistent with the overall mission of the university, and which build upon existing strengths;
- ◆ Be responsive and supportive;
- ◆ Have an efficient, timely and transparent admission process, which is committed to continuous assessment and improvement; and
- ◆ Have an open and welcoming environment for all people, so that students, staff, and faculty feel valued, respected, and appreciated.

DEFINING OUR VISION AND MISSION

The vision and mission of the Averitt College of Graduate Studies at Georgia Southern University shall be compatible with the University's Strategic Plan and student-centered focus, as well as the Board of Regents' Strategic Plan and Goals for Graduate Education. It is important that each college create a graduate portfolio to reflect that college's unique and vibrant mission and strengths.

VI. ANNOUNCEMENTS

Dr. Fernekes announced that there would be another SharePoint demonstration, by Mr. Harwell and Mrs. Audie Graham, at the November 12th meeting to update the committee on the SharePoint site structure.

Dr. McMillan asked if there is a Graduate Fair coming up. Dr. Diebolt said that the Graduate School Fair is in November and that it is sponsored by Career Services. He explained that the College of Graduate Studies will pay the registration fee for all departments who would like to participate in the Fair. Dr. Diebolt stated that a reminder email would be sent out to the Graduate Committee, Program Directors and Coordinators with the details.

VII. ADJOURNMENT

There being no further business, the meeting was adjourned on October 8, 2009 at 10:10 AM.

Respectfully submitted,

Audie Graham, Recording Secretary

Minutes were approved October 20, 2009 by electronic vote of Committee Members
