



Course Approval Form

For approval of new courses and deletions or modifications to an existing course.

registrar.gmu.edu/facultystaff/curriculum

Action Requested:

Create new course Inactivate existing course

Modify existing course (check all that apply)

Title Credits Repeat Status Grade Type

Prereq/coreq Schedule Type Restrictions

Other: _____

Course Level:

Undergraduate

Graduate

College/School: Department:

Submitted by: Ext: Email:

Subject Code: Number: Effective Term: Fall Spring Summer

(Do not list multiple codes or numbers. Each course proposal must have a separate form.) Year

Title: Current

Banner (30 characters max including spaces)

New

Credits: (check one) Fixed Variable or to

Repeat Status: (check one) Not Repeatable (NR) Repeatable within degree (RD) Repeatable within term (RT) Maximum credits allowed:

Grade Mode: (check one) Regular (A, B, C, etc.) Satisfactory/No Credit Special (A, B C, etc. +IP)

Schedule Type: (check one) Lecture (LEC) Lab (LAB) Recitation (RCT) Internship (INT)

Independent Study (IND) Seminar (SEM) Studio (STU)

Prerequisite(s):

Corequisite(s):

Instructional Mode:

100% face-to-face

Hybrid: ≤ 50% electronically delivered

100% electronically delivered

Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code.

Are there equivalent course(s)?

Yes No

If yes, please list _____

Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	Notes (List additional information for the course)

Indicate number of contact hours: Hours of Lecture or Seminar per week: Hours of Lab or Studio:

When Offered: (check all that apply) Fall Summer Spring

Approval Signatures

Department Approval _____ Date _____ College/School Approval _____ Date _____

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

For Graduate Courses Only

Graduate Council Member _____ Provost Office _____ Graduate Council Approval Date _____

Course Proposal Submitted to the Curriculum Committee of the College of Science

1. COURSE NUMBER AND TITLE: CSI 695 Scientific Databases

Course Prerequisites: INFS 614 or equivalent, or permission of instructor.

Catalog Description: Study of database support for scientific data management. Covers requirements and properties of scientific databases, data models for statistical and scientific databases, semantic and object-oriented modeling of application domains, statistical database query languages and query optimization, advanced logic query languages, and case studies such as the human genome project and Earth-orbiting satellites.

Rationale for number change: By lowering the number to the 600-level courses, undergraduate students, primarily those in accelerated master programs, can register and take advantage of the content that the course brings to their programs. The catalog listed equivalence to the now inexistent IT 864 course should be removed to make the curriculum current.

2. COURSE JUSTIFICATION:

Course Objectives: This is a required core course in the COMP masters and CSI PhD. It is a fundamental course for these two academic programs. There is no change in the objectives.

Course Necessity: The course is required. No change in the necessity by changing its number.

Course Relationship to Existing Programs: This is a required core course

Course Relationship to Existing Courses: Catalog needs to be corrected by eliminating “Equivalent to IT 864” because that course has been eliminated.

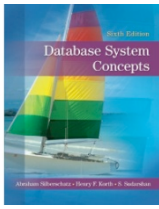
3. APPROVAL HISTORY:

4. SCHEDULING AND PROPOSED INSTRUCTORS: The course new number will be corrected in all courses where it enters as a prerequisite.

Semester of Initial Offering with New Number: Fall 2013

Proposed Instructors: Kirk Borne

5. TENTATIVE SYLLABUS: see the existing CSI710 syllabus below



CSI 710
Scientific Databases
Fall Semester 2012
Online (Distance Ed) Course



- *******IMPORTANT NOTE:** Last Day to Add Classes = September 4, 2012.
 - **Course Syllabus Website:** <http://classweb.gmu.edu/kborne/csi710fall2012/>
 - **Supplemental Syllabus Information:**
 - Disability Services, Counseling Services, Other Campus Resources, University Policies, and more: <http://classweb.gmu.edu/kborne/supplemental-syllabus-information.htm>
 - Academic Skills Workshops - Academic Year 2012-2013: <http://caps.gmu.edu/learningservices/workshops.php>
 - Hours of Operation for Campus Offices and Services - Fall 2012: <http://www.gmu.edu/resources/welcome/fallhours.html>
 - Academic Calendars (Semester Calendar, Final Exam Schedule): <http://registrar.gmu.edu/calendars/>
 - **Honor Code:**
 - Instructors may submit Exam Papers, Homework solutions, or any other student assignment to either the TurnItIn.com or the SafeAssign plagiarism-detection services, in compliance with all of the following: GMU policy, Provost approval, and the [GMU Honor Code](#).
 - [Plagiarism](#) will not be tolerated.
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- **Online Course Material:** This course is taught entirely online. There will be assignments, activities, and discussion topics each week! Please log into <http://mymason.gmu.edu/> at least two times each week to participate in the required weekly activities, to get announcements, to read weekly lecture slides, to view any videos from the instructor, and to complete your online assignments. The class week will begin on Wednesday mornings, and will conclude on Tuesday evenings. Assignments for a given week must be submitted within that week's time window, unless prior arrangements have been made with the instructor.
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- **Fall 2012 Course Details:** <http://classweb.gmu.edu/kborne/csi710/csi710syllabusFall2012details.htm>
 - **Reading Assignments (*LAST UPDATED August 24, 2012*) (subject to change):** http://classweb.gmu.edu/kborne/csi710/csi710_reading_assignments.htm
 - **Group Projects:**
 - Activities (including group email discussions) must be documented online within your assigned discussion group at <http://mymason.gmu.edu/>.
 - Group membership will be decided early in the semester, based upon class interests and individual choices.
 - Group Discussion Groups will be created in MyMason.gmu.edu only after your topics and group members are selected (by you!).
 - **Lecture Day/Time:** **NO SPECIFIC TIME** -- This is an asynchronous distance education course, taught entirely online. *Asynchronous* means that you may complete your weekly activities at any time that you choose during that week. (see <https://patriotweb.gmu.edu/>)
 - **Lecture Place:** **This course is taught entirely online** via MyMason.gmu.edu.
 - **Exams: only one exam -- Final Exam:** instructions will be announced.
 - **Grading:**
 - 30% = Homework and Class Participation
 - 20% = Research Project Team Paper (including peer evaluation)
 - 20% = Research Project Team Presentation (including peer evaluation)
 - 30% = Final Exam

- **Course Instructor:** [Dr. Kirk Borne](#), Professor of Astrophysics and Computational Science
 - Office: [Research Hall](#), Room 357, phone 703-993-8402 (with voicemail)
 - Office Hours: **by appointment**
 - Instructor's Travel Schedule: <http://classweb.gmu.edu/kborne/travel-schedule.htm>
 - E-Mail: [kborne\(at\)gmu\(dot\)edu](mailto:kborne(at)gmu(dot)edu) (Students: <http://masonlive.gmu.edu/>) (Faculty: <https://mail.gmu.edu/>)
 - Mailbox: Mailstop 6A2, Research Hall.
- **Required Textbook:**
 - Korth, Silberschatz, & Sudarshan, [Database System Concepts](#). McGraw-Hill, 2010 (**6th edition**). ISBN: 9780073523323.
- **Optional Supplemental Reading:**
 - Rotem & Shoshani, [Scientific Data Management: Challenges, Technology, and Deployment](#). Chapman & Hall, 2009. ISBN: 9781420069808.
 - Hey, Tansley, & Tolle, [The Fourth Paradigm: Data-Intensive Scientific Discovery](#). Microsoft Research, 2009. ISBN: 9780982544204.
 - Daconta, Obrst, & Smith, [The Semantic Web: A Guide to the Future of XML, Web Services, and Knowledge Management](#). Wiley, 2003. ISBN: 0-471-43257-1.
- **Technology Requirements:**
 - Access to Internet. Active user accounts on myMason.gmu.edu and on <http://masonlive.gmu.edu/>.
- **Course Description (from [GMU course catalog](#)):**
 - **(3 credits) Study of database support for scientific data management. Covers requirements and properties of scientific databases, data models for statistical and scientific databases, semantic and object-oriented modeling of application domains, statistical database query languages and query optimization, advanced logic query languages, and case studies such as the human genome project and Earth-orbiting satellites.**
- **Prerequisites:**
 - ***For non-COS students only*** : INFS 614 (Database Management), or equivalent, or permission of instructor.
- **Course Objectives:**
 - to analyze database and data management concepts and technologies that benefit scientific research;
 - to become familiar with a variety of large scientific database projects -- goals & implementation;
 - to become capable in using database and data management techniques to solve scientific problems; and
 - to acquire knowledge in database and data management techniques that will enable the student to progress to more advanced courses, research projects, and employment opportunities that require database skills and science data management capability.

Author: [Kirk D. Borne](#)
 Last Update: 24-August-2012