REQUEST TO COLLEGE CURRICULUM COMMITTEE FOR CURRICULAR IMPROVEMENTS

DEPARTMENT: CS   **PROPOSED EFFECTIVE SEMESTER:** Spring 2015   **COLLEGE:** CEAS

PROPOSED IMPROVEMENTS

Academic Program
- ☐ New degree*
- ☐ New major*
- ☐ New curriculum*
- ☐ New concentration*
- ☐ New certificate
- ☐ New minor
- ☐ Revised major
- ☐ Revised minor
- ☐ Admission requirements
- ☐ Graduation requirements
- ☐ Deletion ☐ Transfer
- ☐ Other (explain**)

Substantive Course Changes
- ☐ New course
- ☒ Pre or Co-requisites
- ☐ Deletion (required by others)
- ☐ Course #, different level
- ☐ Credit hours
- ☐ Enrollment restriction
- ☐ Course-level restriction
- ☐ Prefix ☒ Title and description
  (attach current & proposed)
- ☐ General education (select one)
  Not Applicable
- ☐ Other (explain**)

Misc. Course Changes
- ☐ Title
- ☐ Description (attach current & proposed)
- ☐ Deletion (not required by others)
- ☐ Course #, same level
- ☐ Variable credit
- ☐ Credit/no credit
- ☐ Cross-listing
- ☐ COGE reapproval
- ☒ Other (explain**)

** **Other:** A minimum grade of B in the prerequisite courses

Title of degree, curriculum, major, minor, concentration, or certificate:

Existing course prefix and #: CS6430 **Proposed course prefix and #:**   **Credit hours:**

Existing course title: Advanced Data Base Management Systems
Proposed course title: Database Management System Implementation

Existing course prerequisite & co-requisite(s): CS 3310 or CS 4310, and CS 5430
Proposed course prerequisite(s) : CS5430 or CS5541
    If there are multiple prerequisites, connect with "and" or "or". To remove prerequisites, enter "none."
Proposed course co-requisite(s)
    If there are multiple corequisites, they are always joined by "and."
Proposed course prerequisite(s) that can also be taken concurrently:
Is there a minimum grade for the prerequisites or corequisites?
    A minimum grade of B in the prerequisite courses.
Major/minor or classification restrictions:
    List the Banner 4 character codes and whether they should be included or excluded.
For 5000 level prerequisites & corequisites: Do these apply to: (circle one) undergraduates   graduates   both

Specifications for University Schedule of Classes:
a. Course title (maximum of 30 spaces): Database Management System Implementation
b. Multi-topic course: ☒ No   ☐ Yes
c. Repeatable for credit: ☒ No   ☐ Yes
d. Mandatory credit/no credit: ☒ No   ☐Yes
e. Type of class and contact hours per week (check type and indicate hours as appropriate)
    1. ☒ Lecture   3. ☐ Lecture/lab/discussion   5. ☐ Independent study
    2. ☐ Lab or discussion   4. ☐ Seminar or ☐ studio   6. ☐ Supervision or practicum

CIP Code (Registrar's use only): _____

Chair/Director _~~signature~~_   Date 2/27/15

Chair, College Curriculum Committee _____   Date _____

Dean _____ Date: _____ Graduate Dean: _____   Date _____

Curriculum Manager: Return to dean ☐ Date _____ Forward to: _____   Date _____

Chair, COGE/ PEB / FS President _____   Date _____

FOR PROPOSALS REQUIRING GSC/USC REVIEW:

* ☐ Approve ☐ Disapprove | Chair, GSC/USC   Date _____

* ☐ Approve ☐ Disapprove | Provost   Date _____

1. Explain briefly and clearly the proposed improvement.

   This proposed improvement is to make the following changes to CS6430 (Advanced Data Base Management Systems): (1) change its title to "Database Management System Implementation", (2) change the prerequisite from CS 3310 or CS 4310, and CS 5430, to CS5541 or CS5430, and (3) change the catalog description to "A study of implementation techniques in database management systems. Topics include database system architecture, file organization and access methods, indexing, buffer management, performance analysis, query processing and optimization, concurrency control, transaction management, reliability, recovery, physical design and database tuning. Other topics include data warehousing, distributed and parallel databases." from its current description "An in-depth study of data base management systems with concentration on efficient design and usage. Topics covered include: the design of data models, the theory of relational data bases, query optimization, protocols to guarantee consistency of data bases, the design of physical models, and performance analysis techniques. Algorithms and data structures such as B-trees, transposed files, phantom files and hybrid structures are also studied. Distributed data bases, data base machines and current query languages will be covered."

   A minimum grade of B in the prerequisite courses.

2. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.)

   - Title. The new course title specifically tells what this course is about. It gives students more information about this course.
   - Prerequisites: CS5541 is a new foundation course that is required for all graduate students. It serves better as a prerequisite than lower-level courses.
   - Description: The current description contains topics that are no longer being taught. The new description gives more accurate information regarding current teaching of the course.

3. Effect on other colleges, departments or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.

   None.

4. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.

   The new prerequisite is revised in line with the recent graduate program reform, which created foundation courses for graduate students.

5. Effects on enrolled students: Are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time. If a required course will be offered during summer only, provide a rationale.

   With a new course title, perspective students will have a better understanding of what they expect to learn from the course.

6. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?

   No change.

7. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? How often will course(s) be offered? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)

   None.

8. General education criteria. For a general education course, indicate how this course will meet the criteria for the area or proficiency. (See the General Education Policy for descriptions of each area and proficiency and the criteria. Attach additional pages as necessary. Attach a syllabus if (a) proposing a new course, (b) requesting certification for baccalaureate-level writing, or (c) requesting reapproval of an existing course.) N/A

9. List the learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program. N/A

10. Describe how this curriculum change is a response to assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities. N/A

11. (Undergraduate proposals only) Describe, in detail, how this curriculum change affects transfer articulation for Michigan community colleges. For course changes, include detail on necessary changes to transfer articulation from Michigan community college courses. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section. N/A

Current catalog description

CS 6430 - Advanced Data Base Management Systems

An in-depth study of data base management systems with concentration on efficient design and usage. Topics covered include: the design of data models, the theory of relational data bases, query optimization, protocols to guarantee consistency of data bases, the design of physical models, and performance analysis techniques. Algorithms and data structures such as B-trees, transposed files, phantom files and hybrid structures are also studied. Distributed data bases, data base machines and current query languages will be covered.

Prerequisites/Corequisites: Prerequisites: CS 3310 or CS 4310, and CS 5430.

Credits: 3 hrs.

Notes: Open to Graduate Students Only.

Proposed catalog description

CS 6430 - Database Management System Implementation

A study of implementation techniques in database management systems. Topics include database system architecture, file organization and access methods, indexing, buffer management, performance analysis, query processing and optimization, concurrency control, transaction management, reliability, recovery, physical design and database tuning. Other topics include data warehousing, distributed and parallel databases." from its current description "An in-depth study of data base management systems with concentration on efficient design and usage. Topics covered include: the design of data models, the theory of relational data bases, query optimization, protocols to guarantee consistency of data bases, the design of physical models, and performance analysis techniques. Algorithms and data structures such as B-trees, transposed files, phantom files and hybrid structures are also studied. Distributed data bases, data base machines and current query languages will be covered.

Prerequisites/Corequisites: Prerequisites: CS5430 or CS5541

Credits: 3 hrs.

Notes: Open to Graduate Students Only.