

CEAS-14-CS-069

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 C in the prerequisites.

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

Existing course prefix and #: CS5270 **Proposed course prefix and #:** **Credit hours:**

Existing course title: Theory of Computer Graphics

Proposed course title: Computer Graphics

Existing course prerequisite & co-requisite(s): CS 3310 and (MATH 2300 or MATH 3740)

Proposed course prerequisite(s) CS3310

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 C in the prerequisites.

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):

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. <input type="checkbox"/> Lecture | 3. <input type="checkbox"/> Lecture/lab/discussion | 5. <input type="checkbox"/> Independent study |
| 2. <input type="checkbox"/> Lab or discussion | 4. <input type="checkbox"/> Seminar or <input type="checkbox"/> studio | 6. <input type="checkbox"/> Supervision or practicum |

CIP Code (Registrar's use only):

Chair/Director

Date

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 CS5270 (Theory of Computer Graphics): (1) change title to Computer Graphics, (2) change the prerequisite from CS 3310 and (MATH 2300 or MATH 3740) to CS3310, and (3) change the catalog description to "An introduction to modern computer graphics systems. Topics covered include graphics hardware, two- and three-dimensional geometry and transformations, rendering, shading, texturing, raster and vector graphics, and modeling with curves and surfaces. Students will learn basic concepts and techniques in interactive computer graphics with emphasis on modern graphics programming."

A minimum grade of C in the prerequisite courses.

2. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify those, too.)
 - Title. Since the current teaching covers not only the theory but also the practical technology of modern computer graphics, it is no longer appropriate to emphasis on theory only in the course title.
 - Prerequisites. With more emphasis on practical aspect of computer graphics, CS 3310 (Data and File Structures) provides sufficient background for students to study this subject. The required math prerequisites (vector space, matrix addition and multiplication) can be quickly introduced in one class. Math 2300 or Math 3740 is no longer required.
 - Description. The current description, "A first course in the design of interactive computer graphics systems. Currently available hardware and software systems are described. Emphasis is on theoretical considerations in the design of interactive computer graphics software systems", puts emphasis on theory without mentioning other major topics of current teaching. The revised description lists the topics and emphasizes the importance of programming.
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 prospective students will have a better understanding of what they expect to learn from the course.
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 the removal of unnecessary prerequisites, more students can take 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

Attachment: Current and Proposed Catalog Descriptions

The current catalog description: [http://catalog.wmich.edu/preview_course_nopop.php?catoid=19&coid=42957]

CS 5270 – Theory of Computer Graphics

A first course in the design of interactive computer graphics systems. Currently available hardware and software systems are described. Emphasis is on theoretical considerations in the design of interactive computer graphics software systems.

Prerequisites/Corequisites: Prerequisites: CS 3310 and (MATH 2300 or MATH 3740).

Credits: 3 hrs.

Notes: Open to Upperclass and Graduate Students. Undergraduates with junior or senior status who have met the specific course Prerequisites or have the permission of the instructor may enroll in 5000-level courses.

The proposed catalog description:

CS 5270 – Computer Graphics

An introduction to modern computer graphics systems. Topics covered include graphics hardware, two- and three-dimensional geometry and transformations, rendering, shading, texturing, raster and vector graphics, and modeling with curves and surfaces. Students will learn basic concepts and techniques in interactive computer graphics with emphasis on modern graphics programming.

Prerequisites/Corequisites: Prerequisite: CS 3310.

Credits: 3 hrs.

Notes: Open to Upperclass and Graduate Students. Undergraduates with junior or senior status who have met the specific course Prerequisites or have the permission of the instructor may enroll in 5000-level courses.