



1. Explain briefly and clearly the proposed improvement.

This proposed improvement is to revise the catalog description to the following: "The design and implementation of programming language translation. Topics include: lexical analysis, parsing, intermediate representations and code generation. A major project is required."

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.)

The current description, "Introduction to major aspects of compiler design. These include lexical analysis, parsing, and translation. Each student will implement a small compiler using modern compiler writing tools", has the following problems:

- The focus of the course is not the explanation of the compiler itself, but rather the fundamental techniques that enable translation of programs.
- Translation is not an appropriate topic as it represents the overall focus of the course. Instead, the main topics should include intermediate representations and code generation.
- Instructors should have freedom to assign different projects. A fixed project on small compiler implementation is not flexible and facilitates plagiarism of previous years' assignment.

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.

No change.

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

## CS 5810 - Compiler Design and Implementation

---

Introduction to major aspects of compiler design. These include lexical analysis, parsing, and translation. Each student will implement a small compiler using modern compiler writing tools.

**Prerequisites/Corequisites:** Prerequisite: CS 4800 or CS4850 or CS 5800.

**Credits:** 3 hrs.

## CS 5810 - Compiler Design and Implementation

---

The design and implementation of programming language translation. Topics include: lexical analysis, parsing, intermediate representations and code generation. A major project is required.

**Prerequisites/Corequisites:** Prerequisite: CS 4800 or CS4850 or CS 5800.

**Credits:** 3 hrs.