

**A Brief Guide to Good Teaching Practices  
and  
Guidelines for the Assessment of Teaching  
Potential of New Temporary and Tenure-Track  
Faculty Members**

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## Introduction

The Department of Civil and Environmental Engineering at Michigan State University is continually seeking to improve the quality of its instructional program, especially through the selection and development of its faculty. As part of these efforts, the department has already instituted a mentoring program wherein new faculty are paired with their established senior colleagues. This is so, for example, the new faculty member has easy and informal access for day-to-day questions that may come up with respect to teaching- and research-related activities. Consistent with encouraging teaching-related mentoring, the department has adopted the guide to good teaching practices, which follows below. The guide is also a response to questions posed by several first-time instructors regarding “standard practices” within the department. It is further hoped that this document and the materials in the appendices will be of assistance to both the department’s temporary and full-time teaching faculty.

The department has also adopted a set of guidelines for the assessment of the teaching potential of new temporary and tenure-track faculty members. These guidelines are intended to elevate the consideration of teaching potential, capabilities, and/or credentials to the same level as the research-oriented evaluation, which has traditionally occurred.

The primary purpose of these materials is the further development of excellence in teaching within the department. In that sense, the guide materials should be useful to continuing as well as new faculty.

## A Brief Guide to Good Teaching Practices

It is recommended that:

- All faculty familiarize themselves with the MSU Code of Teaching Responsibility (attached in Appendix A)
- A set of clear, concise, and measurable learning objectives be developed for each course and presented to the students at the beginning of the semester (examples of sets of such measurable objectives from several CE classes are attached in Appendix B)
- The distribution of credit across all required assignments/tests (e.g., the weighting for each of the exams) be clearly stated in the syllabus
- Both technical content and communications aspects (e.g., grammar, spelling, readability) be evaluated for course assignments when possible (i.e., other than in-class tests)
- A description of how assignments will be graded be made available to students (e.g., if a project is going to be graded on the basis of “communications” as well as technical content, the breakdown should be provided)
- The grading scale for a course be clearly stated in the syllabus (a typical scale:  $\geq 90\% = 4.0$ ;  $\geq 85$  and  $< 90 = 3.5$ ;  $\geq 80$  and  $< 85 = 3.0$ ;  $\geq 75$  and  $< 80 = 2.5$ ;  $\geq 70$  and  $< 75 = 2.0$ ;  $\geq 65$  and  $< 70 = 1.5$ ;  $\geq 60$  and  $< 65 = 1.0$ ; and  $< 60 = 0.0$ )
- An overall grade in the course of 3.0 be indicative that the student has achieved a level of competence that would allow entry into graduate study in civil and/or environmental engineering in the department

- Any process for appealing grades on graded materials be clearly conveyed to students either orally or in written form (e.g., if a formal appeal process exists, it should be made clear), although all students have the right to discuss their grade(s) with their instructor
- Instructors have three-six (3-6) hours of “open” office hours each week during the semester; be available for e-mail “questions and answers;” and be available by appointment within reason (extra hours near exam or major “due dates” are also encouraged; not all office hours should be scheduled in the same class time period (e.g., MWF, 10:20-11:10); teaching assistants should have office hours in addition to the instructor’s, if possible)
- Instructors institute some means to gain feedback from students during the semester regarding pace of the course, understanding of the materials, and so forth (e.g., “minute papers,” mid-semester course evaluations—see Appendix C for examples)
- Instructors turn in a course evaluation at the end of the semester in addition to the university-mandated student instructional rating survey (an example of the evaluation form suggested by the department is in Appendix D)
- A variety of assignments be required of each student and graded by the instructor (and/or TAs) in order that they receive timely feedback regarding their mastery of course material (e.g., all of the course grade should not be based on one or two assignments)
- Completed student assignments be graded and returned in a prompt fashion (e.g., within a week)
- Laboratory assignments be clearly linked to lecture material and reviewed periodically so that such assignments remain relevant
- Regularly-scheduled classes be canceled only when absolutely required and that “lost” time be made up in some way (e.g., extra lectures, night exams)
- Instructors use state-of-the-art technology in course and laboratory assignments

Finally, it should be understood that the department chairperson, a senior faculty member in the sub-discipline, and/or members of the undergraduate curriculum committees may make visits to classrooms and observe temporary/new faculty and actively solicit student feedback regarding course progress. Such visits are primarily to provide constructive feedback to faculty. The department chairperson will also introduce all temporary and new faculty members to the students in each class he/she will teach.

## **Guidelines for the Assessment of Teaching Potential of New Temporary and Tenure-Track Faculty Members**

Appointment of both temporary and permanent faculty generally requires an evaluation of a candidate’s teaching potential and capabilities. The term “candidate” in the following list refers to a “candidate for a temporary or permanent position” which involves undergraduate teaching in the department. It includes graduate students who may ask, or be asked, to teach courses within the department. Occasionally, the review of temporary faculty may need to be expedited (e.g., an emergency replacement for a regular faculty member) or there may be other compelling reasons to not follow the guidelines (e.g., hiring an experienced teacher as a temporary faculty member). Those exceptions notwithstanding, the following are generally meant to provide guidance in the selection process.

- All candidates must review the department's guide to good teaching practices and the MSU Code of Teaching Responsibility.
- All candidates should deliver one lecture in a selected undergraduate course. As appropriate, the lecture may be attended by members of the search committee (if one exists for the position), the undergraduate curriculum committee, and/or other interested faculty. At the conclusion of the lecture, student and faculty opinions on the candidate will be solicited. (The course and topic will be selected in advance by the chairperson and/or the search committee in consultation with the candidate and the regular instructor of the course.) For candidates for permanent positions, the course lecture is in addition to the standard research-oriented seminar.
- As part of the application and evaluation process for potential tenure-track faculty, all candidates should develop an outline syllabus for a selected (or proposed new) undergraduate course including typical readings, typical assignments, and a set of course objectives. This syllabus will be reviewed by faculty who usually teach in the area, the undergraduate curriculum committee, the chairperson, and the search committee, as appropriate. The syllabus and related materials will also be discussed with the candidate.
- Candidates for temporary positions should develop an outline syllabus for the undergraduate course to be taught, or review and suggest possible revisions to an existing syllabus. The syllabus will be reviewed by the undergraduate curriculum committee and discussed with the candidate.
- Temporary instructors for graduate-level courses, because of the specialized nature of those courses, will not typically be required to go through these same processes. Nonetheless, the chairperson and the faculty in the area should be convinced that the candidate is qualified to teach the subject material.

# Appendix A

## MSU Code of Teaching Responsibility

1. Course content and format must be consistent with the content and format approved by Academic Governance. Check the Description of Courses, 1997-99 against the syllabus.
  - (a) Instructional objectives should be stated at the beginning of the semester. This information should be provided in the syllabus which should be distributed on the first day of classes.
  - (b) Class activities should be consistent with course objectives. Information should be detailed in the course syllabus.
  - (c) The evaluation of student performance should be consistent with course objectives. This information should be detailed in the course syllabus.
2. Students are to be informed of methods to determine the final grade. This information should be detailed in the course syllabus and should be discussed on the first day of class.
  - (a) Students should be informed of attendance requirements. This information should be detailed in the syllabus. (In scheduling examinations and due dates for major assignments, please keep in mind that the University policy on religious observance permits students and faculty to arrange for absences for the purpose of observing major religious holidays.)
  - (b) Course grades are to be determined by the INSTRUCTOR'S assessment of a student's INDIVIDUAL performance. Group project grades must allow for the instructor's evaluation of each student.
3. Students should have timely access to their performance on examinations, through discussions or an early return of examinations. Unclaimed exams must be kept for one semester, not counting Summer (Spring Semester exams must be kept through Fall Semester.) If an instructor keeps papers or similar projects, the information should be detailed in the syllabus; students should have the opportunity to make an additional copy. The Department/School chairperson must be informed and approve any exceptions that deviate from regularly scheduled class times.
4. The instructor must inform teaching or grading assistants of the Code of Teaching Responsibility. This is the responsibility of the instructor. Duties of the assistant should be consistent with the Code and syllabus.
5. Instructors must schedule and keep a reasonable number of office hours and an option of prearranged appointments where there is conflict. This should be detailed in the syllabus and should be registered with unit administrators and office staff.
6. If an instructor is responsible for advising, he or she must be accessible to advisees during the enrollment period. Instructors should be aware that the regular Add-Drop period extends through the fifth class day of the semester and drops until the middle of the semester. Some students may need assistance during this time.

# Appendix B

## Examples of Course Objectives

### CE 337: Civil Engineering Materials I (excerpts from syllabus)

#### Instructor's Expectations

Be proficient in:

- Soil-water phase calculations
- Aggregate moisture and adjustment calculations
- Aggregate particle size distribution concepts and computations
- Mixture design concepts of PCC and HMA mixtures
- Physical and mechanical properties of construction materials (PCC, HMA, Wood...)
- Engineering definitions of terms as they relate to construction materials.

Develop an understanding of:

- Chemistry of PCC and HMA reactions
- PCC and HMA strength development concepts
- Behavior of metals and polymers
- Hands-on testing of construction materials
- Group skills

#### Students' Expectations (solicited via assignment 1)

- Meaningful laboratory experience to enhance the practical experience
- To understand properties of construction materials
- "Real world" experience
- Group experience
- Peer reviewed groups
- Lab and lecture coordination
- Instructor should be approachable

### CE 448: Transportation Planning (excerpt from syllabus)

This course is one of a series of senior-level transportation courses. While these courses can be linked together by the student (and certain linkages between them are noted in context), they are free-standing. For a really solid foundation in transportation, all of the courses could be taken (either as an undergraduate or as a graduate student if you decide to stay on for an MS or PhD). This particular course (CE 448) should be of use to anyone who is pursuing a career in transportation engineering *per se*, or with a public agency that deals at all with transportation issues (e.g., county road commission, a state department of transportation, a regional planning agency), many consulting firms, or a land developer, to name just a few.

There are several parts to this course: the first has to do defining a general overview of transportation issues, the second with both theoretical and applied issues in planning transportation systems, the third with everyday planning-oriented problems associated with development, and the last with project evaluation issues and techniques (including a unit on engineering economics). At the end of the term, you will (hopefully) be able to do the following:

- understand the context in which transportation planning is done;
- identify both qualitative and quantitative concerns in transportation planning;
- define, plan, and implement a straightforward data collection exercise in the field;
- calibrate a simple trip generation (linear regression) model;
- interpret and apply a simple statistical regression model including understanding the limitations of such models;
- plan and execute a straightforward traffic impact analysis;
- understand and use simple engineering economics principles
- work in a team and make task assignments so that work load is balanced; and
- improve your ability to write a reasonable technical report.

### **CE 305: Structural Analysis (excerpt from syllabus)**

This course addresses the behavior of civil engineering structures, which is the basis for analysis and design. Specifically, you will learn to compute deflections and internal forces for elastic determinate framed plane structures, and to recognize instability and indeterminacy. In addition, you will gain experience using a computer program for structural analysis, learn to estimate the strength of members, and be introduced to the history and current practice of the structural engineering profession. CE 305 will prepare you for design courses (CE 405 and 406) and for the advanced analysis course (CE 400).

### **CE 405: Design of Steel Structures (excerpt from syllabus)**

You will develop and demonstrate the ability to analyze and design structural steel framing systems and components such as tension members, columns, beams, and connections. AISC standards of safety and economy, and the “load and resistance factor design” methodology will be employed.

# Appendix C

## Ongoing Course Evaluations

“Ongoing” course evaluations include those activities undertaken during the course where the instructor and students can interact to make adjustments in coverage, pace of presentation, and so on. There are many ways to do this. Some current examples used in CE courses.

### CE 337: Civil Engineering Materials I

#### Management Team

The management team will act as a consultant to the instructor. The team’s responsibilities will be as follows:

- The team will meet on a weekly basis (location to be announced) and the team will meet with the instructor every other week.
- The meetings will last approximately 30-45 minutes.
- Provide feedback on the syllabus, course expectations, lecture delivery, group work, assignments, exams, grading, effectiveness of teaching assistants and laboratory experiments.
- Will conduct periodic course evaluations and provide a summary to the instructor.

#### Example Feedback Form Following an Examination

(This form was developed by the management team)

- Do you feel the test was representative of the material covered in class?
- Was the test format acceptable?
- Were there any misleading questions?
- Was the reference sheet useful?
- Was the practice exam useful to you?
- Was the solution key helpful or was it a dis-incentive to do the practice test?
- Are you satisfied with your lab experience?
- Any additional comments.

#### Environmental Engineering Course

An informal survey has been used...

- What can the instructor do to help students learn the material better?
- What can the students do to learn the material better?
- What could the students’ classmates or group members do to help learn the material better?
- The next page is a form that is used to evaluate team efforts on a “group project.”

## CE 418: Geotechnical Engineering

This course includes a 5-phase design project. During each design phase, meetings are held during and outside of class time to discuss the advantages, disadvantages, additions, and deletions to the project to enhance student learning. The lectures and their impacts on the project and student learning are also discussed.

### Evaluating Team Results

Use this form to evaluate the results of your team efforts (tasks).

<b>RESULTS</b>	<b>What worked</b>	<b>What didn't work</b>	<b>Ways to improve</b>
All available information and alternatives were examined			
All tasks were completed			
Goal was accomplished and supported by all			
Goal was met within the parameters of quality, timing, cost			
Although other problems were created, they were handled successfully			
Other:			
Other:			

# Appendix D

## Example of Course Evaluation Form

**Dept. of Civil and Environmental Engineering  
Michigan State University**

**Continuous Quality  
Improvement Program**

This form documents the quality and improvement of courses. To be most helpful, answers should cite supporting evidence from your own observations, student performance on assignments and examinations, SIRS forms, and other feedback.

Course \_\_\_\_\_ Semester/year \_\_\_\_\_ Instructor \_\_\_\_\_

**Did the course meet its learning objectives?  
Did student achievement improve from last time you taught this course?**

Course learning objectives	How was achievement assessed?	Achievement rating.	Improved (yes/no)

**Were the students adequately prepared by prerequisite courses?**

Prerequisite courses	Deficiencies (if any)

**What changes were made since the last time you taught this course?  
Did these changes improve the course?**

Changes made since last time	Effects of change

**What changes will be made the next time you teach this course?**

<b>Changes recommended for next time</b>	<b>Purpose of changes</b>

**Comments and recommended actions.**