Chapter 8  Teaching & Learning

Goals
The University of Michigan provides a rich academic setting for its students to help them find the right combination of courses and extra-curricular activities to meet their individual needs. Michigan offers students an array of opportunities to explore new intellectual territory, understand our global community, and learn through participation in research and service projects. Faculty members bring tremendous depth to the classroom as they share the latest in research and scholarship.

Overview
Instruction of students is a shared activity involving tenured and tenure-track faculty (3,059), lecturers (825), graduate student instructors (1,833) and clinical, adjunct and not-on-track faculty (2,000) [see chart 6.1.1].

The learning and teaching environment at the University is ever changing as the U-M strives to provide its students with the capabilities and skills that will be needed in order to become the leaders in the 21st century.

The institution must certainly support the development of all of the traditional capabilities – the ability to speak and write clearly, reason critically and quantitatively, gain competence in a student’s discipline of choice, and engage with the arts and humanities. Students must also have the confidence to innovate and take risks, develop leadership skills for group work, work effectively with individuals from diverse backgrounds and cultures, and have command of new information technologies.

The University offers undergraduate students the opportunity to participate in focused “learning communities,” each organized around an intellectual interest. These give students the opportunity to live, interact and learn with a close-knit group, including with faculty and staff.

“Global engagement” is an area of special emphasis as a focus of unique learning opportunities. The Global Michigan web portal was established to facilitate the kind of deep, cultural understanding that comes through shared experiences among students and faculty from different countries and cultures.

Fulbright grants have enabled many University of Michigan students to study and do research abroad, and U-M had more Fulbright-supported students than any other U.S. university or college in five of the last seven years. U-M students have pursued interests from structural engineering in Norway and cancer screening in Tanzania to water quality in India and literature in Germany.

University surveys of students show that they are pleased with their educational experiences and access to faculty, both within the structures of courses and outside of classes. Students also report significant intellectual growth on a number of dimensions.

In 2011, the University launched the Third Century Initiative1, a $50-million program to develop teaching and scholarship innovations during the run-up to 2017, the 200th anniversary of the institution’s founding.

The Third Century Initiative, as described by then-U-M President Mary Sue Coleman, will support creative proposals that expand action-based, immersive learning in and beyond the classroom, including international experiences, undergraduate research, service learning, entrepreneurial activities and innovative courses that encourage the role of creativity in critical thinking.

"We envision new programs and academic experiences that prepare graduates who aspire to advance the public good,” said Coleman, “while also advancing our research and service work to develop solutions to the world’s most pressing problems."

One of the latest educational innovations at the U-M is its participation in Coursera2, a company that was formed by two Stanford faculty members in April 2012 to host online, not-for-credit courses developed and offered by a small set of highly regarded universities (including Michigan). In September 2013, the U-M reported that over the last two years 22 faculty members have been involved in designing 19 such online courses (known as Massive Open Online Courses, or MOOCs), which in total have been offered more than 50 times and reached some 1.5 million individuals around the world.3

In addition to using Coursera to offer such courses worldwide via the Internet, U-M is also exploring ways to use this technology to supplement and enhance the learning experiences of its students on campus. For example, U-M faculty may “flip” the classroom experience, using Coursera to provide lectures and other materials online to supplement greater use of engaged, interactive activities in class.

For More Information
Michigan Learning Communities
www.lsa.umich.edu/mlc

Global Michigan
global.umich.edu/

U-M Coursera portal
www.coursera.org/umich

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1 "U-M will invest in new ideas for a changing world.” Record Update, Oct. 5, 2011.
2 "U-M among first to offer courses through groundbreaking online approach.” Record Update, April 18, 2012.
3 "Campuswide call issued to develop massive open online courses.” University Record, Sept. 23, 2014.
Charts in Chapter 8

8.1 Composition of Instructional Workforce by Full-time Equivalents (FTEs), Fall 2013.
8.2 Undergraduate Student-Faculty Ratio for U-M, Peers, and AAU Publics, Privates and Big Ten Averages, Fall 2013.
8.3 Student Participation in Michigan Learning Communities, 2013-14.
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8.4.2 Self-Reported Participation of Seniors in Global Education Experiences, 2010-11, 2013.
8.4.3 Self-Reported Learning Gains of Seniors in Understanding Global Issues from Time of U-M Enrollment to Senior Year, 2009-11, 2013.
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8.6.3 Self-Reported Satisfaction of Seniors with the Opportunities for Research Experience or to Produce Creative Products, 2009-11, 2013.
8.7 Self-Reported Learning Gains of Seniors from Time of U-M Enrollment through Senior Year, 2013.
Tenured and tenure-track faculty members have the primary responsibility for instruction, often working closely with lecturers and graduate student instructors.

8.1 Composition of Instructional Workforce by Full-time Equivalents (FTEs), Fall 2013.

U-M’s ratio of undergraduate students-to-faculty is below the average of AAU public and Big Ten institutions.

8.2 Undergraduate Student-Faculty Ratio for U-M, Peers,¹ and AAU Publics, Privates and Big Ten² Averages, Fall 2013.

Key
Green bars – private universities
Blue bars – public universities
(U-M is yellow)


¹ A list of the “official” peers used for comparison on this page is found in Appendix A.
² Big Ten average based on member institutions for 2013-14.
Michigan students take advantage of many opportunities to join communities of common intellectual interest to enhance their educational experiences.

### 8.3 Student Participation in Michigan Learning Communities, 2013-14.

<table>
<thead>
<tr>
<th>Program</th>
<th>Freshmen</th>
<th>Sophomores</th>
<th>Juniors</th>
<th>Seniors</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH SCIENCES SCHOLARS PROGRAM: For students seeking to explore the health sciences.</td>
<td>112</td>
<td>25</td>
<td>5</td>
<td>1</td>
<td>143</td>
</tr>
<tr>
<td>LIVING ARTS: Brings together students in engineering, the arts, and other fields to explore creativity and innovation.</td>
<td>63</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>80</td>
</tr>
<tr>
<td>LLOYD HALL SCHOLARS PROGRAM: For students to pursue creative expression through writing, the visual arts, and cultural and social involvement.</td>
<td>127</td>
<td>16</td>
<td>4</td>
<td>3</td>
<td>150</td>
</tr>
<tr>
<td>MICHIGAN COMMUNITY SCHOLARS PROGRAM: For students interested in community service, civic engagement, and social justice.</td>
<td>116</td>
<td>43</td>
<td>1</td>
<td>6</td>
<td>168</td>
</tr>
<tr>
<td>MICHIGAN RESEARCH COMMUNITY: For students interested in a research partnership with a faculty member and a small, diverse, and supportive residential community.</td>
<td>114</td>
<td>37</td>
<td>3</td>
<td>2</td>
<td>156</td>
</tr>
<tr>
<td>WOMEN IN SCIENCE AND ENGINEERING RESIDENCE PROGRAM: For students with interests in the sciences, technology, engineering, mathematics, and health fields.</td>
<td>109</td>
<td>34</td>
<td>4</td>
<td>1</td>
<td>148</td>
</tr>
<tr>
<td>GLOBAL SCHOLARS PROGRAM: Prepares students to be interculturally competent global citizens, champions for meaningful change, and innovative leaders of tomorrow.</td>
<td>-</td>
<td>71</td>
<td>45</td>
<td>32</td>
<td>148</td>
</tr>
<tr>
<td>MAX KADE GERMAN RESIDENCE: Students practice German every day while living in a dedicated house that offers unique cultural events and travel to a German-speaking country.</td>
<td>-</td>
<td>14</td>
<td>7</td>
<td>8</td>
<td>29</td>
</tr>
<tr>
<td>HONORS PROGRAM: Offers special academic challenge to highly motivated students, personalized advising, research opportunities, close faculty contact and optional housing.</td>
<td>405</td>
<td>269</td>
<td>453</td>
<td>470</td>
<td>1,597</td>
</tr>
<tr>
<td>RESIDENTIAL COLLEGE: A small four-year program with an emphasis on languages, writing, and the arts. Students live together in the RC residence hall their first two years.</td>
<td>239</td>
<td>206</td>
<td>192</td>
<td>196</td>
<td>833</td>
</tr>
<tr>
<td>COMPREHENSIVE STUDIES PROGRAM: This program provides small enriched courses, academic advising and academic support and tutoring.</td>
<td>496</td>
<td>557</td>
<td>579</td>
<td>773</td>
<td>2,405</td>
</tr>
<tr>
<td>UNDERGRADUATE RESEARCH OPPORTUNITY PROGRAM: Students participate in research, working with faculty from all academic fields.</td>
<td>~1,400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIVERSITY MENTORSHIP PROGRAM: For first-year students interested in being in a small peer group connected with both student and faculty/staff mentors during their first semester.</td>
<td>150</td>
<td>7</td>
<td>16</td>
<td>7</td>
<td>180</td>
</tr>
<tr>
<td>TRANSFER CONNECTIONS: for transfer students interested in being in a small peer group connected with student and faculty/staff mentors during their first semester.</td>
<td>60</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>68</td>
</tr>
</tbody>
</table>

SOURCE: Program Offices.

Michigan Learning Communities are generally self-selected groups of students and faculty, often from diverse backgrounds, drawn together by shared goals and common intellectual interests. These programs combine the personal attention of a small college environment with the resources of a large research university. In some communities, the members live in the same residence hall during the academic year.
The number of Michigan students involved in international educational opportunities has doubled between fiscal years 2005 and 2012.

### 8.4.1 Student Participation in Educational Opportunities Abroad, FY 2005-13.

[Bar chart showing participation in study abroad and co-curricular education abroad from 2005 to 2013.]


In fiscal year 2013, the U-M ranked sixth nationally in the number of students involved in study abroad. The 2013 total of 2,385 students participating in study abroad programs is a 15-percent increase over the 2012 total of 2,060 students.

The phrase “study abroad” refers to students who received academic credit for educational programs they attended abroad, and encompasses both undergraduate- and graduate-level programs. “Co-curricular education abroad” includes students who participated in non-academic programs that provided research, internship, volunteer service, or work opportunities. The co-curricular program totals cover both current students and recent graduates participating in programs such as Peace Corps, U.S. State Department internships, and the Fulbright U.S. Student Program.

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3 “U-M jumps to No. 6 in ranking of study-abroad student numbers,” The University Record, Nov. 17, 2014.
By the time they reach their senior year, many undergraduates report involvement in and a greater understanding of global or international topics.

8.4.2 Self-Reported Participation of Seniors in Global Education Experiences, 2010-11, 2013.

- Enrolled in a course with an international or global focus
- Attended lectures, symposia, workshops or conferences on international or global topics
- Worked with a faculty member on a project with an international or global focus

8.4.3 Self-Reported Learning Gains of Seniors in Understanding Global Issues from Time of U-M Enrollment through Senior Year, 2009-11, 2013.

- Percent Change for Excellent to Good between “When started” and “Now”

SOURCE: University of Michigan Asks You (UMAY) undergraduate survey.

In 8.4.2, data for 2009 was collected, but it is not comparable because the question responses offered to students changed in 2010.
Seniors express high levels of satisfaction with the quality of instruction they have received, the availability of small classes and with their contact with faculty members beyond the classroom and laboratory.

8.5 Self-Reported Satisfaction of Seniors with Instructional Quality and Access to the Faculty, 2009-11, 2013.

How satisfied are you with the quality of faculty instruction?

- 2013: 90%
- 2011: 91%
- 2010: 92%
- 2009: 91%

How satisfied are you with access to small classes?

- 2013: 80%
- 2011: 82%
- 2010: 83%
- 2009: 80%

How satisfied are you with access to faculty outside of class?

- 2013: 91%
- 2011: 92%
- 2010: 92%
- 2009: 90%

SOURCE: University of Michigan Asks You (UMAY) undergraduate survey.

The percentage to the right of each bar is the sum of the fractions who replied “Very satisfied,” “Satisfied,” and “Somewhat satisfied” (the segments in shades of blue).
More than three-fifths of undergraduate seniors participate in research or a creative endeavor with a faculty member while at Michigan.

### 8.6.1 Self-Reported Participation of Seniors with Faculty in Research or a Creative Project in the Current Academic Year, 2009-11, 2013.

<table>
<thead>
<tr>
<th>Year</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>64%</td>
</tr>
<tr>
<td>2011</td>
<td>65%</td>
</tr>
<tr>
<td>2010</td>
<td>64%</td>
</tr>
<tr>
<td>2009</td>
<td>68%</td>
</tr>
</tbody>
</table>

### 8.6.2 Self-Reported Participation of Seniors in a Small Research-Oriented Seminar in the Current Academic Year, 2009-11, 2013.

<table>
<thead>
<tr>
<th>Year</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>44%</td>
</tr>
<tr>
<td>2011</td>
<td>37%</td>
</tr>
<tr>
<td>2010</td>
<td>37%</td>
</tr>
<tr>
<td>2009</td>
<td>44%</td>
</tr>
</tbody>
</table>

### 8.6.3 Self-Reported Satisfaction of Seniors with the Opportunities for Research Experience or to Produce Creative Products, 2009-11, 2013.

- **Please note the images show the satisfaction levels for each year**

**SOURCE:** University of Michigan Asks You (UMAY) undergraduate survey.

In 8.6.1, the total includes all students who answered yes to any of the following statements: “Assist faculty in research with course credit”, “Assist faculty in research for pay without course credit”, “Assist faculty in research as a volunteer without course credit”, “Work on creative projects under the direction of faculty with course credit”, “Work on creative projects under the direction of faculty for pay without course credit”, “Work on creative projects under the direction of faculty as a volunteer without course credit”.

In 8.6.2, the total includes all students who selected gave any response other than “Never” to the question: During this academic year, how frequently have you participated in a research-oriented seminar with faculty?”
Students report gains in their academic skills and knowledge between the time they started at Michigan and their senior year.

8.7 Self-Reported Learning Gains of Seniors from Time of U-M Enrollment through Senior Year, 2013.

SOURCE: University of Michigan Asks You (UMAY) undergraduate survey.

The percentage to the right of each bar is the difference between “When started” and “Now” for the sum of the fractions who replied “Excellent,” “Very good,” and “Good” (the segments in shades of blue).