Table of Contents

The Purpose of the Guidebook

PART I. **What is Assessment?**
- Definition of Assessment
- Purpose and Benefits of Assessment
- Fundamental Elements of Institutional Assessment

PART II. **Developing an Assessment Plan**
- Define Program Learning Goals (PLGs)
- Identify Assessment Measure, Schedule and Assessment Tools/Rubrics for Each PLG

PART III. **Data Collection/Analysis**
- Collect Data
- Analyze the Results

PART IV. **Action Plan/Continuing the Loop**
- Implement changes/Develop an Action Plan
- Make Data-Driven Decisions/Continue the Loop

PART V. **FAQs**

PART VI. **Glossary of Terms**

PART VII. **Assessment Resources**

PART VIII. **Appendices**
- A. Program Assessment Plan Template
- B. Department Annual Assessment Report Template
- C. College Annual Assessment Report Template
- D. Bloom’s Taxonomy of Educational Objectives
- E. Rubric Samples
- F. Assessment Plan Examples

PART IX. **References**
Welcome to assessment! Assessment is the key to unlock what has actually been learned. This manual will take you through the steps, complete with examples, to implement assessment activities into your teaching to enhance your students’ educational experience. The purpose of this guide is to lead to reflection on each academic program’s learning goals and student’s ability to achieve those learning goals. It was developed using numerous references, Palomba & Banta, Suskie, Huba and Freed, and adheres to the Middle States Commission on Higher Education (MSCHE) guidelines for accreditation.
PART I
What is Assessment?

“Assessment is the ongoing process of establishing clear, measurable expected outcomes of student learning, ensuring that students have sufficient opportunities to achieve those outcomes, systematically gathering, analyzing, and interpreting evidence to determine how well students learning matches the expectations and using the resulting information to understand and improve student learning.”
--L. Suskie, 2009

“Assessment is the process of gathering information from multiple sources in order to develop an understanding of what students know, understand and can do with their knowledge as a result of their educational experience. The process culminates when assessment results are used to improve subsequent learning.”
--Huba and Freed (2000)

The Higher Learning Commission defines assessment of student learning in the following way:

“Assessment of student learning is a participatory, interactive process that:

- Provides data/information you need on your students’ learning
- Engages you and others in analyzing and using this data/information to confirm and improve teaching and learning
- Produces evidence that students are learning the outcomes you intended
- Guides you in making educational and institutional improvements
- Evaluates whether changes made improve/impact student learning, and documents the learning and your efforts.”


(Return to Table of Contents)
Purpose of Assessment

The purpose of assessment is to improve, inform, and support your program. The assessment of student learning is an essential component of university effectiveness, General Education, and program goals. This assessment is fundamental to achieving the Strategic Plan goals and fulfilling the mission of the college.

At Montclair State University, the programs are designed to develop students' ability to discover, create, evaluate, apply, and share knowledge. Students, in their curricular and co-curricular programs, cultivate abilities to think critically, act ethically, and become informed participants in our democracy. It is the ongoing, systematic assessment of specific student learning goals in General Education and academic programs, which informs the University on the status of accomplishing the mission and Strategic Plan.

(Return to Table of Contents)
**Benefits of Assessment**

Colleges and Universities are increasingly emphasizing the assessment of student learning for three primary reasons:

- **Improvement.** Assessment can help course instructors of programs and departments make informed decisions in terms of the program strengths in order to improve the quality of teaching and learning, as well as programs and services.

- **Accountability.** Assessment can validate programs, services, teaching and learning efforts and thereby demonstrate, with evidence, their effectiveness to concerned audiences.

- **Student Learning Outcomes.** The assessment of student learning is an essential component of university effectiveness, General Education, and program goals. This assessment is fundamental to achieving the Strategic Plan goals and fulfilling the university’s mission.

Assessment efforts have benefits for faculty, students, departments, and university.

**Instructor Benefits:**
- Assessment efforts lead to ongoing change in course content that increase students learning and satisfaction
- Lead to improvement of teaching style

**Student Benefits:**
- Assessment allows students to study more efficiently and effectively
- Students feel their faculty care about their learning
- Increase students’ ability to self-assess their knowledge and skills

**Department Benefits:**
- Increase discussion about teaching among faculty and staff
- Lead to new and innovative ways of teaching
- Lead to program and course development and improvement

**University Benefits:**
- Assessment is fundamental to achieving the Strategic Plan goals
- Assessment leads to fulfilling the University’s mission

(Return to Table of Contents)
Fundamental Elements of Institutional Assessment

An accredited institution is expected to possess or demonstrate the following attributes or activities:

- documented, organized and sustained assessment process to evaluate and improve the total range of programs and services; achievement of institutional mission, goals, and plans; and compliance with accreditation standards that meets the following criteria:
  - a foundation in the institution’s mission and clearly articulated institutional, unit-level, and program-level goals that encompass all programs, services, and initiatives and are appropriately integrated with one another (see Standards 1: Mission and Goals and 2: Planning, Resource Allocation, and Institutional Renewal);
  - systematic, sustained, and thorough use of multiple qualitative and/or quantitative measures that:
    - maximize the use of existing data and information;
    - clearly and purposefully relate to the goals they are assessing;
    - are of sufficient quality that results can be used with confidence to inform decisions;
  - support and collaboration of faculty and administration in assessing student learning and responding to assessment results;
  - clear realistic guidelines and a timetable, supported by appropriate investment of institutional resources;
  - sufficient simplicity, practicality, detail, and ownership to be sustainable;
  - periodic evaluation of the effectiveness and comprehensiveness of the institution’s assessment process;
- evidence that assessment results are shared and discussed with appropriate constituents and used in institutional planning, resource allocation, and renewal (see Standard 2: Planning, Resource Allocation, and Institutional Renewal) to improve and gain efficiencies in programs, services and processes, including activities specific to the institution’s mission (e.g., service, outreach, research); and
- written institutional (strategic) plan(s) that reflect(s) consideration of assessment results.

Institutions and evaluators must consider the totality that is created by the fundamental elements and any other relevant institutional information or analysis. Fundamental elements and contextual statements should not be applied separately as checklists. Where an institution does not possess or demonstrate evidence of a particular Fundamental Element, the institution may demonstrate through alternative information and analysis that it meets the standard.

(Return to Table of Contents)
PART II
Developing an Assessment Plan

To organize for assessment, assessment liaisons and department chairs, who lead the department assessment process, have to identify the key assessment faculty (full time/adjuncts).

Assessment Liaisons are responsible for data entry in the Provost’s Assessment Database throughout the process. The database is located at:
https://midstates-assessment.montclair.edu/programAssessment/Security/SignIn.aspx

The MSU Assessment Circle includes 6 main steps shown and described below.

(Return to Table of Contents)
Define program learning goals (PLGs)

PLGs provide the basis for assessment and must concur with the school or college goals, and ultimately with the Montclair State Strategic Plan objectives, therefore each department/college should adequately and clearly define the PLGs.

Examples of program learning goals

- Students will be able to understand how their discipline is created, organized, linked to other disciplines, and practiced in the educational setting.
- Students will demonstrate critical thought and inquiry into the nature of teaching and learning.
- Students will be able to synthesize primary literature.
- Students will be able to communicate effectively.
- Students will be able to construct logical arguments.
- Students will demonstrate knowledge of how research builds incrementally.
- Students will be able to plan and teach using a range of strategies and resources to create a meaningful context for learning.
- Students will be able to critically assess their own development as a teacher and reflective practitioner.
Develop Curriculum Matrix

Curriculum matrix allows programs to develop an inventory that aligns objectives with curriculum. Once the program establishes this alignment, the current curriculum can be evaluated for its effectiveness in achieving the program’s learning goals.

The matrix should illustrate the cross-section of specific student learning goals, each course in the major curriculum contributing to the teaching of these goals, and the methods used to assess the specific student outcomes. Additional information may be included in the map (such as the type of measure used) as best fits the program.

(Return to Table of Contents)
Step 2: Develop assessment measures, tools and schedule for each PLG

Part II: Developing an Assessment Plan

Identify and describe assessment measures, then develop tools/rubrics.

Assess each goal once a year.

Examples of assessment measures:

Excerpt from Linguistics Assessment Plan:

Assessment Measure for **Goal 1**: Comprehensive final examination.
Assessment Measure for **Goal 2**: Final presentation.
Assessment Measure for **Goal 3**: Midterm and final examinations.

Excerpt from Biology Assessment Plan:

Assessment Measure for **Goal 1**: Evaluation of Lab Reports.
Assessment Measure for **Goal 2**: Practical laboratory exam.
Assessment Measure for **Goal 3**: Final exam.
Assessment Measure for **Goal 4**: Research Proposal (Paper) and Final Presentation.
Assessment Measure for **Goal 5**: Research Proposal (Paper) and Final Presentation.

See [Appendix E](#) for Rubric Samples
PART III
Data Collection/Analysis

Step 3: Collect data

The assessment liaison organizes and manages data collection process by requesting the following data from the key assessment faculty - full-time and adjuncts:

- The number of students, who exceed, meet or do not meet the instructor’s expectations in the course(s), and
- One anonymous sample of student work from each category (exceeds, meets and below).

See Appendix F for Assessment Plan Examples

(Return to Table of Contents)
Step 4: Discuss and analyze the data

Part III: Data Collection/Analysis

The results and information gained should be distributed to the faculty and department chairs for *discussion, analysis and development of action plan* to achieve continuous improvement.

**Examples of action plans**

*Excerpt from Linguistics Assessment Plan:*

“Sample exams, papers, and PPTs that exceed, meet, and do not meet the rubrics for these assessment measures will be shared with faculty at the beginning of each semester as well as numbers of students that have exceeded, met, and not met rubrics.

Data will be examined for writing, care in analysis and strength of argument. Any weaknesses will result in more time and resources being given to the weak areas.”

*Excerpt from Biology Assessment Plan:*

“Results from each evaluation will be presented at the 1st February department meeting of the year.

In May of each year a committee will develop recommendations for the following year's assessment and any necessary modification of the particular course structure.”
PART IV
Action Plan/Continuing the Loop

Step 5: Implement changes/Develop an Action Plan

The results of the assessment must be used to identify changes to improve the program. These changes could be to the content of the curriculum, staffing, facilities, among others.

Use the results to:

- Evaluate learning goals: Are there too many, do they need clarification, are they appropriate?

- Evaluate curriculum: Does it address all of the learning goals? How can courses be modified to do so?

- Evaluate teaching methods: Can any improvement be made in this area toward empowering students to achieve learning goals?

- Evaluate the assessment methods used: Were they appropriate?

- Adapted from Suskie (2004), Chapter 16
Based on the results that you received, will any modifications be made to improve student learning?

The implemented changes should be monitored to determine whether or not the changes had the desired effect. One way of achieving this is to use the same assessment plan as used in the previous cycle and compare the actual results to the intended results. Any discrepancies should be carefully studied to determine the underlying cause. In other situations, the action might be to continue monitoring the outcome to ensure quality.

Review all of the information obtained from the assessment process and determine how this will affect your next assessment plan. This provides the starting point for the next implementation and continuous improvement of the academic program.
PART V
Frequently Asked Questions

Does assessment matter? Should I care?
Absolutely. The purpose of assessment is to improve, inform, and support your program. The assessment of student learning is an essential component of university effectiveness, General Education, and program goals. This assessment is fundamental to achieving the Strategic Plan goals and fulfilling the mission of the college.
In addition, assessment plays an integral role in accreditation of programs and Middle States accreditation. These accreditations are a prerequisite for access to federal or state funds for research, programs, and facilities, as well as government sources of financial support for students.

What are the possible outcomes?
If an institution fails to demonstrate compliance with one or more of the standards, Middle States can send specific recommendations that engage the institution in a follow-up process. For example, “accreditation with a follow-up report" or "accreditation with monitoring and a follow-up visit." If an institution fails to perform the designated follow-up actions, the Middle States Commission on Higher Education can subsequently withdraw its accreditation.

What is the difference between assessment and evaluation?
Assessment and evaluation are often confused. Therefore, it is important to understand the difference between these two concepts, which have similar methods, but have different goals. The main goal of assessment is to improve student learning. Assessment helps to ensure the following:

- Institutional and program-level goals are clear to the public, students, faculty, and staff.
- Institutional programs and resources are organized and coordinated to achieve institutional and program-level goals.
- The institution is indeed achieving its mission and goals, and

(Back to Top)
• The institution is using assessment results to improve student learning and otherwise advance the institution. (Middle States Commission on Higher Education, 2007, p.75).

While assessment focuses on how well student learning goals are achieved, evaluation addresses how well all the major goals of a program are achieved (Suskie, 2009).

Evaluation is using assessment information to:

• Make informed judgment on whether students have achieved the learning goals established for them.
• Investigate and judge the quality or worth of a program, project, or other entity rather than student learning.

Thus, evaluation is “the analysis and use of data by faculty to make judgments about student performance. Evaluation includes the determination of a grade or a decision regarding pass/fail for an individual assignment or for a course.” (Goldman & Zakel, 2009)

What is Middle States? What is accreditation?
The Middle States Commission on Higher Education (MSCHE) is a voluntary, non-governmental, membership association that defines, maintains, and promotes educational excellence across institutions with diverse missions, student populations, and resources. It examines each institution as a whole, rather than specific programs within institutions.

Accreditation is a means of showing that a university’s programs, policies, and priorities are aligned with its institutional mission and goals. The accreditation process is an opportunity to demonstrate a university’s accountability and improvement, both internally and externally. Montclair State University is proud to be accredited by one of the 7 regional accreditation authorities - the Middle States Commission on Higher Education.

The MSCHE accredits institutions in Delaware, the District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Puerto Rico, the U.S. Virgin Islands, and several locations abroad.

What is Middle States looking for?
The Middle States Commission on Higher Education aspires to be the preeminent resource for institutions of higher education striving to achieve excellence in fulfilling their missions. It also intends, through voluntary assessment and adherence to high standards for student learning outcomes and operational behavior, to assure higher education’s publics that its accredited institutions are fulfilling their stated purposes and addressing the publics’ expectations.

Montclair State University must comply with all fourteen Middle States’ standards in order to keep our accreditation. All the standards are interpreted in the context of the university's mission and goals. Additionally, we must demonstrate that our resources are allocated properly and our planning processes are sustainable for change, informed by data analysis, assessment, and
evaluation. If you are interested in the full exposition of the standards, you can download the Middle States document entitled Characteristics of Excellence in Higher Education.

(AssnTop)

Aren't we already accredited?
Yes, the Middle States accreditation process follows a 10-year cycle, and Montclair State University’s last accreditation was in 2007. In June 2012, we provided Middle States with a Periodic Review Report to address their recommendations. Middle States will next consider Montclair State University’s accreditation in 2016-2017 with a decennial Self-Study Report in 2016 and a follow-up on-site visit in 2017.

You may view electronic copies of the Middle States Self Study Report 2007 and 2012 Periodic Review in .pdf format. As can be seen, accreditation is an ongoing process.

(AssnTop)

Will Montclair State University be accredited automatically? Isn't this just a formality?
No institution is automatically accredited. The process of accreditation is the same for all institutions and follows a 10-year cycle.

(AssnTop)

When does this have to be done? How often do we have to assess the program?
Program assessment is an ongoing process of identifying goals and objectives, collecting and analyzing data, and making modifications for improvement when necessary. That being said, programs need not assess every goal and objective on a yearly basis. Each goal should be assessed once a year. Therefore, departments need to adopt their own individual schedule of rotating through the goals and objectives on a regular basis to collect data to meet the assessment deadlines and identify their strategies for using the data to make any modifications necessary to programs to improve student learning. At Montclair State University, the Middle States Commission on Higher Education expects evidence of this ongoing process on assessment by 2016.

(AssnTop)

How should we begin?
The three main steps of assessment are:
1. Articulate your goals and objectives for student learning.
2. Gather evidence about how well students are meeting the goals.
3. Use the information to make any modifications necessary to improve student learning.
For details about the assessment process, see Steps in Developing an Assessment Plan.

(AssnTop)

(Return to Table of Contents)
PART VI
Glossary of Terms

Assessment - a process that asks important questions about student learning and program effectiveness: gathers meaningful information about these questions; uses the information for program and course improvement in the achievement of University program goals.

Assessment Liaison – a department representative, who manages, organizes and oversees the assessment process in the department.

Action Plan – an agreed upon strategy among the faculty to address the results of an ongoing assessment plan.

Benchmark - a detailed description of a specific level of student performance expected of students at particular ages, grades, or developmental levels. Benchmarks are often represented by samples of student work, which can be used as "checkpoints" to monitor progress toward meeting performance goals within and across grade levels.

Culture of Assessment – the attitudes and mindset of individuals within the university toward assessment and all of its components that are seeking to serve the student body to the fullest extent.

Closing the Loop – the demonstration of the use of assessment results to improve the educational or service program through drafting of and implementation of an action plan. Once the "loop" is completed, the process is repeated to assess the impact of the plan.

Institutional Effectiveness – the extent to which an institution achieves its mission and goals.

Institutional Goals – institutional- level action statements that implement, support, and are derived from the Mission and Strategic Plan.

Institutional Mission – a broad statement of institutional philosophy, role, scope, etc.

Learning Standards – standards that define the skills and abilities to be mastered by students at a certain point in their learning progression.

Portfolio - a collection of student-generated or student-focused evidence (for ex., student work samples, photographs, videotapes and observations), designed to assess student’s progress, effort, and/or achievement. Portfolios encourage students to reflect on their learning and provide the basis for demonstrating the student’s mastery of a range of skills, performance level, or improvement in these skills over time.

(Return to Table of Contents)
A portfolio becomes a portfolio assessment when:

1. the assessment purpose is defined,
2. criteria or methods are made clear for determining what should be included in the portfolio, by whom, and when,
3. criteria for assessing either the collection or individual pieces of work are identified and used to make judgments about performance.

**Student Learning Outcomes (SLO)** – statements that specify what students will know, be able to do or be able to demonstrate when they have completed or participated in a course or a program. The systematic evaluation of specific student learning which informs the University on the status of accomplishing the mission, and if students are learning what is expected of them by their programs. SLO demonstrate knowledge, skills, attitudes or values.

**Reliability** - an indication of the consistency of scores across raters, over time, or across different tasks or items that measure the same thing. It is the degree to which the results of an assessment are dependable and consistently measure particular student knowledge and/or skills.

**Rubric** – a scoring tool developed by instructors to assess the performances of their students. The rubric lists the task of the performance to be evaluated and describes the levels for each dimension of the performance to be evaluated. Rubrics have sets of criteria that clearly define for both student and faculty what a range of acceptable and unacceptable performance looks like.

**Validity** - an extent to which an assessment measures what it was designed to measure and the extent to which inferences and actions made on the basis of test scores are appropriate and accurate.
PART VII
Assessment Resources

PART VIII
Appendices

Appendix A
Program Assessment Plan Template

Program Learning Goals:

Course Matrix:

Results/Assessment Summary:

Action Plan:
### Appendix B
#### Annual Academic Departmental Report Checklist
#### 2013-2014

**College/School:**
**Department:**
**Submitted by:**
**Date:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Completed (include link to or attachment of any relevant documents)</th>
<th>In Progress (include timeline for anticipated completion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. DEPARTMENTAL GOALS, OBJECTIVES AND STRATEGIC PLANNING</td>
<td></td>
<td></td>
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<tr>
<td>State your department mission</td>
<td></td>
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<tr>
<td>Describe the alignment of your mission with that of your college and the University</td>
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<td></td>
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<tr>
<td>State Department Goals and Objectives</td>
<td></td>
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<tr>
<td>Map your department goals to the College/University Strategic Plan</td>
<td></td>
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</tr>
<tr>
<td>Indicate any changes or revisions made in the past AY, if applicable</td>
<td></td>
<td></td>
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<tr>
<td>B. PROGRAM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum: Describe any new programs or curricular alterations done within the past AY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum: Indicate how your department used assessment results to revise existing programs or develop new programs</td>
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<td></td>
</tr>
<tr>
<td>Advising: The department’s student advisement</td>
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</table>
program for both undergraduate and graduate students should be described, indicating any new/revised components

<table>
<thead>
<tr>
<th>C. OUTCOMES: PROGRAMS AND STUDENT LEARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review your existing 2013-2014 Program Assessment Plans, including learning goals, action plan, and data collection</td>
</tr>
<tr>
<td>Indicate any change(s) in the existing assessment plans and indicate any new plans for your new programs</td>
</tr>
</tbody>
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<tr>
<th>D. FACULTY</th>
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</thead>
<tbody>
<tr>
<td>Provide resume of new hires in the past AY</td>
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</table>

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<thead>
<tr>
<th>E. FACILITIES, LIBRARY, TECHNOLOGY RESOURCES and SUPPORT SERVICES</th>
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</thead>
<tbody>
<tr>
<td>Update any new developments in these areas</td>
</tr>
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</table>

<table>
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<tr>
<th>F. DISCIPLINE ACCREDITATION, if applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide an update on the status of existing accreditation(s)</td>
</tr>
<tr>
<td>Provide an update on results of efforts to obtain accreditation by professional associations, if relevant</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>G. ENROLLMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comment on the department’s history of retention of students.</td>
</tr>
</tbody>
</table>
The Annual Academic Department Report has been developed to assist the faculty and administration in preparation for their continuing Five-Year External Review Committee (FERC) self-studies and the Annual College Assessment Reports.

Departments should indicate any changes or progress made since the completion of the last FERC visit and report. A suggested outline for the content of the document is given below.

Departments should submit their reports to the Associate Deans no later than March 1, 2014.

The Associate/Assistant Deans will then submit the approved Department reports electronically to Irina Koroleva at korolevaai@mail.montclair.edu no later than April 1, 2014.

The Annual Academic Departmental Report will be a valuable asset to program and curriculum development and improvement in each of the departments.

A. DEPARTMENTAL GOALS, OBJECTIVES AND STRATEGIC PLANNING

   1. State your department mission.
   2. Describe the alignment of your mission with that of your college and the University Strategic Plan.
   3. State departmental goals and objectives.

   Indicate any changes or revisions made in the past AY, if applicable.

B. PROGRAM

   1. Curriculum:
      ✓ Describe any new programs or curricular alterations done within the past AY.
      ✓ Indicate how your department used assessment results to revise existing programs or develop new programs.

   2. Advising – The department’s student advisement program for both undergraduate and graduate students should be described, indicating any new/revised components.

C. OUTCOMES: PROGRAMS AND STUDENT LEARNING

   1. Review your existing 2013-2014 Program Assessment Plans, including learning goals, action plan, and data collection.
2. Indicate any change(s) in the existing assessment plans and indicate any new plans for your new programs.

Plans and collected data must be entered into the Assessment Database located at:  
https://midstates-assessment.montclair.edu/programAssessment/Security/SignIn.aspx

D. FACULTY

Provide resume of new hires in the past AY. It should be no longer than one-page for each faculty member (full and part-time). The outline should include:

- Academic training,
- A synopsis of publications,
- A description of current research activity,
- University and community services, professional development activities, and
- The role of the individual in the program, and any released time associated with these activities.

E. FACILITIES, LIBRARY, TECHNOLOGY RESOURCES and SUPPORT SERVICES

Update any new developments in these areas.

F. DISCIPLINE ACCREDITATION, if applicable

Provide an update on:

- The status of existing accreditation(s) or
- Results of efforts to obtain accreditation by professional associations, if relevant.

G. ENROLLMENT

Comment on the department’s history of retention of students. Please note any trends that have been found and strategies to build or maintain student retention in the program(s).

(Return to Table of Contents)
Appendix C
College Annual Assessment Report Template

Section I.
College/School Goals
Department/Program Goals

Section II.
Schedule of Assessment
Measures of Assessment (especially direct measures)
Where assessment takes place
Results of student performance

Section III.
What the program/department is doing with the results or plans to do with results
Appendix D
Bloom’s Taxonomy of Educational Objectives

MAJOR CATEGORIES IN THE TAXONOMY OF EDUCATIONAL OBJECTIVES (BLOOM 1956)

Available at:
http://faculty.washington.edu/krumme/guides/bloom.html

Categories in the Cognitive Domain
(With Outcome Illustrating Verbs)

Knowledge of terminology: specific facts; ways and means of dealing with specifics (conventions, trends and sequences, classifications and categories, criteria, methodology); universals and abstractions in a field (principles and generalizations, theories and structures). Knowledge is (here) defined as the remembering (recalling) of appropriate, previously learned information.

VERBS: defines; describes; enumerates; identifies; labels; lists; matches; names; reads; records; reproduces; selects; states; views

Comprehension: Grasping (understanding) the meaning of informational materials.

VERBS: classifies; cites; converts; describes; discusses; estimates; explains; generalizes; gives examples; makes sense out of; paraphrases; restates (in own words); summarizes; traces

Application: The use of previously learned information in new and concrete situations to solve problems that have single or best answers.

VERBS: acts; administers; assesses; charts; collects; computes; constructs; contributes; controls; determines; develops; discovers; establishes; extends; implements; includes; informs; instructs; operationalizes; participates; predicts; prepares; preserves; produces; projects; provides; relates; reports; shoes; solves; teaches; transfers; uses; utilizes

Analysis: The breaking down of informational materials into their component parts, examining (and trying to understand the organizational structure of) such information to develop divergent conclusions by identifying motives or causes, making inferences, and/or finding evidence to support generalizations.

VERBS: breaks down; correlates; diagrams; differentiates; discriminates; distinguishes; focuses; illustrates; infers; limits; outlines; points out; prioritizes; recognizes; separates; subdivides

Synthesis: Creatively or divergently applying prior knowledge and skills to produce a new or original whole.

VERBS: adapts; anticipates; categorizes; collaborates; combines; communicates; compares; compiles; composes; contrasts; creates; designs; devises; expresses; facilitates; formulates; generates; incorporates; individualizes; initiates; integrates; intervenes; models; modifies; negotiates; plans; progresses; rearranges; reconstructs; reinforces; reorganizes; revises; structures; substitutes; validates

Evaluation: Judging the value of the material based on personal values/opinions, resulting in an end product, with a given purpose, without real right or wrong answers.

VERBS: appraises; compares & contrasts; criticizes; critiques; decides; defends; interprets; judges; justifies; reframes; supports

(Return to Table of Contents)
## Critical Thinking Rubric Example

<table>
<thead>
<tr>
<th></th>
<th>Capstone</th>
<th>Milestones</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanation of issues</strong></td>
<td>Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.</td>
<td>Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.</td>
<td>Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.</td>
<td>Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.</td>
<td>Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.</td>
</tr>
</tbody>
</table>

- 29 -
<table>
<thead>
<tr>
<th>Influence of context and assumptions</th>
<th>Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.</th>
<th>Identifies own and others' assumptions and several relevant contexts when presenting a position.</th>
<th>Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).</th>
<th>Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student's position (perspective, thesis/hypothesis)</td>
<td>Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/hypothesis).</td>
<td>Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue.</td>
<td>Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious.</td>
</tr>
<tr>
<td>Conclusions and related outcomes (implications and consequences)</td>
<td>Conclusions and related outcomes (consequences and implications) are logical and reflect student’s informed evaluation and ability to place evidence and perspectives discussed in priority order.</td>
<td>Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.</td>
<td>Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.</td>
</tr>
</tbody>
</table>

(Return to Table of Contents)
## Oral Communication Rubric Example

<table>
<thead>
<tr>
<th></th>
<th>Capstone (4)</th>
<th>Milestones (3)</th>
<th>Benchmark (2)</th>
<th>Benchmark (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization</strong></td>
<td>Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.</td>
<td>Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.</td>
<td>Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.</td>
<td>Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.</td>
<td>Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.</td>
<td>Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.</td>
<td>Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.</td>
</tr>
<tr>
<td><strong>Delivery</strong></td>
<td>Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling.</td>
<td>Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting.</td>
<td>Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation</td>
<td>Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the</td>
</tr>
<tr>
<td>Supporting Material</td>
<td>and speaker appears polished and confident.</td>
<td>and speaker appears comfortable.</td>
<td>understandable, and speaker appears tentative</td>
<td>understandability of the presentation, and speaker appears uncomfortable.</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------------------------------</td>
<td>----------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/authority on the topic.</td>
<td>Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/authority on the topic.</td>
<td>Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/authority on the topic.</td>
<td>Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/authority on the topic.</td>
<td></td>
</tr>
<tr>
<td>Central Message</td>
<td>Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)</td>
<td>Central message is clear and consistent with the supporting material.</td>
<td>Central message is basically understandable but is not often repeated and is not memorable.</td>
<td>Central message can be deduced, but is not explicitly stated in the presentation.</td>
</tr>
</tbody>
</table>

(Return to Table of Contents)
## Written Communication Rubric Example

<table>
<thead>
<tr>
<th></th>
<th>Capstone</th>
<th>Milestones</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context of and Purpose for Writing</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Includes considerations of audience, purpose, and the circumstances surrounding the writing task(s).</td>
<td>Demonstrates a thorough understanding of context, audience, and purpose that is responsive to the assigned task(s) and focuses all elements of the work.</td>
<td>Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s) (e.g., the task aligns with audience, purpose, and context).</td>
<td>Demonstrates awareness of context, audience, purpose, and to the assigned tasks(s) (e.g., begins to show awareness of audience's perceptions and assumptions).</td>
</tr>
<tr>
<td>Content Development</td>
<td>Uses appropriate, relevant, and compelling content to illustrate mastery of the subject, conveying the writer's understanding, and shaping the whole work.</td>
<td>Uses appropriate, relevant, and compelling content to explore ideas within the context of the discipline and shape the whole work.</td>
<td>Uses appropriate and relevant content to develop and explore ideas through most of the work.</td>
</tr>
<tr>
<td>Genre and Disciplinary Conventions</td>
<td>Demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task(s) including organization, content, presentation, formatting, and stylistic choices</td>
<td>Demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices</td>
<td>Follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Sources and Evidence</td>
<td>Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the discipline and genre of the writing</td>
<td>Demonstrates consistent use of credible, relevant sources to support ideas that are situated within the discipline and genre of the writing.</td>
<td>Demonstrates an attempt to use credible and/or relevant sources to support ideas that are appropriate for the discipline and genre of the writing.</td>
</tr>
<tr>
<td>Control of Syntax and Mechanics</td>
<td>Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is virtually error-free.</td>
<td>Uses straightforward language that generally conveys meaning to readers. The language in the portfolio has few errors.</td>
<td>Uses language that generally conveys meaning to readers with clarity, although writing may include some errors.</td>
</tr>
</tbody>
</table>

(Return to Table of Contents)
Appendix F
Assessment Plan Examples

Assessment

<table>
<thead>
<tr>
<th>College School</th>
<th>Department</th>
<th>Program Degree</th>
<th>Student Level</th>
<th>Plan Status</th>
<th>Assessment Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSAM</td>
<td>BIOL</td>
<td>BIEEMS</td>
<td>G</td>
<td>Approved</td>
<td>Complete 2013</td>
</tr>
</tbody>
</table>

Action Plan

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Program Degree</th>
<th>Completed By</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>BIEEMS</td>
<td>Lisa Hazard</td>
<td><a href="mailto:hazard@email.montclair.edu">hazard@email.montclair.edu</a></td>
</tr>
</tbody>
</table>

Use of Data
In May of each year a committee consisting of the Departmental Graduate Program Coordinators and relevant faculty will develop recommendations for the following year's assessment and propose any necessary modification of the particular course structure.

Disseminate Results
Assessment results will be presented to faculty during a faculty meeting in the semester following the committee meeting.

Course Matrix

<table>
<thead>
<tr>
<th>Program Degree</th>
<th>Course</th>
<th>Goal 1</th>
<th>Goal 2</th>
<th>Goal 3</th>
<th>Goal 4</th>
<th>Goal 5</th>
<th>Goal 6</th>
<th>Goal 7</th>
<th>Goal 8</th>
<th>Goal 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIEEMS</td>
<td>BIOL570</td>
<td>X</td>
<td>A</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>BIEEMS</td>
<td>BIOL580</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIEEMS</td>
<td>BIOL592</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIEEMS</td>
<td>BIOL597</td>
<td>X</td>
<td>X</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Program Learning Goals

**PLG 1 | BIEEMS | BIOL592**

Program Learning Goal
Students will be able to synthesize primary literature.

Assessment Measure
Summary Paper and Presentation

Who will develop the Assessment Measure?
Instructor

Assessment Schedule
Fall 2013

Assessment Tool
Biol592PLG1.xlsx

**PLG 2 | BIEEMS | BIOL570**

Program Learning Goal
Students will have a firm understanding of biology theory

Assessment Measure
Final Exam

Who will develop the Assessment Measure?
Kirsten Molsen

Assessment Schedule
Fall 2013

Assessment Tool
Biol570PLG2.doc

**PLG 3 | BIEEMS | BIOL597**

Program Learning Goal
Students will be able to summarize biological concepts both verbally and in writing

Assessment Measure
Final Presentation/paper

Who will develop the Assessment Measure?
Biol 597-Dept.

Assessment Schedule
Spring 2013

Assessment Tool
Biol597PLG3.xlsx

Assessment Summary

<table>
<thead>
<tr>
<th>AY</th>
<th>Program</th>
<th>Goal</th>
<th>Course</th>
<th>Below</th>
<th>Meets</th>
<th>Exceeds</th>
<th>Actions</th>
</tr>
</thead>
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<tr>
<td>2012-2013</td>
<td>BIEEMS</td>
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<td>BIOL597</td>
<td>15</td>
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<td>85</td>
<td>Assessment Summary</td>
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<td>2012-2013</td>
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<tr>
<td>2012-2013</td>
<td>BIEEMS</td>
<td>PLG2</td>
<td>BIOL570</td>
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<td>37.50 %</td>
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Assessment

<table>
<thead>
<tr>
<th>College School</th>
<th>Department</th>
<th>Program Degree</th>
<th>Student Level</th>
<th>Plan Status</th>
<th>Assessment Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSAM</td>
<td>BIOL</td>
<td>MMBEBS</td>
<td>U</td>
<td>Approved</td>
<td>Complete 2012</td>
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</table>

Action Plan

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Program Degree</th>
<th>Completed By</th>
<th>Email Address</th>
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<tbody>
<tr>
<td>2012-2013</td>
<td>MMBEBS</td>
<td>Lisa Hazard</td>
<td><a href="mailto:hazard@email.montclair.edu">hazard@email.montclair.edu</a></td>
</tr>
</tbody>
</table>

Use of Data
In May of each year a committee will develop recommendations for the following year’s assessment and any necessary modification of the particular course structure.

Dissemination Results
Results from each evaluation will be presented at the 1st February dept. meeting of the year.

Course Matrix

<table>
<thead>
<tr>
<th>Program Degree</th>
<th>Course</th>
<th>Goal 1</th>
<th>Goal 2</th>
<th>Goal 3</th>
<th>Goal 4</th>
<th>Goal 5</th>
<th>Goal 6</th>
<th>Goal 7</th>
<th>Goal 8</th>
<th>Goal 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMBEBS</td>
<td>BIOL380</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MMBEBS</td>
<td>BIOL112</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
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<tr>
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<td>BIOL113</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>MMBEBS</td>
<td>BIOL213</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
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<tr>
<td>MMBEBS</td>
<td>BIOL230</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MMBEBS</td>
<td>BIOL490</td>
<td>A</td>
<td>A</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Program Learning Goals

**PLG 1 | MMBEBS | BIOL380**

Program Learning Goal
Students will be able to design experiments, interpret data and develop conclusions

Assessment Measure: Evaluation of Lab Reports
Who will develop the Assessment Measure?: Kirsten Mensen
Assessment Schedule: Spring 2012
Assessment Tool: BIOL380PLG1.xls

**PLG 2 | MMBEBS | BIOL380**

Program Learning Goal
Students will be able to perform appropriate experimental techniques

Assessment Measure: Practical laboratory exam
Who will develop the Assessment Measure?: Kirsten Mensen
Assessment Schedule: Spring 2012
Assessment Tool: BIOL380PLG2.doc

**PLG 3 | MMBEBS | BIOL380**

Program Learning Goal
Students will be able to demonstrate an understanding of core biological concepts

Assessment Measure: Assessment will take place during the last complete exam for the course
Who will develop the Assessment Measure?: Kirsten Mensen
Assessment Schedule: Spring 2012
Assessment Tool: BIOL380PLG3.doc

**PLG 4 | MMBEBS | BIOL490**

Program Learning Goal
Students will be able to present scientific information both orally and in writing

Assessment Measure: Research Proposal (Paper) and Final Presentation
Who will develop the Assessment Measure?: Kirsten Mensen
Assessment Schedule: Spring 2013
Assessment Tool: BIOL490PLG4.xls

**PLG 5 | MMBEBS | BIOL490**
<table>
<thead>
<tr>
<th>Program</th>
<th>Learning Goal</th>
<th>Assessment Measure</th>
<th>Who will develop the Assessment Measure?</th>
<th>Assessment Schedule</th>
<th>Assessment Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students will be able to integrate multiple scientific disciplines when addressing a biological problem.</td>
<td>Research Proposal (Paper) and Final Presentation</td>
<td>Kirsten Monsen</td>
<td>Spring 2013</td>
<td>BIOL490PLG5.xls</td>
</tr>
</tbody>
</table>

## Assessment Summary

<table>
<thead>
<tr>
<th>AY</th>
<th>Program</th>
<th>Goal</th>
<th>Course</th>
<th>Below</th>
<th>Meets</th>
<th>Exceeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>MBMEBS</td>
<td>PLG1</td>
<td>BIOL380</td>
<td>5</td>
<td>5.00 %</td>
<td>27</td>
</tr>
<tr>
<td>2011-2012</td>
<td>MBMEBS</td>
<td>PLG2</td>
<td>BIOL380</td>
<td>33</td>
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<td>67</td>
</tr>
<tr>
<td>2011-2012</td>
<td>MBMEBS</td>
<td>PLG3</td>
<td>BIOL380</td>
<td>42</td>
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<td>58</td>
</tr>
<tr>
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<td>MBMEBS</td>
<td>PLG4</td>
<td>BIOL490</td>
<td>0.00 %</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
<tr>
<td>2012-2013</td>
<td>MBMEBS</td>
<td>PLG5</td>
<td>BIOL490</td>
<td>0.00 %</td>
<td>0.00 %</td>
<td>0.00 %</td>
</tr>
</tbody>
</table>
PART IX
References

http://faculty.washington.edu/krumme/guides/bloom1.html


(Return to Table of Contents)