A. Rationale/Justification for the Course

BIO 111 was created based on the decision to split our five credit hour Introductory Biology I, BIO 110, which is a blended laboratory/lecture course, into two separate courses—one a two credit hour course for the laboratory and the other a three credit hour course for the lecture. By splitting it into two separate courses, this permits students who, for whatever reason, need to re-enroll in either the lecture or laboratory component to do so without repeating both parts of the course, and, there by, avoid paying for all five credits.

B. Course Information

1. Subject Code and Course Number: BIO 111

2. Course Title: Introductory Biology I Laboratory

3. Credit Hours: 2

4. Repeatable for Credit? Yes X No X

5. Catalog Description (Limit to approximately 50 words):

This is the companion laboratory course to BIO 110, the first lecture course in the core sequence for Biology majors and minors. Students will be introduced to the fundamental concepts, principles, processes and techniques upon which all of biology is based and they will learn to competently use the scientific method through the application of these principles, concepts, and processes.

6. Method of Delivery (Check all that apply.)
   a. Standard (lecture/lab) X
   b. Fully Online
   c. Hybrid/ Web Enhanced X

7. Grading Mode: Normal (A-F) X Credit/No Credit

8. Prerequisites: Courses that MUST be completed before a student can take this course. (List by Subject Code, Number and Title.)

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New Course Form

9. Concurrent Prerequisites: Courses listed in #5 that MAY also be taken at the same time as a student is taking this course. (List by Subject Code, Number and Title.)

________________________________________________________________________

10. Corequisites: Courses that MUST be taken at the same time as a student in taking this course. (List by Subject Code, Number and Title.)

BIO 110

________________________________________________________________________

11. Equivalent Courses. A student may not earn credit for both a course and its equivalent. A course will count as a repeat if an equivalent course has already been taken. (List by Subject Code, Number and Title)

________________________________________________________________________

12. Course Restrictions:

a. Restriction by College. Is admission to a specific College Required?

College of Business Yes _________ No ___ x ___
College of Education Yes _________ No ___ x ___

b. Restriction by Major/Program. Will only students in certain majors/programs be allowed to take this course?

Yes _________ No ___ x ___

If “Yes”, list the majors/programs

________________________________________________________________________

c. Restriction by Class Level. Check all those who will be allowed to take the course:

Undergraduate Graduate

All undergraduates _________ x _______ All graduate students
Freshperson _________ x _______ Certificate
Sophomore _________ x _______ Masters
Junior _________ x _______ Specialist
Senior _________ x _______ Doctoral
Second Bachelor _________ x _______ UG Degree Pending
Post-Bac. Tchr. Cert. _________ x _______ Low GPA Admit

Note: If this is a 400-level course to be offered for graduate credit, attach Approval Form for 400-level Course for Credit. Only “Approved for Graduate Credit” undergraduate courses may be included on graduate programs of study.

Note: Only 500-level graduate courses can be taken by undergraduate students. Undergraduate students may not register for 600-level courses.

d. Restriction by Permission. Will Departmental Permission be required? Yes _________ No ___ x ___

(Note: Department permission requires the department to enter authorization for every student registering.)

Miller, New Course
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New Course Form

13. Will the course be offered as part of the General Education Program? Yes X No
If "Yes", attach Request for Inclusion of a Course in the General Education Program: Education for Participation in the Global Community form. Note: All new courses proposed for inclusion in this program will be reviewed by the General Education Advisory Committee. If this course is NOT approved for inclusion in the General Education program, will it still be offered? Yes X No

C. Relationship to Existing Courses

Within the Department:

14. Will this course will be a requirement or restricted elective in any existing program(s)? Yes X No
If "Yes", list the programs and attach a copy of the programs that clearly shows the place the new course will have in the curriculum.

<table>
<thead>
<tr>
<th>Program</th>
<th>Biology Major</th>
<th>Required X</th>
<th>Restricted Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
<td>Biology Major- Secondary Teacher Certification</td>
<td>Required X</td>
<td>Restricted Elective</td>
</tr>
<tr>
<td>Program</td>
<td>Biology Minor</td>
<td>Required X</td>
<td>Restricted Elective</td>
</tr>
</tbody>
</table>

15. Will this course replace an existing course? Yes X No

16. (Complete only if the answer to #15 is "Yes.")
   a. Subject Code, Number and Title of course to be replaced:

   b. Will the course to be replaced be deleted? Yes X No

17. (Complete only if the answer #16b is "Yes.") If the replaced course is to be deleted, it is not necessary to submit a Request for Graduate and Undergraduate Course Deletion.
   a. When is the last time it will be offered? Term_____ Year_____
   b. Is the course to be deleted required by programs in other departments? Contact the Course and Program Development Office if necessary. Yes X No
   c. If "Yes", do the affected departments support this change? Yes X No
      If "Yes", attach letters of support. If "No", attach letters from the affected department explaining the lack of support, if available.

Outside the Department: The following information must be provided. Contact the Course and Program Development Office for assistance if necessary.

18. Are there similar courses offered in other University Departments? Yes X No
If "Yes", list courses by Subject Code, Number and Title

19. If similar courses exist, do the departments in which they are offered support the proposed course?
   Yes X No
   If "Yes", attach letters of support from the affected departments. If "No", attach letters from the affected department explaining the lack of support, if available.

Miller, New Course
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New Course Form

D. Course Requirements
20. Attach a detailed Sample Course Syllabus including:
   a. Course goals, objectives and/or student learning outcomes
   b. Outline of the content to be covered
   c. Student assignments including presentations, research papers, exams, etc.
   d. Method of evaluation
   e. Grading scale (if a graduate course, include graduate grading scale)
   f. Special requirements
   g. Bibliography, supplemental reading list
   h. Other pertinent information.

NOTE: COURSES BEING PROPOSED FOR INCLUSION IN THE EDUCATION FOR PARTICIPATION IN THE GLOBAL COMMUNITY PROGRAM MUST USE THE SYLLABUS TEMPLATE PROVIDED BY THE GENERAL EDUCATION ADVISORY COMMITTEE. THE TEMPLATE IS ATTACHED TO THE REQUEST FOR INCLUSION OF A COURSE IN THE GENERAL EDUCATION PROGRAM: EDUCATION FOR PARTICIPATION IN THE GLOBAL COMMUNITY FORM.

E. Cost Analysis (Complete only if the course will require additional University resources. Fill in Estimated Resources for the sponsoring department(s). Attach separate estimates for other affected departments.)

<table>
<thead>
<tr>
<th>Estimated Resources</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty / Staff</td>
<td>$ _______</td>
<td>$ _______</td>
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<tr>
<td>SS&amp;M</td>
<td>$ _______</td>
<td>$ _______</td>
<td>$ _______</td>
</tr>
<tr>
<td>Equipment</td>
<td>$ _______</td>
<td>$ _______</td>
<td>$ _______</td>
</tr>
<tr>
<td>Total</td>
<td>$ _______</td>
<td>$ _______</td>
<td>$ _______</td>
</tr>
</tbody>
</table>

F. Action of the Department/School and College

1. Department/School
   Vote of Faculty: For 12 Against 2 Abstentions 4
   [Signature]
   Department Head/School Director Signature
   11/9/13 Date

2. College/Graduate School
   A. College
   [Signature] Date
   College Dean Signature
   Date

   B. Graduate School (if Graduate Course)
   [Signature] Date
   Graduate Dean Signature

G. Approval

[Signature] Date
Associate Vice-President for Academic Programming Signature

Miller, New Course
Sept. '09
Course description: BIO 111 is the companion laboratory course for the first lecture course, BIO 110, in the core sequence for Biology majors and minors. Students will be introduced to the fundamental concepts, principles, processes and techniques upon which all of biology is based and they will learn to competently use the scientific method through the application of these principles, concepts, and processes.

Objectives & Outcomes: After successfully completing this course, students will be able to:
(1) Demonstrate appropriate practices of observation, experimentation, and hypothesis testing;
(2) Apply their knowledge of how the diversity of life evolved over time by processes of mutation, selection, and genetic change to the study of the inheritance of genetic traits.
(3) Apply their knowledge of the function of cells and molecules as defined by their structure to studying the effects of physical and chemical changes to their environment.
(4) Apply their knowledge of how interactions between biotic and abiotic factors in ecosystems affect the growth and survival of organisms.
(5) Demonstrate their ability to collect, analyze and interpret data;
(6) Demonstrate both written and verbal skills in the presentation of the findings and conclusions in the form of scientific reports and poster presentations;
(7) Work collaboratively to solve biological problems;
(8) Demonstrate their ability to successfully obtain relevant scientific information from the primary literature;
(9) Make informed decisions about scientific issues relevant to our daily lives.

BIO 111, when taken with BIO 110, satisfies the requirement for a Natural Science Course in the Knowledge of the Disciplines portion of General Education: BIO 111 is designed to enable students to understand: the fundamental concepts, principles, and processes upon which all life is based; the relationship of the course material to their day-to-day world; and how to apply the scientific method. Students are provided with the tools to enable them to become responsible, scientifically literate global citizens and voters. Students who successfully complete BIO 111 have the ability to read critically a popular press article and to evaluate reporting of technological, health-related and environmental issues. This ability empowers students to make better, scientifically-informed life decisions.

Professors: Dr. Bob Winning and Dr. Jamin Eisenbach

Offices: Dr. Winning 401D Science Complex and Dr. Eisenbach 401L Science Complex

Contact: Dr. Winning: 487-4431 rwinning@emich.edu
Dr. Eisenbach: 487-0311 jamin.eisenbach@emich.edu

Office Hrs: Dr. Winning: T & R, 3:30-5:00 pm; W, 1:30-2:30
Dr. Eisenbach: Tues & Thurs 10 am-12 noon

Laboratory Instructors and Study Desk Hours: Each Laboratory Instructor will be available for one hour per week to answer questions regarding laboratory material. You are welcome to go to any of the study desk hours for assistance. Study Desk hours are held in 203 MJ Science Complex

Laboratory: 205/207 Science Complex, at the time you registered


Supplies: You need a stapler, a supply of number two pencils with erasers, a pencil sharpener and a non-programmable calculator – bring the calculator to laboratory every week and your pencils, erasers and calculator to all exams.
**Lab Attendance:** Lab and recitation meet for one 4-hour period each week in 205/207 Mark Jefferson. Attendance is required. There are no make-up labs. During each 4-hour lab period there will be (1) a recitation discussion, and (2) a hands-on research activity. **Please Note:** there are no make-up laboratory exercises. If you miss your assigned laboratory time, you will not be permitted to turn in any assignments based on work from that laboratory exercise. Attending another laboratory section is not permitted.

**Mastering Biology:** Mastering Biology (www.pearsoncustom.com/mi/emu_biology) is the online support system for the textbook, and contains tutorials, animations, activities, and self test quizzes. During the semester, various additional course materials will be posted on Mastering Biology. In addition, there will be online homework assignments to do. These will be available on and submitted through Mastering Biology. Instructions for registering with Mastering Biology have been sent separately.

**Lab Reports:** Four of the laboratory exercises will include a formal laboratory report. Details of and expectations for these reports will be provided as the semester progresses. Typically laboratory reports will be turned in at the beginning of lab on the specified due date. You are required to submit each laboratory report to turnitin.com by 11pm the night before it is due. Grammar and spelling will be used to determine part of your grade - in the professional world these are essential tools needed for you to succeed.

**Activities:** Most recitations (the first hour of the lab period) will include a graded assignment that will be completed and turned in during recitation.

**Laboratory Exams:** There are two 50-point practical laboratory exams during the semester. There are no make-up laboratory exams.

**Lab Quizzes:** Most labs have a quiz in the first 10 min. This quiz covers that day's lab (so be sure to read ahead), and also information from the previous laboratory. Don't be late! You can only take the quiz during this time. There are no make-up quizzes.

**Grades:** YOU ARE REQUIRED TO BRING A PHOTO ID TO EVERY EXAMINATION

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>2 Practical Examinations</td>
<td>100</td>
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<tr>
<td>Lab Reports &amp; Poster Presentation</td>
<td>175</td>
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<tr>
<td>Activities</td>
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<tr>
<td>Lab quizzes</td>
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<td><strong>Total</strong></td>
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</table>

**GRADING SCALE:**

<table>
<thead>
<tr>
<th>Grade</th>
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</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92%</td>
</tr>
<tr>
<td>B</td>
<td>83-86%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82%</td>
</tr>
<tr>
<td>C</td>
<td>73-76%</td>
</tr>
<tr>
<td>C-</td>
<td>70-72%</td>
</tr>
<tr>
<td>D</td>
<td>67-69%</td>
</tr>
<tr>
<td>D-</td>
<td>60-62%</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60%</td>
</tr>
</tbody>
</table>

**COURTESY and LABORATORY CONDUCT:** If you sleep during class, you will be asked to leave. If you use your cell phone during class, you will be asked to leave. If you engage in reading anything other than the textbook, the laboratory manual or your notes during class, you will be asked to leave. Engaging in disruptive behavior of any nature will not be tolerated and may result in a request for you to leave class as well as the involvement of the Department of Public Safety and the Office of Student Judicial Services. Examples of inappropriate classroom conduct include repeatedly arriving late to class, using a cellular telephone, or talking while others are speaking. A more complete explanation can be found by accessing the EMU Student Code of Conduct online at www.emich.edu/sjs/conductcode.html.
COMPUTER USE DURING CLASS: You may use a computer to take notes during, recitation and laboratory. Use of your computer for purposes not directly related to BIO 111 is not permitted (for example, email, watching videos, etc.). If you are observed doing so, you will be asked to leave the class.

CALCULATORS: You should plan to bring a calculator to laboratory each week; however the use of a programmable calculator and or a cell phone is not permitted during exams. Use of either of these during an examination will be construed as cheating and the guidelines explained under academic dishonesty will be applied. You may receive a failing grade and the matter may be turned over to Student Judicial Services.

HEAD PHONES, EAR BUDS, ETC.: Use of any of these during lecture, lecture examinations, laboratory and/or laboratory examinations is not permitted.

ACADEMIC DISHONESTY: Dishonesty, cheating, plagiarism, or deception are not acceptable. If a student engages in any activity that can be characterized as academically dishonest, as defined by the EMU Student Code of Conduct, this student may receive a failing grade and the matter may be turned over to the Office of Student Judicial Services. You may access the EMU Student Code of Conduct online at www.emich.edu/policies/policy.php?id=124&term=student%20conduct. Misuse of clickers (such as using an absent friend’s clicker to answer questions for them) will result in disqualification from bonus points for the remainder of the semester.

EMAIL: Important information you are responsible for will periodically be sent to you via your my.emich email account. This is the only email address to which information will be sent. It is your responsibility to check it frequently.

EMAIL PROTOCOL: When you send an email to your professor or to your Laboratory Instructor, you must write it in a professional manner (proper grammar and punctuation). In addition, your email must:
• start with Dear ______ (insert the name and title, when appropriate, of the person to whom you are emailing);
• include your full name;
• include what course you are in
• include your lab section number;
• include your student ID number.
• include a very brief statement in the subject line (if there is nothing in the subject line we won’t open the email)
If you fail to follow this protocol, your email will not be answered. We will attempt to respond to your emails that adhere to our policy by the next office hour. Please do not email us asking for information that is included in the course syllabus. It is your responsibility to read and know the information in the course syllabus. If you send such an email your email will not be answered. We will strive to respond to your emails that follow this protocol by the end of our next set of office hours.

CELL PHONES: Cell phones must be turned off during lecture, recitation, laboratory and while at the study desk. If you are unwilling to turn your phone off, do not bring it to class. If you are observed using your phone during class, you will be asked to leave. Remember, there is to be no texting during lecture, recitation and laboratory. At each exam, your cell phone must be turned off and placed screen down on the tablet arm of your seat.

STUDY DESK: Each week a Laboratory Instructor will be available at the BIO 111 Study Desk in room 203 Science to tutor you, to help you review material and to go over your performance on exams. There will be a Laboratory Instructor available approximately 12 hours each week. The schedule of these times will be distributed after the first week of classes.
ADDITIONAL HELP: The University Writing Center (115 Halle Library; 487-0694) offers one-to-one writing consulting for both undergraduate and graduate students. Students can make appointments or drop in between the hours of 10 a.m. and 6 p.m. Mondays through Thursdays and from 11 a.m. to 4 p.m. on Fridays. Students should bring a draft of what they’re working on and their assignment sheet. The UWC opens for the Fall 2014 semester on Monday, September 8 and will close on Thursday, December 11.

The UWC also offers small group workshops on various topics related to writing (e.g., Organizing Your Writing; Incorporating Evidence; Revising Your Writing; Conquering Commas; Using APA or MLA). Workshops are offered at different times in the UWC. Visit the UWC page (http://www.emich.edu/uwc) to see our workshop calendar. To register for a workshop, click the link from the UWC page for the type of workshop you wish to attend.

The UWC also has several satellite sites across campus. These satellites provide writing support to students within the various colleges. For more information about our satellite locations and hours, visit the UWC website: http://www.emich.edu/uwc.

The Academic Projects Center (116 Halle Library) also offers one-to-one writing consulting for students, in addition to consulting on research and technology-related issues. The APC is open 11 a.m. to 5 p.m. Mondays through Thursdays for drop-in consultations. Additional information about the APC can be found at http://www.emich.edu/apc. Students visiting the Academic Projects Center or any of the satellites of the University Writing Center should also bring with them a draft of what they're working on and their assignment sheet.

STUDENTS WITH DISABILITIES: If you wish to be accommodated for your disability, policy #8.3 of the EMU Board of Regents requires that you must first be registered with the Disability Resource Center (DRC) in room 240-K Student Center (telephone 734.487.2470). Accommodations for students with disabilities can only be granted after the SWD provides Drs. Winning and Eisenbach with official notification. No retroactive accommodations are made.

COMMUNICATING GRADES: FERPA (the Family Education Rights and Privacy Act) does not permit us to discuss grades with anyone but you and anyone within EMU to whom written permission has been granted (ECA, Holman Learning Center, EMU Athletics, etc.). To ensure that you track your grades, a spreadsheet with your grades (your privacy will be protected) will be posted each week during Lab. It is your responsibility to immediately bring any grade issues to the attention of your Laboratory Instructor.

F and J visa students, you have 10 days to report any:
- Changes in your name, residential address, academic status (full or part-time enrollment), program of study or completion date, student level (undergraduate to graduate assistant position).
- Intent to transfer to another university.
- Probation or disciplinary action due to a criminal conviction.

In accordance with new federal regulations, these must be reported to EMU Office of International Students (OIS), 229 King Hall within 10 days of occurrence; failure to do so may result in the termination of your SEVIS record and even arrest and deportation. You may not drop all courses or drop below the minimum credit hours without prior OIS approval. If you have any questions or concerns, contact the OIS at 487-3116, not your instructor.
**BIO 111 INTRODUCTORY BIOLOGY I Laboratory 2014**

**SCHEDULE OF LABORATORY EXERCISES**

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Elements of the Scientific Method and Primary Literature Searches</td>
</tr>
<tr>
<td>2</td>
<td>Understanding Primary Literature</td>
</tr>
<tr>
<td>3</td>
<td>Osmosis and Diffusion (a report will be expected on this lab)</td>
</tr>
<tr>
<td>4</td>
<td>Enzymes (a report will be expected on this lab)</td>
</tr>
<tr>
<td>5</td>
<td>Respiration and Photosynthesis (a report will be expected on this lab)</td>
</tr>
<tr>
<td>6</td>
<td>Molecular Biology Part 1</td>
</tr>
<tr>
<td>7</td>
<td>Molecular Biology Part 2</td>
</tr>
<tr>
<td>8</td>
<td>Mitosis &amp; Meiosis</td>
</tr>
<tr>
<td>9</td>
<td>Mendelian Genetics (a report will be expected on this lab)</td>
</tr>
<tr>
<td>10</td>
<td>Natural Selection</td>
</tr>
<tr>
<td>11</td>
<td>Organismal Interactions (your poster will be based on these data)</td>
</tr>
<tr>
<td>12</td>
<td><em>no scheduled lab exercise</em></td>
</tr>
<tr>
<td>13</td>
<td>Poster Presentations</td>
</tr>
</tbody>
</table>

**LABORATORY ASSIGNMENTS:** Some laboratory exercises have assignments that will be submitted. These assignments must be submitted electronically to turnitin.com by 11pm the night before they are due. To be eligible to receive full credit, your assignments must be submitted by the specified day and by the specified time to both your Laboratory Instructor and to turnitin.com. Due dates will be announced in lecture and laboratory, 1-2 weeks in advance. Late laboratory assignments may be submitted, but there will be penalties. If it is submitted before 4:30 P.M. the day after it is due, it will only be eligible for up to a maximum of 75% of the points. Two day late assignments (before 4:30PM of the second day after it is due) will only be eligible for up to a maximum of 50% of the points. No credit will be given after 4:30 P.M. the second day after the assignment was due. Correct spelling and grammar will be used as part of the criteria for determining your grade on each assignment – so make sure you run grammar and spell check as well as proof read it your self. Data entries must be made in your lab book in pen, no pencil will be accepted. The use of whiteout (correction fluid) is not permitted. To make a correction, cross out (with 1 line) the incorrect item and write in the correction directly above the crossed out entry.

**ACADEMIC INTEGRITY:** Be advised that if you are re-taking this course, you cannot re-use any portion of your old laboratory reports. Recycling old work is academically dishonest. A first time offense will result in a “0” for the assignment. Additional violations may result in a failing grade. Using information without paraphrasing (writing in your own words) is plagiarism. In an effort to prevent plagiarism, we require your lab reports be submitted electronically to turnitin.com.

**LABORATORY SAFETY:** Eating or drinking is never permitted in the laboratory. Shorts, short skirts or open toed shoes are not to worn in the laboratory. The wearing of either of these will result in a 0 for that laboratory. During several laboratory exercises you may be required to wear safety glasses. If you fail to adhere to laboratory safety requirements, you will not be permitted to do the laboratory exercise.

BIO 111 course lecture notes, course handouts, outlines, and/or any other BIO 111-supplied materials are the intellectual property of the faculty. Therefore, the public posting, selling of, or in any other way, distribution of these materials without the express written permission of the instructors is not permitted. We reserve the right to take legal action for any copyright infringement.

**There are no exceptions to these rules.**