Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

Updated 11/25/14

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: __________________________________________________
2. Date submitted: ________________________________________________
3. Date approved: 2/4/2016 Date revised: ____________________________
4. Department/discipline: Science
5. Department(s) endorsement(s): ____________________________________
   (Signatures of the person(s) providing the endorsement are required.)
6. Course Title: Investigative Science I
   Abbreviated course title (25 characters or less):
7. Course Designator: SCI
8. Course Level: 1280
9. Number of Credits: Lecture: 3 Lab: 1
10. Control Number (on site): 24
    Control Number (online): 0
11. Catalog/Course description:

   This course is an introduction to the science areas of: life, biology, and engineering for the aspiring elementary education teachers. Basic concepts in chemistry, technology and biology will be covered with an emphasis on the scientific methods, inquiry based with hands on exercises in a lab setting. Anishinaabe aspects of science will be explored. Lecture and lab.
12. Course prerequisite(s) or co-requisite(s):
   Prerequisite(s): None
   Co-requisite: None
13. Course Materials (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

   1. Appropriate textbook and other materials including laboratory manual to be
decided by instructor or Biology department.

14. **Course Content** (Provide an outline of major topics covered in course)

1. Understandings about science
2. Scientific inquiry and investigation
3. Understandings about engineering
4. Engineering design
5. Careers and contributions in science and engineering
6. Mutual influence of science, engineering and society
7. The role of mathematics and technology in science and engineering
8. Levels of organization in biology
9. Cells
10. Ecosystems
11. Flow of energy and matter
12. Biological reproduction
13. Genetic variation
14. Biological evolution
15. Interactions with the environment
16. Health and disease

15. **Learning Goals, Outcomes, and Assessment**
   At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

   A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)

   B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)

   C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)

   D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one’s own traditions and culture, knowledge of others’ traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

   *Course learning outcomes will fulfill the identified competencies:*

   *Course Learning Outcomes:*
Upon completion of this course, students will be able to:

1. Generate a scientific question and plan an appropriate scientific investigation to answer that question. (B, C)
2. Describe how science and engineering influence and are influenced by local traditions and beliefs. (B, D)
3. Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system. (B, C)
4. Recognize that cells carry out life functions, and that these functions are carried out in a similar way in all organisms, including animals, plants, fungi, bacteria, and protists. (B, C)

16. Minnesota Transfer Curriculum (MnTC): If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See [www.mntransfer.org](http://www.mntransfer.org)

Goal Area(s): 3

Goal and Outcomes:
Goal: Natural Sciences
Goal: Improve students’ understanding of natural science principles and of the methods of scientific inquiry.

Outcomes:
1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory experiments.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate life science issues from a societal and cultural perspective and ask questions about evidence presented.
Complete the following only if you are proposing a new course:

1. Planned pattern of offering:
2. Rationale for course: If this course is an ADDITION or replacement to current offerings, add a detailed explanation of the necessity for the change.
3. Does this course overlap with any course(s) offered at FDLTCC? If so, justify such duplication or indicate other adjustments to be made. Obtain signatures from affected departments.
4. What is the apparent or expressed student need for this course?
5. If this course includes a Native American or specifically Anishinaabe component list campus resource person/s—i.e., campus cultural/spiritual resource person/s and, if necessary, elder/s—consulted and include specific comments and written responses as appropriate.
6. Are there any additional licensing/certification requirements involved?
   a. Provide a copy of the required licensing/certification standards to the AASC chair and to the vice president of academic affairs.
   b. Attach the required documentation to show course meets required licensing/certification standards.
7. What types of tutoring will be made available through the CAA to students taking this course?
8. How will the course be evaluated?
9. Special resources—e.g. faculty, space, equipment, library, etc.
10. Special course fees:
    a. Provide a copy of the required licensing/certification standards to the AASC chair and to the vice president of academic affairs.
    b. Attach the required documentation to show course meets required licensing/certification standards.
11. Relationship of course to the college mission statement and goals.
12. Relationship of course to the department’s mission statement and goals.
13. Relationship of course to colleges/university offerings (include tribal colleges).

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<tr>
<th>College or University</th>
<th>Course Number &amp; Title</th>
<th>Credits Awarded</th>
<th>General Education</th>
<th>Program</th>
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