*October 2022*

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| * The college deadline to submit the completed Liberal Education Course Proposal form to Academic Affairs is February 1, 2023. Please consult your college and department for internal deadlines. Note: If the course is new, the department must also submit the separate New Course Proposal through the college's curriculum review and approval process for submission to Academic Affairs (details, dates, form: <https://evcaa.d.umn.edu/curriculum-management/course-proposal-processes>).
* Form approvals may be submitted through email as an attachment. Signatures may be provided on the form or with approval documented within the email message.
* Departments and colleges may involve curriculum committees as advisory in their review procedures. The campus Liberal Education Subcommittee reviews all Liberal Education course proposals for Academic Affairs.

**Category Description**Liberal education courses in the natural sciences teach students how to formulate and test scientific hypotheses, interpret experimentally obtained data, and draw conclusions from the data. They also create a link between scientific ideas and problems that arise in the everyday world.Courses comprised of a lecture and a lab will use SLOs #1, 2, and 3.A lecture-only course must use SLO #1, and may opt to use SLO #2 and/or 3.  SLO 1: Students identify concepts and principles that comprise the foundational knowledge of the discipline.SLO 2: Students explain how scientific inquiry is used to address questions about natural phenomena.SLO 3: Students will apply the scientific method to address questions about natural phenomena. |
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|  | Name (print) | Signature | Date |
| Department Head/Representative |  |  |  |
| Dean *(or college designee)* |  |  |  |
| Academic Affairs |  |  |  |
|  |  |  |  |
| Effective Term | Fall 2023 |
| Faculty Contact |  |
| Course Designator |  |
| [Catalog Number](http://www.dumn.edu/vcaa/Coursenumbering.html)  |  |
| Course Title  |  |
| Number of credits |  |
| Course Description*(Must match approved course or course proposal description)* |  |
| Has this course been approved by Academic Affairs? |  |
| How often will the course be offered? (every year, every other year) |  |
| Does this course have a lab? |  |
| What other Liberal Education categories (if any) is this course proposed for or has it been approved for? |  |
| **Category Criteria**This section asks how the course will address all of the criteria for this category. Please use examples to help illustrate that the course will substantially address the following criteria.*100 word minimum for each item response.* |
| Describe how the course will help students understand the major concepts and principles of a natural science field of study and how they were developed through rigorous processes of scientific hypothesis testing.[response required] |
| Describe how the course will provide problem-solving experiences that increase quantitative skills and actively engage students in development and testing hypotheses of natural phenomena by gathering data, testing and interpreting quantitative data with statistical analysis, and formulating a valid conclusion. [response required] |
| Describe how the course will situate content so students understand the final step in the scientific process, the development of a scientific theory supported by consilience of evidence assembled into a unified explanatory argument. [response required] |
| **Course Assessment** This section asks how the course will assess students’ proficiency in each student learning outcome (SLO) associated with this category. A full response to each question will include two parts as identified below and described in the Liberal Education Assessment Course Proposal Guide: <https://z.umn.edu/libedproposalassessguide>.1. A clear statement of which course assessment(s) (or portion of an assessment) will provide a clear measure of the SLO, and why that assessment is a good fit for that SLO.
2. A brief description of what students must do/achieve on the assessment to have reached the level of proficiency for the SLO described on the rubric for this category. Level 1 is typically used as the proficiency for lower-division courses; Level 3 is common for upper-division courses: <https://assessment.d.umn.edu/liberal-education-assessment/category-rubrics>.

Note: For new courses faculty are encouraged to use the Liberal Education category SLOs as the course learning outcomes on the course proposal.  |
| SLO 1: Describe (1) how students will " identify concepts and principles that comprise the foundational knowledge of the discipline" and (2) how you will determine whether they have achieved proficiency as described in the category rubric. [response required] |
| SLO 2: Describe (1) how students will "explain how scientific inquiry is used to address questions about natural phenomena." and (2) how you will determine whether they have achieved proficiency as described in the category rubric. [response required for course with lab; optional for lecture-only course] |
| SLO 3: Describe (1) how students will "apply the scientific method to address questions about natural phenomena" and (2) how you will determine whether they have achieved proficiency as described in the category rubric. [response required for course with lab; optional for lecture-only course] |