

UNIVERSITY CURRICULUM COMMITTEE

Proposal for New Course

1. Is this course being proposed for Liberal Studies designation? Yes ☐ No ☒
If yes, route completed form to Liberal Studies.
2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) SPRING 2007
[See effective dates schedule.](#)
3. College CENS 4. Academic Unit Biological Science
5. Course subject/catalog number BIO 186 6. Units 2
7. Co-convened with _____ 6a. Date approved by UGC _____
(Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)
8. Cross-listed with _____
(Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)
9. Long course title Skills For Success In Science
(max 100 characters including spaces)
10. Short course title (max. 30 characters including spaces) Skills For Success In Science
11. Catalog course description (max. 30 words, excluding requisites).

Tools and strategies for succeeding in the University culture and in introductory science courses. Designed for students entering science courses of intellectual inquiry. In-depth study of a substantive problem.

12. Grading option: Letter grade ☒ Pass/Fail ☐ or Both ☐
(If both, the course may only be offered one way for each respective section.)
13. Is this a topics course? Yes ☐ No ☐
14. May course be repeated for *additional* units? yes ☐ no ☒
a. If yes, maximum units allowed? _____
b. If yes, may course be repeated for additional units in the same term? (ex. PES 100) yes ☐ no ☐
i. If yes, max units/term _____

15. Please check **ONE** of the following that most appropriately describes the course:

- a. Lecture w/o unit embedded lab ☐ Lecture only ☒ Lab only ☐ Clinical ☐ Research ☐
Seminar ☐ Field Studies ☐ Independent Study ☐ Activity ☐ Supervision ☐
- b. In addition to the above, it will also be taught: Web ☐ ITV ☐ Hybrid web ☐ Hybrid ITV ☐

16. Prerequisites (must be completed **before** proposed course) _____

17. Corequisites (must be completed **with** proposed course) _____

18. If course has no requisites, will all sections of the course require (check one):

instructor consent ☒ department consent ☐ no consent ☐

19. Is the course needed for a plan of study (major, minor, certificate?) yes ☐ no ☒

Name of new plan? _____

Note: A new plan or plan change form must be submitted with this request.

20. Does course duplicate content of existing courses within or outside of your college? yes ☐ no ☒

If yes, list any courses this course may have duplicative material with and estimate percentage of duplication: _____

Please attach letters of support from each department whose course is listed above.

21. Will this course affect other academic plans, academic units, or enrollment? yes ☐ no ☒

If yes, explain in justification and provide supporting documentation from the affected departments.

22. Is a potential equivalent course offered at a community college (lower division only)? yes ☐ no ☒

If yes, does it require listing in the *Course Equivalency Guide*? yes ☐ no ☐

Please list, if known, the institution, subject/catalog number of the course. _____

23. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

1) This course provides much needed support for minority students entering introductory science courses and majors. It has been offered several times under a University course number, BIO 199. It has served the whole spectrum of students from those falling through the cracks to others enrolled in the honors program. The course has been shown to increase student grades in their introductory Biology courses by a statistically significant margin.

2) The course is designed to begin in the fifth week of the semester in order to allow students to get back their first midterm in their introductory science courses.

3) The course has been offered at a time that overlaps as little as possible with the scheduling of introductory science courses and their labs so that students have the option of staying in their science course while still enrolled in this BIO 199 course.

4) See attached course syllabus.

24. Names of current faculty qualified to teach this course **Dr. Stefan Sommer**

25. If course will require additional faculty, space, or equipment, how will these requirements be satisfied? _____

26. Will present library holdings support this course? yes ☒ no ☐

If the course being submitted for approval is NOT a LIBERAL STUDIES course, please go to step 42.

LIBERAL STUDIES ONLY

Contact name: _____

Contact email: _____

Dept. Chair name: _____

Dept. Chair email: _____

College Contact name : _____

College Contact email: _____

27. This course is a ☐ Single section ☐ Multi-section

28. List names of faculty who may teach this course: _____

29. Section enrollment cap: _____

If this course is being submitted for approval as a new LIBERAL STUDIES course, please complete questions 30-33.

OR

If this course is being submitted for approval as a new JUNIOR LEVEL WRITING course, please complete questions 37-38.

OR

If this course is being submitted for approval as a new SENIOR CAPSTONE course, please complete questions 39-41.

NEW LIBERAL STUDIES COURSE

30. Thematic Focus (check all that apply): *If a topics course, must apply to ALL sections.*

Environmental Consciousness ☐ Technology and Its Impact ☐ Valuing the Diversity of Human Experience ☐

31. Distribution Block (check one): *If a topics course, must apply to ALL sections.*

Aesthetic and Humanistic Inquiry ☐ Cultural Understanding ☐ Lab Science ☐

Science/Applied Science ☐ Social and Political Worlds ☐

32. Skills (check two): *If a topics course, must apply to ALL sections.*

Creative Thinking ☐ Critical Reading ☐ Effective Oral Communication ☐ Effective Writing ☐ Critical Thinking ☐

Ethical Reasoning ☐ Quantitative/Spatial Analysis ☐ Scientific Inquiry ☐ Use of Technology ☐

33. Is this a topics course? Yes ☐ No ☐

If YES, please complete questions 34-36. If NO, please go to question 42.

TOPICS COURSE ONLY

34. Identify the Student Learning Outcomes that will be found in ALL topic syllabi offered under this course number. _____

35. Explain by what method(s) Student Learning Outcomes will be assessed in ALL topic syllabi offered under this course number.

36. Please attach an example of a Topic Syllabus offered under this course number.

NEW JUNIOR LEVEL WRITING COURSE (refer to question 19)

37. To which degree programs offered by your department/academic unit does this proposal apply? _____
38. Do you intend to offer ABC 300 and ABC 300W? yes ☐ no ☐
If no, please submit a course delete form for the ABC 300.

GO TO question 42

NEW SENIOR CAPSTONE COURSE (refer to question 19)

39. To which degree programs offered by your department/academic unit does this proposal apply? _____
40. Does this proposal replace or modify an existing course or experience? yes ☐ no ☐
If yes, which course(s)? _____
41. Do you intend to offer ABC 400 and ABC 400C? yes ☐ no ☐
If no, please submit a course delete form for the ABC 400.

42. Approvals

Department Chair (if appropriate)	Date
Chair of college curriculum committee	Date
Dean of college	Date

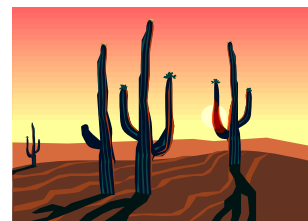
For Committees use only

For Liberal Studies Committee	Date
Action taken: _____ Approved as submitted _____ Approved as modified	

For University Curriculum Committee	Date
Action taken: _____ Approved as submitted _____ Approved as modified	

Syllabus

Department:	Dept. of Biological Sciences, CENS
Course Number:	BIO 186: Skills for Success in Science
Credit Hours:	3 hours class per week, 2 credit hours
Time:	Mondays 3:00–4:50 and Wednesdays 3:00–3:50
Place:	Room 200 Liberal Arts (Building 18)
Course Dates:	BIO 186 runs from 10/9/06 through 12/12/06



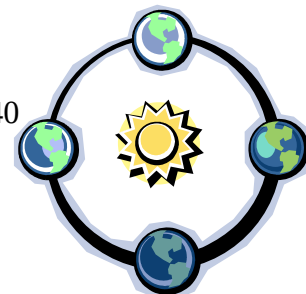
Instructor:	Dr. Stefan Sommer Dept. of Biological Sciences College of Engineering & Natural Sciences Northern Arizona University, Campus Box 5640
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Office Hours:	Mon. 2:00-3:00 Wed. 4:00-5:00 - and by appointment
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Office:	Room 228 Peterson Hall (Building 22)
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Phone:	523-4463 - Call anytime. If I am not in, leave message & phone number and I will return your call.
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E-mail:	Stefan.Sommer@nau.edu
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Course Description:

BIO 186 is for students who are entering biology, chemistry, or related science fields. This course focuses on basic science skills and content knowledge needed to succeed in introductory science courses like BIO 181, CHM 151, and others. The course is designed to be a bridge into the sciences for new students who have not had the opportunity to learn the customs and cultural requirements of the University and scientific research communities. BIO 186 will place special emphasis on providing the cultural skills that students will need for success in their science related field of interest. There are no prerequisites for this course.

Course Objectives:

This course will give you the opportunity to develop an understanding of the knowledge, techniques, and culture of science. It will guide you toward a solid understanding of the scientific method, science as a process, and the strengths and weaknesses of this approach to understanding the world.



We will explore some of the fundamental discoveries and experiments that have lead to our current understanding of the world and how it functions. Along the way we will practice the basic principles of reason, logic, and math that are used across the sciences. We will also work to develop the skills of critical thinking and synthesis that will allow you to evaluate scientific data and to assess scientific information as future citizens of the world.

You will also be given the opportunity to develop the writing and verbal communication skills that you need for success in the sciences and in the University community. The skills and knowledge base that

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you develop during this course are essential for students who wish to succeed in the sciences. These skills will also provide a strong foundation for students who wish to enter graduate or professional schools upon graduation.

Course Policies:

Assessment of Student Progress: Evaluation of your progress in achieving the course objectives will be based upon:

- 1) your participation and verbal communication skills during class discussions
- 2) your written communication skills
- 3) your performance on problem sets and written exercises
- 4) your performance on quizzes and examinations

Criteria for assessment are described below:

1. Class Participation and Verbal Communication Skills (20%): There will be two interactive lecture-discussion sessions each week. Questions and discussion are strongly encouraged during the lecture period. A reading assignment from the book and/or from supplementary materials will be given for each session. You will be expected to read these materials in advance of every session and come prepared to answer questions and join in active discussion of the material. You are expected to actively join in every discussion by formulating clear questions and making clear contributions. In addition, you will be given the opportunity to make a presentation to the class on a scientific topic of your choice during the last week of the semester. During the week of October 23rd to 30th and again during the last week of the semester, you will meet with the instructor to evaluate your own progress in both the quantity and quality of your oral contributions to the class.

2. Writing Assignments (20%): A term paper (4-5 pages) will be assigned on a scientific topic of your choice. A grade will be given for first drafts and then the instructor will evaluate your progress from the first to the final draft. The purpose of this assignment is to improve your ability to communicate knowledge and understanding through writing.

3. Written Exercises and Problem Sets (20%): Each week there will be one or two written exercises from the Chapters in the “How to Study Science” textbook. These will be due on Tuesdays. There will also be on-line problem sets that relate to the science material presented in class. These will provide hands-on practice with the calculations and other material discussed during lecture.

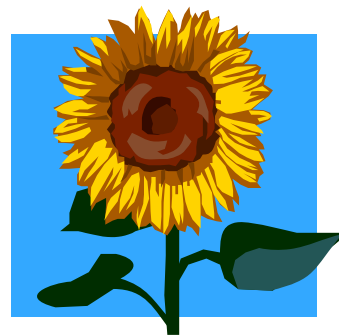
4. Examinations (40%): Occasional quizzes and a final exam will be given. Quizzes may include multiple choice, completion, short answer, and essay questions. The final exam will be cumulative and comprehensive. Exam questions will come from material presented in the books and in lecture. Makeup quizzes can be arranged if a legitimate medical or other reason can be documented.

5. Grading Policy:

- Your course grade will be based on your total number of accumulated points.
- Points will come from class participation, writing assignments, exercises, quizzes, and final exam.
- See Table 1 for a summary of point sources.
- In general, the following percentages will correspond to letter grades: 90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D, <60%=F.

Table 1. Percentage breakdown of the source of points toward your classroom grade.

<u>Source:</u>	<u>Percentage of Final Grade</u>
verbal communication points	20 %
written communication	20
exercises & problem sets	20
quizzes	20
<u>final exam</u>	<u>20</u>
	100 %



6. Attendance: Students admitted to membership in the university community accept the responsibility to attend classes. Therefore, attendance at all classes for which you are registered is required and is your responsibility. You are responsible for all work missed because of absence. Instructors are under no obligation to make special arrangements for students who have been absent. If absence from class is unavoidable, you are responsible for reporting the reason for your absence to the instructor. Roll will be taken in class periodically, and you may receive a grade of F if you miss more than 5 classes during the semester.

7. Native American Student Services: The Native American Student Services (NASS) office provides guidance for Native American students in the way of counseling, access to computers and other resources, and connection to other Native American students on campus. The people at NASS are eager to help you. They are located on the second floor of the Union, 523-8086.

8. Learning Assistance: The Learning Assistance Center (LAC) offers a number of academic services for undergraduate students including tutoring and reading and study skills workshops. The LAC also provides instruction in the use of computers. Students are encouraged to contact the Learning Assistance Center, on north campus at: 523-5524 and on south campus at: 523-7391. Freshman advisement different than “learning assistance” and is provided by the Gateway Center at: 523-4821 as well as by individual Departments.

9. Reading Assignments: Each lecture on the syllabus is followed by the page(s) in the assigned texts, Drewes & Milligan (2003) and Garrod & Larimore (1997), and/or supplementary readings that correspond to the material being covered. Make sure that you read the material on this list **before** coming to lecture so that you will understand the lecture and be able to contribute to the discussion of this material. Exams and quizzes will cover material from the lectures **and** these reading assignments.

10. Plagiarism & Cheating: Plagiarism is any act of claiming the work of others as one’s own. Both plagiarism and cheating are serious offenses in violation of NAU’s “Academic Integrity” policy (see page 6 below) and can result in failing the course and even expulsion.

11. If you have **questions** about course material, assignments, or other course related subjects please contact me - the sooner the better - so that we can work things out.

Textbooks:

HS = Drewes, F. and K.L.D. Milligan. 2003. How to Study Science, 4th Edition. McGraw Hill Higher Education Publishing Company, Dubuque, Iowa, USA, 121 pp.

FP = Garrod, A. and C. Larimore. 1997. First Person First Peoples: Native American College Graduates Tell Their Life Stories. Cornell University Press, Ithaca, New York, USA, 251 pp.

TENTATIVE LECTURE SCHEDULE

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<u>DATE</u>	<u>TOPIC</u>	<u>READING¹</u>
Oct. 9	Introductions, the scientific method, summer and winter rain	
11	Culture and expectations of science courses and college instructors	HS Chs. 1 & 2
16	Adaptation stories of scarlet gilia: pollination & reproduction	
	<u>Discussion</u> : many paths	FP ix - 63
Oct. 18	Learning styles and personal goals	HS Chs. 3 & 4
23	In the beginning there was a big bang	
	<u>Discussion</u> : Natural connections and cultural adaptation	FP 64 - 89
25	Learning and note taking skills	HS Ch. 5
30	Library skills, Exponential growth and net primary productivity	
	<u>Discussion</u> : Facing our fears	FP 93 - 114
Nov. 1	Studying skills and spending time wisely	HS Chs. 6 & 7
6	Webs can snare and webs can protect: a spider story	
	<u>Discussion</u> : Strength of spirit & Why didn't you teach me?	FP 115 - 153
Nov. 8	Speaking the language: text, terms, graphs, and figures	HS Chs. 8 & 9
13	Bioremediation using plants and microorganisms	
	<u>Discussion</u> : The web of Life	FP 154 - 168
15	Speaking the language: analyzing graphs and figures	HS Chs. 10 & 11
Nov. 20	The story of Minamata disease	
	<u>Discussion</u> : The many colored trail toward home	FP 171 - 188
22	Speaking the language: writing effectively	HS Ch. 12
27	Test taking strategies and Problem Solving Skills	HS Chs. 13, 14 & 15
	<u>Discussion</u> : Taking your grub box to the mountain	FP 189 - 211
29	student presentations	HS Ch. 13
Dec. 4	student presentations	
	<u>Discussion</u> : Full circle	FP 212 - 250
6	student presentations	
Dec. 12	FINAL EXAM (Tuesday, 3:00 p.m. - 5:00 p.m.)	

¹ All assigned pages should be read from the textbook **prior to the lecture** for which they are assigned. This is of critical importance because the lectures will be given with the assumption that you have already been exposed to the material once and that you can engage in active discussion of it.



NORTHERN ARIZONA UNIVERSITY
POLICY STATEMENTS

SAFE ENVIRONMENT POLICY

NAU's Safe Working and Learning Environment Policy seeks to prohibit discrimination and promote the safety of all individuals within the university. The goal of this policy is to prevent the occurrence of discrimination on the basis of sex, race, color, age, national origin, religion, sexual orientation, disability, or veteran status and to prevent sexual harassment, sexual assault or retaliation by anyone at this university.

You may obtain a copy of this policy from the college dean's office. If you have concerns about this policy, it is important that you contact the departmental chair, dean's office, the Office of Student Life (523-5181), the academic ombudsperson (523-9358), or NAU's Office of Affirmative Action (523-3312).

STUDENTS WITH DISABILITIES

If you have a documented disability, you can arrange for accommodations by contacting the office of Disability Support Services (DSS) at 523-8773 (voice), 523-6906 (TTY). In order for your individual needs to be met, you are required to provide DSS with disability related documentation and are encouraged to provide it at least eight weeks prior to the time you wish to receive accommodations. You must register with DSS each semester you are enrolled at NAU and wish to use accommodations.

Faculty are not authorized to provide a student with disability related accommodations without prior approval from DSS. Students who have registered with DSS are encouraged to notify their instructors a minimum of two weeks in advance to ensure accommodations. Otherwise, the provision of accommodations may be delayed.

Concerns or questions regarding disability related accommodations can be brought to the attention of DSS or the Affirmative Action Office.

INSTITUTIONAL REVIEW BOARD

Any study involving observation of or interaction with human subjects that originates at NAU—including a course project, report, or research paper—must be reviewed and approved by the Institutional Review Board (IRB) for the protection of human subjects in research and research-related activities.

The IRB meets once each month. Proposals must be submitted for review at least fifteen working days before the monthly meeting. You should consult with your course instructor early in the course to ascertain if your project needs to be reviewed by the IRB and/or to secure information or appropriate forms and procedures for the IRB review. Your instructor and department chair or college dean must sign the application for approval by the IRB. The IRB categorizes projects into three levels depending on the nature of the project: exempt from further review, expedited review, or full board review. If the IRB certifies that a project is exempt from further review, you need not resubmit the project for continuing IRB review as long as there are no modifications in the exempted procedures.

A copy of the *IRB Policy and Procedures Manual* is available in each department's administrative office and each college dean's office. If you have questions, contact Melanie Birck in the Office of Grant and Contract Services at 523-8288.

ACADEMIC INTEGRITY

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The university takes an extremely serious view of violations of academic integrity. As members of the academic community, NAU's administration, faculty, staff and students are dedicated to promoting an atmosphere of honesty and are committed to maintaining the academic integrity essential to the education process. Inherent in this commitment is the belief that academic dishonesty in all forms violates the basic principles of integrity and impedes learning. Students are therefore responsible for conducting themselves in an academically honest manner.

Individual students and faculty members are responsible for identifying instances of academic dishonesty. Faculty members then recommend penalties to the department chair or college dean in keeping with the severity of the violation. The complete policy on academic integrity is in Appendix F of NAU's *Student Handbook*.

ACADEMIC CONTACT HOUR POLICY

The Arizona Board of Regents Academic Contact Hour Policy (ABOR Handbook, 2-206, Academic Credit) states: "an hour of work is the equivalent of 50 minutes of class time...at least 15 contact hours or recitation, lecture, discussion, testing or evaluation, seminar, or colloquium as well as a minimum of 30 hours of student homework is required for each unit of credit."

*The reasonable interpretation of this policy is that for every credit hour, a student should expect, on average, to do a **minimum** of two additional hours of work per week; e.g., preparation, homework, studying.*

