FORMAT 1

Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).

See http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/ for a complete description of the rules governing curriculum & course changes.

TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

Department	**GPMSL**	**College/School**	**SFOS**
Prepared by	**Eric Collins**	**Phone**	**x6482**
Email Contact	**recollins@alaska.edu**	**Faculty Contact**	**Eric Collins**

1. ACTION DESIRED (CHECK ONE): Trial Course [X] New Course [ ]

2. COURSE IDENTIFICATION: Dept **MSL** Course # **194** No. of Credits **3**

Justify upper/lower division status & number of credits: **Lecture based course for students with little or no science background**

3. PROPOSED COURSE TITLE: **Astrobiology: Planets, Oceans, and Life**

4. To be CROSS LISTED? *YES/NO* **NO** If yes, Dept: [ ] Course # [ ]

NOTE: Cross-listing requires approval of both departments and deans involved. Add lines at end of form for additional required signatures.

5. To be STACKED? *YES/NO* **NO** If yes, Dept. [ ] Course # [ ]

How will the two course levels differ from each other? How will each be taught at the appropriate level?:

Stacked course applications are reviewed by the (Undergraduate) Curricular Review Committee and by the Graduate Academic and Advising Committee. Creating two different syllabi—undergraduate and graduate versions—will help emphasize the different qualities of what are supposed to be two different courses. The committees will determine: 1) whether the two versions are sufficiently different (i.e. is there undergraduate and graduate level content being offered); 2) are undergraduates being overtaxed?; 3) are graduate students being undertaxed? In this context, the committees are looking out for the interests of the students taking the course. Typically, if either committee has qualms, they both do. More info online – see URL at top of this page.

6. FREQUENCY OF OFFERING: **Every Spring**

Fall, Spring, Summer (Every, or Even-numbered Years, or Odd-numbered Years) — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (AY2013-14 if approved by 3/1/2013; otherwise AY2014-15) **Spring 2015**

8. COURSE FORMAT:

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, **any core course compressed to less than six weeks must be approved by the Core Review Committee.**

COURSE FORMAT: (check all that apply)		*1*		*2*		*3*		*4*		*5*	X	*6 weeks to full semester*
OTHER FORMAT (specify)												
Mode of delivery (specify lecture, field trips, labs, etc)	lecture											

9. CONTACT HOURS PER WEEK:	3	LECTURE hours/weeks		LAB hours /week		PRACTICUM hours /week

Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/guidelines-for-computing-/ for more information on number of credits.

OTHER HOURS (specify type)	

10. COMPLETE CATALOG DESCRIPTION including dept., number, title, credits, credit distribution, cross-listings and/or stacking (50 words or less if possible):

Example of a complete description:

FISH F487 W, O Fisheries Management
3 Credits Offered Spring
Theory and practice of fisheries management, with an emphasis on strategies utilized for the management of freshwater and marine fisheries. *Prerequisites: COMM F131X or COMM F141X; ENGL F111X; ENGL F211X or ENGL F213X; ENGL F414; FISH F425; or permission of instructor.* Cross-listed with NRM F487. (3+0)

MSL F194, Astrobiology, Offered Spring
Study of life in the universe from a transdisciplinary perspective, bringing together insights from physics, astronomy, geology, chemistry, and biology. Topics include the evolution of the universe, planets, oceans and life. Past and present oceans found in the Solar System provide case studies from which to examine the potential for life on and off the Earth. Societal questions related to the origins of life, global climate change, and the possibility of extraterrestrial life will be discussed. Prerequisites: none. (3+0)

11. *COURSE CLASSIFICATIONS:* Undergraduate courses only. Consult with CLA Curriculum Council to apply S or H classification appropriately; otherwise leave fields blank.

H = Humanities		S = Social Sciences	

Will this course be used to fulfill a requirement for the baccalaureate core? **If YES, attach form.**	**YES:**		**NO:**	**X**

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, **Format 6**		W = Writing Intensive, **Format 7**		X = Baccalaureate Core	

11.A Is course content related to northern, arctic or circumpolar studies? If yes, a "snowflake" symbol will be added in the printed Catalog, and flagged in Banner.

YES		**NO**	X

12. *COURSE REPEATABILITY:*

Is this course repeatable for credit?	**YES**		**NO**	X

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).	

How many times may the course be repeated for credit?		**TIMES**
If the course can be repeated for credit, what is the maximum number of credit hours that may be earned for this course?		**CREDITS**

If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?		**CREDITS**

13. *GRADING SYSTEM: Specify only one. Note: Changing the grading system for a course later on constitutes a Major Course Change – Format 2 form.*

LETTER:	X	**PASS/FAIL:**	

RESTRICTIONS ON ENROLLMENT (if any)

14. *PREREQUISITES*	none

These will be *required* before the student is allowed to enroll in the course.

15. *SPECIAL RESTRICTIONS, CONDITIONS*	

16. *PROPOSED COURSE FEES*	$0

Has a memo been submitted through your dean to the Provost for fee approval? **Yes/No**	

17. *PREVIOUS HISTORY*

Has the course been offered as special topics or trial course previously? **Yes/No**	NO

If yes, give semester, year, course #, etc.:	

18. ESTIMATED IMPACT

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

New course development for faculty member.
Course will fulfill part of instructional workload for faculty member.
Room for new course serving up to 30 students will be needed.
Room with teleconferencing ability will be needed.

19. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No		Yes	X	Contacted Karen Jensen 8/29/13. Resources are available online and at UAF libraries

20. IMPACTS ON PROGRAMS/DEPTS

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

Course will be offered to all UAF students

21. POSITIVE AND NEGATIVE IMPACTS

*Please specify **positive and negative** impacts on other courses, programs and departments resulting from the proposed action.*

A positive impact will be the offering of a new, exciting course for undergraduates available through MSL, which makes use of knowledge of the oceans in a different way from any existing course, and offers a much broader (universal) perspective on the oceans.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

Astrobiology is a nascent field that integrates scientific and societal issues by asking Big Questions: How did life arise? Are we alone in the Universe? What is the future destiny of life on Earth? From experience in the Astrobiology Graduate Program at the University of Washington, and from speaking with instructors from other Introduction to Astrobiology courses around the world, I can say that a course like this nearly always fills to capacity and is a great way to introduce young students, who might not otherwise have interest in science, to the wonders of the natural world. The reason I am offering it as a Trial course rather than a New Course is to judge the interest and to ensure the correct level at which to offer it.

APPROVALS: Add additional signature lines as needed.

	Date	8/30/13	
Signature, Chair, Program/Department of:	GPMSL		
	Date	9/9/2013	
Signature, Chair, College/School Curriculum Council for	SFOS curriculum committee		
	Date	Sep 10, 2013	
Signature, Dean, College/School of:	SFOS		

Offerings above the level of approved programs must be approved in advance by the Provost.

	Date	
Signature of Provost (if above level of approved programs)		

ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	

Signature, Chair

Faculty Senate Review Committee: ___Curriculum Review ___GAAC

___Core Review ___SADAC

ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

	Date	
Signature, Chair, Program/Department of:		
	Date	
Signature, Chair, College/School Curriculum Council for		
	Date	
Signature, Dean, College/School of:		

ATTACH COMPLETE SYLLABUS (as part of this application). This list is online at:
http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/
The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

SYLLABUS CHECKLIST FOR ALL UAF COURSES

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. Course information:

❑Title, ❑ number, ❑credits, ❑prerequisites, ❑ location, ❑ meeting time
(make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:

❑ Name, ❑ office location, ❑ office hours, ❑ telephone, ❑ email address.

3. Course readings/materials:

❑ Course textbook title, ❑ author, ❑ edition/publisher.
❑ Supplementary readings (indicate whether ❑ required or ❑ recommended) and
❑ any supplies required.

4. Course description:

❑ Content of the course and how it fits into the broader curriculum;
❑ Expected proficiencies required to undertake the course, if applicable.
❑ Inclusion of catalog description is *strongly* recommended, and
❑ Description in syllabus must be consistent with catalog course description.

5. ❑ Course Goals (general), and (see #6)

6. ❑ Student Learning Outcomes (more specific)

7. Instructional methods:

❑ Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

8. Course calendar:

❑ A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say "lab". Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

9. Course policies:

❑ Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

10. Evaluation:

❑ Specify how students will be evaluated, ❑ what factors will be included, ❑ their relative value, and ❑ how they will be tabulated into grades (on a curve, absolute scores, etc.) ❑ Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but is a convenient way to

publicize this.) Link to PDF summary of grading policy for "C":
http://www.uaf.edu/files/uafgov/Info-to-Publicize-C_Grading-Policy-UPDATED-May-2013.pdf

11. Support Services:

❑ Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

12. Disabilities Services: Note that the phone# and location have been **updated.** http://www.uaf.edu/disability/
The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials.

❑ State that you will work with the Office of Disabilities Services (208 WHITAKER BLDG, 474-5655)to provide reasonable accommodation to students with disabilities.

5/21/2013

MSL 194 Astrobiology:

Planets, Oceans, and Life

Spring 2015

Instructor

Dr. Eric Collins
207B O'Neill
(907) 474-6482
recollins@alaska.edu

office hours: Monday/Wednesday 3:15 – 4:15 & by appointment

Astrobiology is the study of the origins, evolution, and future of life on Earth and elsewhere in the Universe. From humble beginnings as self-replicating chemical systems in primordial oceans to advanced civilizations capable of interplanetary flight, life has survived and thrived on Earth for billions of years. *But are we alone?* The aim of this class is to discover what scientists have learned while working to answer that question.

Textbook

Life in the Universe (3rd Edition) – J. Bennett and S. Shostak (2011) Addison-Wesley

Suggested supplementary readings:

The Astrobiology Primer: An Outline of General Knowledge – L.J. Mix and 21 others (2006) URL http://arxiv.org/abs/astro-ph/0610926

Astrobiology: A Multidisciplinary Approach – J. Lunine (2005) Addison-Wesley

Course outline:

- MWF XXX—XXX pm, Room 201 O'Neill
- First Day of Classes: XXX 2015
- Mid-term Examination 1: XXX 2015
- Mid-term Examination 2: XXX 2015
- Last Day of Classes: XXX 2015
- Final Examination: XXX, XXX--XXXpm, Room 201 O'Neill

Instructional Methods:

Lectures and small group discussions. Distance delivery available. All class presentations will be posted as Powerpoint slides on Blackboard. Instructors will use the Blackboard system to communicate with students.

Course description:

MSL 194, Astrobiology, 3+0 credits
Prerequisites: none;
Study of life in the universe from a transdisciplinary perspective, bringing together insights from physics, astronomy, geology, chemistry, and biology. Topics include the evolution of the universe, planets, oceans and life. Past and present oceans found in the Solar System provide case studies from which to examine the potential for life on and off the Earth. Societal questions related to the origins of life, global climate change, and the possibility of extraterrestrial life will be discussed.

Learning Outcomes:

- Understand the basic physical and chemical structure of the universe
- Knowledge of major planetary formation and evolutionary processes
- Understand the relevance of water for the origins and evolution of life
- Describe the oceans of the Solar System, and predict their evolution over geologic time
- Understand the planetary geologic processes that influence global climate change
- Engage with peers' views on the origins and future of life on Earth

Schedule for Astrobiology Spring 2015

Tentative Date	Topic	Reading (in textbook)
Week 1	Introduction, syllabus discussion	
Week 1	The New Science of Astrobiology	Chapter 1
Week 2	The Old Question: Are we alone?	Chapter 2
Week 3	The Structure of the Universe	Chapter 3
Week 3	How to Make a Planet	Chapter 3
	Midterm 1 (20%)	
Week 4	The Habitability of Earth	Chapter 4
Week 4	Climate regulation and change	Chapter 4
Week 5	Defining Life	Chapter 5
Week 5	Life at the Extreme	Chapter 5
	Essay 1 due (15%)	
Week 6	The Origin of Life	Chapter 6
Week 7	The Evolution of Life	Chapter 6
Week 8	The Habitable Zone Concept	Chapters 7+10
Week 8	The Future of Life on Earth	Chapter 10
	Midterm 2 (20%)	
Week 9	Extinct Oceans: Venus and Mars	Chapter 10
Week 10	Living Oceans: Earth	Chapter 8
Week 11	Icy Oceans: Europa and Ganymede	Chapter 9
Week 11	Weird Oceans: Titan	Chapter 9
	Essay 2 due (15%)	
Week 12	Extrasolar planets	Chapter 11
Week 13	Rare Earth	Chapter 11
Week 14	Drake Equation & Fermi Paradox	Chapters 12+13
Week 14	Contact & the Future of Astrobiology	Chapters 12+13
	Final Exam (30%)	

Students are expected to read the relevant chapter prior to the first lecture on that topic. This greatly facilitates dialog during lectures!

Evaluations:

Will be based on 2 mid-term exams, 2 essays, and a cumulative final exam. Grading is absolute.

20% (200 points) Mid-term examination 1: short answer and multiple choice
15% (150 points) Essay 1: see topics and format below
20% (200 points) Mid-term examination 2: short answer and multiple choice
15% (150 points) Essay 2: see topics and format below
30% (300 points) Comprehensive Final exam: short answer and multiple choice

Essay topics:

How will human impacts on Earth's oceans affect the future evolution of life on Earth and in our Solar System?

If human civilization ended tomorrow, what evidence of our existence would be left for extraterrestrial archaeologists to discover after one thousand, one million, and one billion years?

For each topic, provide an essay (up to 2000 words) plus a complete bibliography of all used resources. The essays can be completed in either order and should be submitted to recollins@alaska.edu by midnight on the date that they are due. Late submissions will not be accepted. Preferred format: 12 pt font, single line spacing, 1" margins.

Learning disabilities: At UAF, the Office of Disability Services (203 WHIT; 474-5655; TTY 474-1827; fydso@uaf.edu) ensures that students with physical or learning disabilities have equal access to the campus and course materials. If you have specialized needs, please contact this office or the instructor to make arrangements.

Important contact information for long distance delivery students

Phone numbers: Lecture room 201 O'Neill in FAI: 907 474-5377

We will be employing the following grading system for the entire course:

A+ >95%	C >63 – 67%
A >90 – 95%	C– >60 – 63%
A– >85 – 90%	*Grades below C– will not count toward the major or minor degree requirements*
B+ >80 – 85%	D 50 – 60%
B >75 – 80%	F <50%
B– >70 – 75%	
C+ >67 – 70%	

Students should be familiar with the UAF Honor Code (you find it in the catalog). Neither cheating, plagiarism nor fabrication will be tolerated. Any student found cheating during the exams or to have plagiarized or fabricated statements (including passages from web pages) will receive an automatic 'F' for the **class**.

You are smarter than your phone. The use of cell phones, texting or other electronic communication (e.g. email, twitter, facebook etc.) during class is considered inappropriate.

Curriculum Committee SFOS

Members: Trent Sutton (Chair)
Brenda Konar
Ana Aguilar-Islas
Andres Lopez

21 August 2013

Trial Course
Course Number: MSL 194
Course Title: Astrobiology: Planets, Oceans, and Life
Instructor: Collins
First Time of Offering: Yes

General Recommendations:
None

Faculty Senate Form:

Clarify and Address the following:

- Please change department from SFOS to GPMSL and College/School from MSL to SFOS.
- For Frequency of Offering, what is the planned offering schedule for this course, assuming that it is offered again? Every spring semester, even spring semesters? As demand warrants is confusing to students because it is not clear how demand is warranted, so a potential course offering frequency should be provided in this section.
- For Catalog Description, please include at the end of the description "(3+0)".
- Estimated impact – If need a classroom with videoconference equipment, need to state that for the classroom space component for planning purposes. Also, need to state that this course will fulfill part of the instructional workload requirement for this faculty member.
- It is a requirement that all instructors contact the library and provide a copy of the course syllabus to ensure that the necessary library collections are available.
- Impacts – Will this course be available for students outside MSL? If so, what are these programs? Also, if this course is part of the Minor in Marine Science, this must be stated here as well.
- Positive and Negative Impacts – Because this course is not part of the UAF core requirements, it should not have any impact on MSL 111 (which does meet UAF core guidelines). As a result, there should not be a negative impact associated with this course.

Syllabus:

- Be sure to follow the syllabus checklist (last page of the Trial Course form) to make sure all components are addressed. This will also help to organize the

syllabus to more closely follow a consistent organization scheme that syllabi are supposed to follow at UAF.

- For your course description, you state that your course meets the core breadth natural science requirement. It does not (all natural science core courses have a lab and another set of criteria that they are required to follows). Please remove that statement.
- The listed learning objectives are learning outcomes, so please replace objectives with outcomes (trivial change, but a requirement).
- For the course schedule, there are 14 weeks in the semester but you have listed 20 weeks. Need to resolve that discrepancy.
- For the course evaluations (e.g., exams, essays), you need to provide descriptions of what these graded components are as well as the points available.
- Learning disabilities should be Disability Services. Also, include this language for this section: At UAF, the Office of Disability Services (203 WHIT; 474-5655; TTY 474-1827; fydso@uaf.edu) ensures that students with physical or learning disabilities have equal access to the campus and course materials. If you have specialized needs, please contact this office or the instructor to make arrangements.