

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	<input type="checkbox"/>	New Course	<input checked="" type="checkbox"/>
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2. COURSE IDENTIFICATION:

Dept	MSL	Course #	218	No. of Credits	3
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Justify upper/lower division status & number of credits: **Lecture based course for students with little science background, requires multiple 100 level prerequisite courses so is appropriate for 200 level. Class will have 42 hours of lecture for 3 credits.**

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

4. To be CROSS LISTED? YES/NO

NO	If yes, Dept:	<input type="checkbox"/>	Course #	<input type="checkbox"/>
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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.	<input type="checkbox"/>	Course #	<input type="checkbox"/>
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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 2017

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)	<input type="checkbox"/>	1	<input type="checkbox"/>	2	<input type="checkbox"/>	3	<input type="checkbox"/>	4	<input type="checkbox"/>	5	<input checked="" type="checkbox"/>	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	<input type="checkbox"/>	LAB hours/week	<input type="checkbox"/>	PRACTICUM hours/week
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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 F218 Astrobiology: Planets, Oceans, and Life

3 Credits 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: ENGL 111X; and BIOL 103X or CHEM 103X or GEOS 101X or PHYS 102X; or permission of instructor.* (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

12. **COURSE REPEATABILITY:**

Is this course repeatable for credit?

YES

NO

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:

PASS/FAIL:

RESTRICTIONS ON ENROLLMENT (if any)

14. PREREQUISITES

ENGL 111X; and BIOL 103X or CHEM 103X or GEOS 101X or PHYS 102X; or permission of instructor.

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

15. SPECIAL RESTRICTIONS, CONDITIONS

None

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

YES

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

Spring 2015, Spring 2016 as MSL F294

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

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 with the MSL Oceanography Minor and part of the B.S. in FOS, Ocean Sciences concentration, 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.

This course is offered as part of the minor in Marine Science and the B.S. in FOS, Ocean Sciences concentration, and makes use of knowledge of the oceans in a different way from any existing course, offering a much broader (universal) perspective on the oceans. This broad perspective is useful to students to expand the context through which they are able to interpret scientific advancements seen in their daily lives, helping them to become better-informed citizens in the realm of science.

APPROVALS: Add additional signature lines as needed.

DocuSigned by: J. Reynolds	Date	September 15, 2016
Signature, Chair, Program/Department of: oceanography		

DocuSigned by: 	Date	September 15, 2016
Signature, Chair, College/School Curriculum Council for: SFOS		

DocuSigned by: 	Date	September 15, 2016
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.

Course description:

MSL 218, Astrobiology, 3+0 credits

Prerequisites: ENGL 111X; and BIOL 103X or CHEM 103X or GEOS 101X or PHYS 102X.

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 and explain the basic physical and chemical organization of the universe
- Describe the oceans of the Solar System, and predict their evolution over time
- Explain the planetary geologic processes that influence global climate change
- Understand and discuss the relevance of water for the origins and evolution of life
- Discuss the relevance of extremophiles in the search for extraterrestrial life
- Engage with peers' views on the origins and future of life on Earth

Instructional Methods: Lectures, readings and small group discussions. Distance delivery available. All class presentations will be posted as Powerpoint slides on Blackboard. Instructor will use the Blackboard system to communicate with students.

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 9:15—10:15 (3 hours per week), Room 201 O'Neill
- First Day of Classes: Friday, 15 January, 2016
- Mid-term Examination 1: Friday, 12 February, 2016
- Mid-term Examination 2: Friday, 8 April, 2016

- Last Day of Classes: Monday, 2 May, 2016
- Final Examination: Thursday, 5 May, 8:00—10:00am, Room 201 O’Neill

Schedule for Astrobiology Spring 2015

Tentative Start Date	Topic	Reading (in textbook)
January 15	Introduction, syllabus discussion	
<i>January 18</i>	<i>Martin Luther King, Jr. Day (no class)</i>	
January 20	The New Science of Astrobiology	Chapter 1
January 25	The Old Question: Are we alone?	Chapter 2
February 1	The Structure of the Universe	Chapter 3
February 8	How to Make a Planet	Chapter 3
February 12	Midterm 1 (15%)	
February 15	The Habitability of Earth	Chapter 4
February 22	Climate regulation and change	Chapter 4
February 29	Defining Life	Chapter 5
March 7	Life at the Extreme	Chapter 5
March 11	Essay 1 due (20%)	
<i>March 14–18</i>	<i>Spring Break</i>	
March 21	The Origin of Life	Chapter 6
March 28	The Evolution of Life	Chapter 6
April 4	The Habitable Zone Concept	Chapters 7+10
April 6	The Future of Life on Earth	Chapter 10
April 8	Midterm 2 (15%)	
April 11	Living Oceans: Earth	Chapter 8
April 13	Extinct Oceans: Venus and Mars	Chapter 10
April 15	Icy Oceans: Europa and Ganymede	Chapter 9
April 18	Weird Oceans: Titan	Chapter 9
April 20	Extrasolar Planets & Oceans	Chapter 11
April 22	Essay 2 due (20%)	
<i>April 22</i>	<i>SpringFest (no class)</i>	
April 25	Rare Earth	Chapter 11
April 27	Drake Equation & Fermi Paradox	Chapters 12+13
May 2	Contact & the Future of Astrobiology	Chapters 12+13
May 5	Final Exam (20%)	

Evaluations:

Will be based on exams, essays, participation and class presentation. Grading is absolute.

10% (100 points) Class participation: attendance, contributions, and evidence of preparation, using the rubric shown below (also available at

<https://www.cmu.edu/teaching/assessment/examples/courselevel-bycollege/cfa/tools/participationrubric-cfa.pdf>).

	Exemplary (90%- 100%)	Proficient (80%-90%)	Developing (70%-80%)	Unacceptable (>70%)
Frequency of participation in class	Student initiates contributions more than once in each recitation.	Student initiates contribution once in each recitation.	Student initiates contribution at least in half of the recitations	Student does not initiate contribution & needs instructor to solicit input.
Quality of comments	Comments always insightful & constructive; uses appropriate terminology. Comments balanced between general impressions, opinions & specific, thoughtful criticisms or contributions.	Comments mostly insightful & constructive; mostly uses appropriate terminology. Occasionally comments are too general or not relevant to the discussion.	Comments are sometimes constructive, with occasional signs of insight. Student does not use appropriate terminology; comments not always relevant to the discussion.	Comments are uninformative, lacking in appropriate terminology. Heavy reliance on opinion & personal taste, e.g., "I love it", "I hate it", "It's bad" etc.
Listening Skills	Student listens attentively when others present materials, perspectives, as indicated by comments that build on others' remarks, i.e., student hears what others say & contributes to the dialogue.	Student is mostly attentive when others present ideas, materials, as indicated by comments that reflect & build on others' remarks. Occasionally needs encouragement or reminder from T.A of focus of comment.	Student is often inattentive and needs reminder of focus of class. Occasionally makes disruptive comments while others are speaking.	Does not listen to others; regularly talks while others speak or does not pay attention while others speak; detracts from discussion; sleeps, etc.

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

Essay topics:

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

Compare and contrast the oceans of two different worlds. What does the future hold for each ocean and how does the ocean affect each world's ability to support life?

For each topic, provide an expository essay, scientifically-informed fiction, video, animation, or other creative work. Interdisciplinary collaborations are encouraged but must be pre-approved by the instructor. All works must include a bibliography of all used resources, which can include secondary literature but should include at least 4 articles from the primary literature. The works can be completed in either order and should be submitted to recollins@alaska.edu by 11:59 pm on the date that they are due.

Course Policies: Students are expected to attend class and read the relevant material prior to the lectures. Active participation is expected. The use of cell phones or other electronic communications (e.g. email, twitter, facebook etc.) during class is considered inappropriate. Students should be familiar with the UAF Honor Code (https://www.uaf.edu/catalog/catalog_00-01/undergrad/regs3.html). Cheating and plagiarism will not be tolerated. Any student found cheating during the exams or to have plagiarized or fabricated statements (including passages from web pages) will receive an 'F' for the **class**.

*The following **non-curved** grading system will be used for the entire course:*

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

Support Services: 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. The UAF Writing Center (801 Gruening Bldg) is available for helping students in brainstorming and generating topics, organizing ideas, developing research strategies, the use of citations, and editing for clarity and correctness. Contact them at <http://www.uaf.edu/english/writing-center>

Important contact information for long distance delivery students: The phone number for Lecture room 201 O’Neill in Fairbanks is 907 474-5377.

Curriculum Committee SFOS

Members: Trent Sutton (Chair)
Gordon Kruse
Sarah Hardy
Jennifer Reynolds

18 August 2016

Trial or New Course

Course Number: MSL 218

Course Title: Astrobiology: Planets, Oceans, and Life

Instructor: Collins

First Time of Offering: No

General Recommendations:

None, see comments below for specific recommendations.

Faculty Senate Form:

Clarify and Address the following:

- Section 2. Change MSL 2xx to 218.
- Section 6. Will enrollment be sufficient to offer this course every spring semester?
 - I don't know yet. I plan to do more promotion for the next offering to raise enrollment.
- Section 10. Change MSL 2xx to 218. For Prerequisites, need specific courses and their numbers (the Registrar will only recognize course numbers, not course topics as listed). Remove "one of the following". If you have ENGL 111 and BIOL 103X, CHEM 103X, GEOS 101X, or PHYS 102X, it will have the same effect as the other language and comply with the Registrar's guidelines. As a heads up, students in B.S. programs only take ENGL 111. The other courses are taken by B.A. students, so you may want to include some other prerequisites (e.g., BIOL 115, BIOL 116, CHEM 105, CHEM 106, etc.) or add a statement "or permission of instructor".
- Section 14. Same comments as above on prerequisites.
- Section 21. MSL Oceanography Minor is the Minor in Marine Science. Will this course be part of the B.S. in FOS, Ocean Sciences concentration? If so, include that.
- Justification. How does this course support the Minor in Marine Science and B.S. in FOS, Ocean Sciences concentration? Also, the B.S. in FOS is no longer a proposed degree program since it is now approved.

Syllabus:

- MSL 294 is MSL 218.
- Move the course description, learning outcomes, and instructional methods to above the textbook information.

- The UAF Curriculum Review Committee will scrutinize how you evaluate class participation so include additional information on how you will assign a score to students for this category.
- Course policies. Include the weblink to the UAF Honor Code. Also make sure that your cheating and plagiarism penalties are consistent with UAF policy.

UNIVERSITY
of ALASKA

Christina Neumann <clsutton3@alaska.edu>

Comments on remaining courses

Sarah M. Hardy <smhardy@alaska.edu>

Fri, Aug 19, 2016 at 11:45 AM

To: Gordon.Kruse@alaska.edu, Trent Sutton <tmsutton@alaska.edu>, Christina Neumann <clsutton3@alaska.edu>, Jennifer Reynolds <jrreynolds@alaska.edu>

Hi Gordon-- In response to your comments, 218 has been taught twice as a trial course and has had decent enrollment I believe. We also discussed the title for 394 after we lost you, and this also came up at the Marine Bio faculty meeting so I think Amanda will change it so something like "Human Impacts on Marine Ecosystems". I agree your suggested additional topics would be good to include.

[Quoted text hidden]

[Quoted text hidden]

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Sarah M. Hardy
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