

Submit originals (including syllabus) and one copy and electronic copy to the Faculty Senate Office
 See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL
 Attach a syllabus, except if dropping a course.

SUBMITTED BY:

Department	Chemistry	College/School	CNSM
Prepared by	Carl Murphy	Phone	X5545
Email Contact	Cjmurphy4@alaska.edu	Faculty Contact	Carl Murphy

1. COURSE IDENTIFICATION: As the course now exists.

Dept Course # No. of Credits

COURSE TITLE

2. ACTION DESIRED: Check the changes to be made to the existing course.

Change Course If Change, indicate below what is changing. Drop Course

NUMBER	TITLE	DESCRIPTION	FREQUENCY OF OFFERING
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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

CREDITS (including credit distribution)	2	COURSE CLASSIFICATION
<input type="text"/>	<input type="text"/>	<input type="text"/>

ADD A STACKED LEVEL (400/600) Dept. Course #

Include syllabi.

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.

ADD NEW CROSS-LISTING	<input type="checkbox"/>	Dept. & No.	Requires approval of both departments and deans involved. Add lines at end of form for additional signatures.
STOP EXISTING CROSS-LISTING	<input type="checkbox"/>	Dept. & No.	Requires notification of other department(s) and mutual agreement. Attach copy of email or memo.
OTHER (specify)	<input style="width: 100%;" type="text"/>		

3. 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 and the appropriate Faculty Senate curriculum committee. 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 6 weeks to full semester

OTHER FORMAT (specify all that apply)

Mode of delivery (specify lecture, field trips, labs, etc.)

4. **COURSE CLASSIFICATIONS:** (undergraduate courses only. Use approved criteria found in Chapter 12 of the curriculum manual. If justification is needed, attach separate sheet.)

H = Humanities S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core? YES NO

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

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

- 4.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

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

6. **COMPLETE CATALOG DESCRIPTION** including dept., number, title, credits, credit distribution, cross-listings and/or stacking, clearly showing the changes you want made. (Underline new wording ~~strike-through-old-words~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.)

Example of a complete description:

PS F450 Comparative ~~Aberiginal~~ Indigenous Rights and Policies (s)
3 Credits

Offered As Demand Warrants

~~Case-study~~ Comparative approach in ~~assessing Aberiginal~~ to analyzing Indigenous rights and policies in different nation-state systems. ~~Seven Aberiginal situations~~ Multiple countries and specific policy developments examined for factors promoting or limiting self-determination. Prerequisites: Upper division standing or permission of instructor. (Cross-listed with ANS F450.) (3+0)

CHEM F419 Practical Nuclear Magnetic Resonance Spectroscopy
1-2 Credits Offered Spring

Students will be trained in the basic operation of NMR instruments. Students will spend much of the class time getting hands-on experience on the NMR with student-driven NMR-based research projects. At the end of the class students will present their projects to the rest of the class. Prerequisite: Completion of CHEM F321; or permission of instructor. (~~.5 + 1.5~~) (1+3)

7. **COMPLETE CATALOG DESCRIPTION AS IT SHOULD APPEAR AFTER ALL CHANGES ARE MADE:**

CHEM F419 Practical Nuclear Magnetic Resonance Spectroscopy
2 Credits Offered Spring

Students will be trained in the basic operation of NMR instruments. Students will spend much of the class time getting hands-on experience on the NMR with student-driven NMR-based research projects. At the end of the class students will present their projects to the rest of the class. Prerequisite: Completion of CHEM F321; or permission of instructor. (1+3)

8. **GRADING SYSTEM:** Specify only one.

LETTER: PASS/FAIL:

9. **ESTIMATED IMPACT**

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

More of Carl Murphy's salary will come from teaching. This will have a minor impact on CNSM budget.

10. 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	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	Previously looked at available books and many relevant books are available.
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11. 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)

Change is minor enough to have little effect on programs and departments.

12. POSITIVE AND NEGATIVE IMPACTS

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

Students will have more time during the semester to practice with the NMR, better preparing them for future research opportunities. Increased instrument use may complicate scheduling instrument use.

13. 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. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.

The course has been offered three times now (twice as 494, and once as 419). Feedback from students has been generally very positive. The main change suggested by the students has been increasing the course to 2 credits. This will offer time in lecture to cover topics not previously discussed, and allow the students a greater opportunity to get hands-on experience on the NMR instruments.

APPROVALS: (Additional signature blocks may be added as necessary.)

Thomas K. Green Date **9-28-16**

Signature, Chair, Program/Department of: **Chemistry & Biochemistry**

DocuSigned by: *Patricia Doak* Date **October 24, 2016**

Signature, Chair, College/School Curriculum Council for: CNSM

DocuSigned by: *David L. Lauer* Date **October 25, 2016**

Signature, Dean, College/School of: CNSM

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

Signature of Provost (if applicable) Date

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

	Date	
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Signature, Chair

Faculty Senate Review Committee: __Curriculum Review __GAAC

 __Core Review __SADAC

ADDITIONAL SIGNATURES: *(As needed for cross-listing and/or stacking; add more blocks as necessary.)*

	Date	
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Signature, Chair,
Program/Department of:

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	Date	
--	------	--

Signature, Chair, College/School
Curriculum Council for:

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	Date	
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Signature, Dean, College/School
of:

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Note: If removing a cross-listing, attach copy of email or memo to indicate mutual agreement of this action by the affected department(s). If degree programs are affected, a Format 5 program change form must also be submitted.

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.

Practical Nuclear Magnetic Resonance Spectroscopy

1. Course information:

Course number: F419

2 credits Offered Spring semesters

Prerequisites: CHEM 321 or instructor permission

Location:

Lectures will be in REIC 165

Labs will be in REIC 136 for NMR time and REIC 132 will be available for some reactions and sample preparation.

Meeting time:

Lecture: Wednesdays: 11:45 am - 12:45 pm

Lab: Scheduled by the students as needed. Should average 3 hours per week, and not exceed 42 hours for the semester.

2. Instructor Information:

Dr. Carl Murphy, office: REIC 136; Phone: 474-5545;

e-mail: cjmurphy4@alaska.edu

Office Hours: Mondays: 11:45 am-12:45 pm or by appointment.

3. Textbook:

Required: Organic Structures from 2D NMR Spectra, L.D. Field, Wiley, 2015 first edition ISBN: 1118868943 (\$50.77 on amazon).

4. Course description:

Students will be trained in the basic operation of multiple NMR instruments. The class will begin with a few lectures on theory and operation of the NMR instruments. Homework assignments will reinforce lecture material and provide practice in spectral interpretation. Students will spend much of the class time getting hands-on experience on the NMR. The second half of the class will be student-driven NMR-based research projects. At the end of the class, students will present their projects to the rest of the class.

5. Course Goals:

To provide students with a working background on Nuclear Magnetic Resonance, train them to be independent users of the NMR, and allow them to explore aspects of the NMR with a research project.

6. Student Learning Outcomes:

Students should leave this course with a basic understanding of NMR. They should also be able to safely operate the NMR instruments for standard NMR experiments in any future research in which they are involved.

7. Instructional Methods:

Lectures on the basics of NMR and its safe use will meet during the beginning of the semester. The laboratory meetings will focus on training students to operate the instruments. As students complete training they will be given user accounts on the NMR to start pursuing their own research project. The class will meet again at the end of the semester for students to present their research results.

8. Course calendar (tentative):

Week of	Lecture	Lab
1/18/2017	No Classes	NMR Tour and Check-in
1/25/2017	NMR Basics, Safety, and Review	Lab 1, Learning the 300 MHz NMR
2/1/2017	Liquid Nitrogen Safety Meet in 136	Lab 1, Learning the 300 MHz NMR
2/8/2017	Intermolecular Forces	Lab 2, Learning the 600 MHz NMR
2/15/2017	Spectral Interpretation	Lab 2, Learning the 600 MHz NMR
2/22/2017	Unknown Practice	Lab 3, Solving an Unknown
3/1/2017	Project Expectations	Lab 3, Solving an Unknown
3/8/2017	Through space Coupling	Projects
3/15/2017	Spring Break	
3/22/2017	Magic Angle Spinning and SSNMR	Projects
3/29/2017	Dynamics processes in the NMR	Projects
4/5/2017	Advanced Theory	Projects
4/12/2017	Variable Temperature experiments	Projects
4/19/2017	Interpretation Practice	Projects
4/26/2017	Final Exam	Projects
5/4/2017		Presentations 10:15 AM

9. Course policies:

Attendance at all lectures and scheduled lab times is expected and required. For the research projects, NMR usage will be scheduled based on need and availability of the instruments. When students sign up for an NMR time slot they are expected to use that time.

For all instrument use, students are expected to schedule time to come in on their own to use the NMR for the lab activities or projects. The three lab activities are each scheduled for two weeks to allow students ample time to get familiar with the instrument and complete the expectations of the activity. Time for the labs and project is expected to average 3 hours per week, but will be scheduled based on student and instrument availability. Total lab time for the semester should not exceed 42 hours.

10. Evaluation:

- 8 homework assignments (10 points each): 80 points total
- Final Project Presentation: 100 points
- 3 Labs (30 points each): 90 Points total
- Final exam: 90 points
- Participation: 40 points (based on attendance and involvement with class discussions)
- Total Points: 400

Grades will be letter grades without +/- modifiers following the cutoff values listed below.

>90% = A

>80% = B

>70% = C

>60% = D

<60% = F

The final project will be graded as follows:

Criterion	Points
Lab Performance	20
Effective Application of NMR to your project	20
Project Plan (Due March 8)	20
Presentation	
Layout	10
Quality of Figures	15
Does it tell a story	15
Total	100

12. Disabilities Services:

The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. Students with documented disabilities who may need reasonable academic accommodations should discuss these with the instructor during the first two weeks of class. The instructor will work with the Office of Disabilities Services (*208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities. You will need to provide documentation of your disability to Disability Services.