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	**Biology & Wildlife**	**College/School**	**CNSM**
Prepared by	**Jiguo (Jack) Chen**	**Phone**	**907-474-6966**
Email Contact	**j.chen@alaska.edu**	**Faculty Contact**	**Jiguo (Jack) Chen**

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

2. COURSE IDENTIFICATION:	Dept	**Biol**	Course #	**F461**	No. of Credits	**3**

Justify upper/lower division status & number of credits:	**This course is designed for upper level undergraduate students. Basic knowledge of cell biology and general microbiology is required prior to enrolment of this course. Biol F342 or equivalent courses are prerequisites for this course. This is due to the fact that students who didn't have taken and passed microbiology are often lost because of their lack of familiarity with terminology and an understanding of the nature of microorganisms. This course will cover the principles of virology. Minimal three (3) credits will be needed for this purpose. The main emphasis of this course is on the biology of human and animal viruses, although some important plant viruses will also be discussed in less detail.**

3. PROPOSED COURSE TITLE:	**Principles of Virology**

4. To be CROSS LISTED? *YES/NO*	**Yes?**	If yes, Dept:	New Vet. Medicine	Course #	

(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 #	

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 semester**

	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)	**AY2013-14**

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)	**Lectures**

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)

BIOL F461 Principles of Virology
3 Credits Offered Spring
This course will explore current concepts in the field of virology, with emphasis on the structure, genetic material, and replication strategies of various human and animal viruses. In addition, mechanisms of viral pathogenesis, viral diagnostics, prevention and treatment of viral infection will be presented.
Prerequisites: BIOL F342; or permission of instructor. Cross-listed with the new Department of Veterinary Medicine Fxxx. (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**		Natural Science, **Format 8**	

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 <u>variable</u> credit, what is the maximum number of credit hours that may be earned for this course?		**CREDITS**

13. GRADING SYSTEM: Specify only one. Note: Later changing the grading system for a course constitutes a Major Course Change.

LETTER:	X	**PASS/FAIL:**	

RESTRICTIONS ON ENROLLMENT (if any)

14. PREREQUISITES	**Biol F342; or permission from instructor**

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

Reference the registration implications below due to Banner coding of these terms:
Prerequisite: Course completed and grade of "C" (2.0) or higher prior to registering for the course that requires it.
Concurrent: Course may be taken simultaneously (and allows for a course to have been previously completed).
Co-requisite: Courses MUST be taken simultaneously and does NOT allow for fact that a course was previously completed!

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**	**Yes**

If yes, give semester, year, course #, etc.:	Offered as a "trial course" in spring 2009 and spring 2012; Course #: BIOL F494

18. ESTIMATED IMPACT

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

None. This course is part of the faculty annual workload agreement.

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	**X**	Yes			**No impact**

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)

Biology & Wildlife and possible the new Department of Veterinary Medicine if this course is cross-listed.

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.

Currently there is no virology course being offered at UAF. However, virology is a major subject in current biology program and is offered in almost every state university in the United States which has a biology program. This course is designed for the upper level biology major undergraduate students. This course also provides a core curriculum for the professional students in the newly established Department of Veterinary Medicine and undergraduate students who want to pursue their career in veterinary medicine or allied health field as well as graduate studies in basic biological areas. The knowledge acquired from this course will equip these students for advancing their biology or biomedical related career. The course will introduce students the basic knowledge of virology at the undergraduate or graduate level and will make our graduates more competitive in these fields.
This course has been offered as "trial course" in Spring semesters of 2009 and 2012. The enrollment was 9 and 13 respectively with very little advertisement. If this course is listed in the UAF catalogue and advertised a little, I believe it will attract more students.

APPROVALS: Add additional signature lines as needed.

Signature, Chair, Program/Department of:	**Biology & Wildlife**	Date: Nov 1, 2012
Signature, Chair, Program/Department of:	**Veterinary Medicine**	Date: Nov 16 2012
Signature, Chair, College/School Curriculum Council for:	CNSM	Date: 11/30/2012
Signature, Dean, College/School of:	CNSM	Date: 12/3/12

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

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

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

Signature, Chair Faculty Senate Review Committee: ___Curriculum Review ___GAAC ___Core Review ___SADAC	Date:

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

Signature, Chair, Program/Department of:	Date:

Signature, Dean, College/School of:	

ATTACH COMPLETE SYLLABUS (as part of this application). The guidelines are online: 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:
θTitle, θ number, θcredits, θprerequisites, θ location, θ meeting time
(make sure that contact hours are in line with credits).

2. Instructor (and if applicable, Teaching Assistant) information:
θ Name, θ office location, θ office hours, θ telephone, θ email address.

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

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

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

6. θ Student Learning Outcomes (more specific)

7. Instructional methods:
θ 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:
θ 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:
θ Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

10. Evaluation:
θ Specify how students will be evaluated, θ what factors will be included, θ their relative value, and θ how they will be tabulated into grades (on a curve, absolute scores, etc.) θ Publicize UAF regulations with regard to the grades of "C" and below as applicable to this course. (Not required in the syllabus, but may be a convenient way to publicize this.) Faculty Senate Meeting #171: http://www.uaf.edu/uafgov/faculty-senate/meetings/2010-2011-meetings/#171

11. Support Services:

θ 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.**

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.

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

8/1/2012

BIOL F461 PRINCIPLES OF VIROLOGY

SYLLABUS

Department of Biology & Wildlife, University of Alaska Fairbanks

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1. Course Information:

Title:	Principles of Virology
Number:	F461
Credit:	3
Prerequisites:	Biol F342, or permission of instructor
Location:	208 Irving I
Meeting time:	M W F 9:00 - 10:00 AM

2. Instructor Contact Information:

Name:	Dr. Jack Chen
Office Location:	Arctic Health Research Building 2W10
Office Hours:	Flexible office hours by appointment
Office Phone:	907-474-6566
Email:	j.chen@alaska.edu

Email is the best way to reach the instructor. You should receive a response to your email within 24 hours when it is received. If you do not receive a reply within this time frame, assume that the email was not received and please resend your message.

3. Course Reading/Materials:

Textbook Title:	Fundamentals of Molecular Virology
Authors:	Nicholas H. Acheson
Edition:	2nd Edition
Publisher:	John Wiley & Sons, Inc.
ISBN:	978-0-470-90059-8

4. Course Description:

This course will explore current concepts in the field of virology, with emphasis on the structure, genetic material, and replication strategies of various human and animal viruses. In addition, mechanisms of viral pathogenesis, viral diagnostics, prevention and treatment of viral infection will be presented. Each lecture will cover a specific virus family, using one or two well-studied viruses as examples. Biol F261 – Introduction to Cell and Molecular Biology, or Biol F342 – Microbiology, or equivalent courses at other institutions is prerequisite for this course. Knowledge about the basic concepts covered in this prerequisite course will be assumed by the instructor.

5. Course Goals:

Students are expected to understand various strategies viruses use for replication, interaction with host cells, pathogenesis, prevention, and disease control. Successful completion of the course will give a solid understanding of basic concepts in the field of Virology and enable the students to apply these concepts to problems in the field of virology. At the end of the course the student will be able to describe the basic steps in virus replication and disease. The student will be able to predict the outcome of intervention measures both on the cellular as well as the population level. Exams will cover materials presented on the lectures. For more detailed description of learning goals and objectives see the end of this Syllabus.

6. Student Learning Outcomes:

Overall **L**earning **G**oals:

Understanding of:

- general virus structure, genome, and life cycle
- fundamental differences between each virus families
  - by genome composition
  - by structure
  - by genome size
  - by pathogenesis strategy
- Host-Virus interactions
- Methods and techniques used in virus diagnosis and reference

Overall **L**earning **O**utcomes:

Upon completion of the course the student will be able to:

- Describe general virus life cycle
- Predict replication strategy of viruses based on genome composition
- Apply concepts of virus structure to replication cycle
- Evaluate different control measures of viral diseases
- compare possibilities and limits of methods and techniques used in virology diagnosis and reference
- Remember each virus family and its representative members
- Apply virology concepts to viral infectious disease control, prevention, and treatment

7. Instructional Methods:

The course is designed based on the scientific teaching method. This method includes active learning and group activities as well as formative assessments. The students are expected to read assigned material ahead of class so that class time can be spend on discussion of assigned reading, problem solving as well as other active learning activities. Assessment will be used throughout the course to help students judge their learning progress and help identify areas in need of focused attention.

This course will use Blackboard (classes.uaf.edu) to make additional information available. All information associated with this course will be posted there, including lecture notes, slides, handouts, or study guides etc. Student version of lectures will be posted before each lecture. Students are expected to download, print and preview the material before each

lecture. You can also check your grades and make sure that information related to your record is accurate.

8. Course Calendar:

For details, refer to the section "Tentative Lecture Schedule" in the end of this syllabus.

9. Course Policies:

- **A**ttendance:
  Students are expected to attend all classes. More than two absences will be considered to be excessive. Each excessive absence will count for 2-point deduction from quiz and class attendance points, maximum 10 points of final grades.
- **C**lassroom **B**ehavior:
  Any type of behavior in the classroom that is disruptive, distracting, or disrespectful to the instructor or to your fellow students will not be tolerated and will result in dismissal from the classroom. This includes, but is not limited to, disrespectful comments, the use of tobacco products, consumption of food, use of cell phones or wireless devices, or use of any type of communicative device. All cell phones or other such devices must be turned off while in the classroom. Do not browse the Internet, text message or IM while in the classroom.
- **P**lagiarism**:**
  Plagiarism is the overt or covert use of other people's work or ideas without acknowledgement of the source. This includes using ideas or data from a classmate or colleague without permission and acknowledgement, including sentences from journal articles in your writing without citing the author, or copying parts of a website into your essay. Plagiarism and cheating are serious offenses that violate the student code of conduct which may result in an "F" in the course and/or referral to the university disciplinary committee.

10. Evaluation**:**

- **G**rade **D**istributions:
  - Quiz and class attendance: 10%; Exam 1-3 and final exam: Each is 30%, total are 90% (the best three scores will be used)**.**
  - There will be three exams and one comprehensive final exam. Exams will consist of multiple choice. If you miss one or more of the scheduled exams, the final is required. If you take all three scheduled exams, the comprehensive final is optional. If you choose to take the final and perform better on the final than on one of your previous three exams, I will replace the lowest grade with your improved final exam grade. Grades will be posted on Blackboard, you should always confirm that your grade is posted correctly.
  - Only bring the materials needed for your exam on exam dates. Cell phones must be stored out of sight and turned off. If I suspect cheating occurred during an exam, I reserve the right to re-administer the exam to the entire class. If you are found cheating, you will receive a zero for the exam and will be reported to university disciplinary committee.

- **N**o **M**ake-**U**p **E**xams:
  All exams/final must be taken at the scheduled time. NO EXCEPTIONS! Exams cannot be taken before or after the scheduled date/time. If you miss an exam, you will receive a zero as your grade. Your only means of replacing one zero is to take the comprehensive final.
  ***Note:** If you have a conflict due to a university-sponsored event, you must notify me prior to the exam with a confirmation letter from University authority.

- **G**rading **S**cale:
  Grades will be calculated on a 100-point scale.

100% - 97%	A+
93% - 96%	A
89% - 92%	A-
85% - 88%	B+
81% - 84%	B
77% - 80%	B-
73% - 76%	C+
69% - 72%	C
65% - 68%	C-
61% - 64%	D+
57% - 60%	D
53% - 56%	D-
<53%	F

11. **S**upport **S**ervices**:**

If you require more assistance than can be provided in class, and office hours, you may want to contact Student Support Services (http://www.uaf.edu/sssp/).

12. **D**isability **S**ervices:

If you have a disability, or think you may have a disability, please contact the Office of Disabilities Services (203 WHIT, 474-7043). We will work with this office to provide reasonable and appropriate accommodation to students with disabilities.

Tentative **L**ecture **S**chedule

1. **I**mportant **D**ates (Spring 2013):
    - Thursday, Jan. 17: Classes begin
    - Monday, Jan. 21: Alaska Civil Rights Day (most offices closed)
    - Friday, Feb. 1: Deadline for student-initiated and faculty-initiated drops (course does not appear on academic record)
    - Spring break (no classes): Monday – Friday, March 11 – 15
    - Friday, March 22: Deadline for student-initiated and faculty-initiated withdrawals (W grade appears on academic transcript)
    - Friday, April 26: SpringFest (no classes)
    - Monday, May 6: Last day of instruction
    - Tuesday – Friday, May 7 – 10: Final examinations
    - Wednesday, May 15: Deadline for faculty to post grades, noon

2. **T**entative **L**ecture **S**chedule

Topic	Chapter	Anticipated Dates
Section I: General Principles		
1. Introduction to Virology	1	Jan. 18
2. Virus Structure and Assembly	2	Jan. 23
3. Virus Classification	3	Jan. 25
4. Virus Entry	4	Jan. 28
5. Cell Culture and its Application in Virology	Supplemental material	Jan. 30
Section II: Viruses of Bacteria - Bacteriophages		
6. Single-stranded RNA bacteriophages	5	Feb. 1
Section III: Positive-strand RNA viruses		
7. General introduction of RNA viruses	Supplemental material	Feb. 4
8. Cucumber Mosaic Virus and Plant Viruses	10	Feb. 6
9. Picornaviruses	11	Feb. 8
10. Flaviviruses	12	Feb. 11
11. Togaviruses	13	Feb. 13
12. Coronaviruses	14	Feb. 15
Exam 1		**Feb. 18**
Section IV: Negative-strand and double-strand RNA viruses		
13. Paramyxoviruses and Rhabdoviruses	15	Feb. 20
14. Filoviruses	16	Feb. 22
15. Bunyaviruses	17	Feb. 25
16. Orthomyxoviruses	18	Feb. 27
17. Reoviruses	19	Mar. 1
18. Emerging viruses	Supplemental material	Mar. 4

Section V: Small DNA viruses		
19. General introduction of DNA viruses	Supplemental material	Mar. 6
20. Parvoviruses	20	Mar. 8
21. Polyomaviruses	21	Mar. 18
22. Papillomaviruses	22	Mar. 20

Section VI: Large DNA viruses		
23. Adenoviruses	23	Mar. 22
24. Herpesviruses	24	Mar. 25
25. Baculoviruses	25	Mar. 27
26. Poxviruses	26	Mar. 29
Exam 2		**Mar. 31**

Section VII: Reverse Transcribing viruses		
27. General introduction of retroviruses	28	Apr. 1
28. Human Immunodeficiency Virus Type 1	29	Apr. 3
29. Human T-Cell Leukemia Virus Type 1	Supplemental material	Apr. 5
30. Hepadnaviruses	30	Apr. 8
Section VIII: Other Forms of Viral Pathogens		
31. Viriods and Hepatitis Delta Virus	31	Apr. 10
32. Prions	32	Apr. 12
Section IX: Host Defenses Against Viral Infection		
33. Intrinsic Cellular Defenses Against Viral Infection	33	Apr. 15
34. Innate and Adaptive Immune Responses to Viral Infection	34	Apr. 17
35. Tumor Viruses	Supplemental material	Apr. 19
Section X: Antiviral Agents and Virus Vectors		
36. Antiviral Vaccines	35	Apr. 22
37. Antiviral Chemotherapy	36	Apr. 24
38. Virus Vectors	37	Apr. 29
Exam 3		**May 3**
Final Comprehensive Exam		**May 7-10**