

12/14/15

Revised 26-GCCh. / 36-UCCh.

DEC 14 2015
FORMAT 2

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

1. COURSE IDENTIFICATION: As the course now exists.

Dept	BIOL	Course #	F460	No. of Credits	3
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COURSE TITLE	Principles of Virology
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2. ACTION DESIRED: ☒ Check the changes to be made to the existing course.

Change Course	<input checked="" type="checkbox"/>	If Change, indicate below what is changing.	Drop Course	<input type="checkbox"/>
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NUMBER		TITLE		DESCRIPTION	
PREREQUISITES*	<input checked="" type="checkbox"/>	FREQUENCY OF OFFERING			

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

CREDITS (including credit distribution)		COURSE CLASSIFICATION	
ADD A STACKED LEVEL (400/600) Include syllabi.	<input checked="" type="checkbox"/>	Dept. BIOL	Course # 6xx

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

- The graduate level course will have the following extra requirements:
- 1) There will have weekly reading assignments related to current topics in virology from leading journals.
 - 2) Each graduate student will give a short presentation to the class (undergraduate) summarizing the reading assignments. The performance will be counted for 5 points toward the final grade.
 - 3) Each graduate student will be required to write a report (mini-review paper) before the end of the semester about a specific topic assigned by the instructor. This report will be counted for 15 points toward the final grade.

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		Dept. & No.		Requires approval of both departments and deans involved. Add lines at end of form for additional signatures.
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STOP EXISTING CROSS-LISTING		Dept. & No.		Requires notification of other department(s) and mutual agreement. Attach copy of email or memo.
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OTHER (specify)	
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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 <u>all</u> 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 all that apply)						
Mode of delivery (specify lecture, field trips, labs, etc.)	Face-to-face lecture					

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 wording~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.)

Example of a complete description:

PS F450 Comparative ~~Aboriginal~~ Indigenous Rights and Policies (s)

3 Credits

Offered As Demand Warrants

~~Case study~~ Comparative approach in ~~assessing Aboriginal~~ analyzing Indigenous rights and policies in different nation-state systems. ~~Seven Aboriginal 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)

BIOL F460 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. Special fees apply. Prerequisites: BIOL F360, or BIOL F342; or permission of instructor. Stacked with BIOL F6xx. (3+0)

BIOL F6xx 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. Special fees apply. Prerequisites: Graduate standing; or permission of instructor. Stacked with BIOL F460. (3+0)

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

BIOL F460 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. Special fees apply. Prerequisites: BIOL F360, or BIOL F342; or permission of instructor. Stacked with BIOL F6xx. (3+0)

BIOL F6xx 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. Special fees apply. Prerequisites: Graduate standing; or permission of instructor. Stacked with BIOL F460. (3+0)

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

LETTER: ☒ X

PASS/FAIL: ☐

9. **ESTIMATED IMPACT**

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

There will no or minimal impact on budget, facilities/space, faculty with these changes.

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 ☒ X

Yes ☐

Current library services would be adequate for this change.

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)

This change will have impact on students in Biological Sciences undergraduate and graduate program in the Department of Biology & Wildlife.

12. **POSITIVE AND NEGATIVE IMPACTS**

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

This change will provide more options for both undergraduate and graduate students in the Department of Biology & Wildlife. I don't see any negative impact.

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.

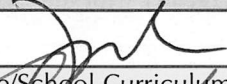
Prerequisite knowledge sufficient to excel in BIOL F460 can be obtained in BIOL F260 - Principles of Genetics, as well as in the current prerequisite course BIOL F342, Microbiology. Broadening the prerequisites to include BIOL F260 will open this important course topic to a wider range of students. There is also a need for biomedically-related courses for graduate students. However, due to the number of graduate students in this Department, we are not able to offer an independent graduate level course in virology.

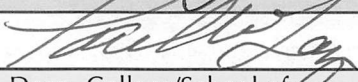
In order to create this 400/600 level stacked course that challenges graduate students while remaining the same level to undergraduates. The graduate level course will have the following extra requirements:

- 1) There will have weekly reading assignments related to current journal articles in virology.
- 2) Each graduate student will be required to write a mini-review paper before the end of semester about a specific topic assigned by the instructor.

APPROVALS: (Forms with missing signatures will be returned. Additional signature blocks may be added as necessary.)

 Diane Wagner	Date	9/17/15
Signature, Chair, Program/Department of: Biology + Wildlife		

	Date	10-9-15
Signature, Chair, College/School Curriculum Council for: CNSM		

	Date	10/12/15
Signature, Dean, College/School of: CRM		

Offerings above the level of approved programs must be approved in advance by the Provost (e.g., non-graduate level program offering of a 600-level course):

	Date	
Signature of Provost (if applicable)		

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

	Date	
Signature, Chair		
Faculty Senate Review Committee: <input type="checkbox"/> Curriculum Review <input type="checkbox"/> GAAC		
<input type="checkbox"/> Core Review <input type="checkbox"/> SADAC		

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

	Date	
Signature, Chair, Program/Department of:		

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

	Date	
Signature, Dean, College/School of:		

Note: If removing a cross-listing, you may 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.

Format 5 program change form - 0027

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

BIOL F460 PRINCIPLES OF VIROLOGY

SYLLABUS – SPRING 2015

Dept. of Biology & Wildlife, CNSM, University of Alaska Fairbanks

1. Course Information:

Title: Principles of Virology
Number: F460
Credit: 3
Prerequisites: BIOL F342, or BIOL F360
Location: Margaret Murie Building Room 105
Meeting time: T R 15:40 - 17:10

2. Instructor Contact Information:

Name: Dr. Jack Chen
Office Location: Murie Building Room 223B
Office Hours: T R 14:30 - 15:30
Office Phone: 907-474-6966
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: Principles of Virology
Authors: S. J. Flint, L. W. Enquist, V. R. Racaniello, A. M. Skalka
Edition: Third Edition
Publisher: ASM Press
ISBN-13: 978-1555814434

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 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.

Premed or pre-professional (public health, veterinary medicine, pharmacy, dental, or nursing) students are encouraged to take this course. Students interested in graduate study in human infectious diseases are also encouraged to take this course.

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 Learning Goals:

Understanding of:

- General virus structure, genome, and life cycle
- Fundamental differences between each virus families
 - By genome composition
 - By capsid structure
 - By genome structure
 - By pathogenesis strategy
- Host-Virus interactions
- Methods and techniques used in virus diagnosis and reference

Overall Learning Outcomes:

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:

- **Attendance:**

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.

- **Classroom Behavior:**

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.

- **Plagiarism:**

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:

- **Grade Distributions:**

- Class attendance and discussion: 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 choices. If you miss one or more of the scheduled exams, the final is required. If you take all three scheduled exams and are satisfied with the scores, 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, the lowest previous grade will be replaced by 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.
- **No Make-Up Exams:**
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.
***Exception:** 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. If you or your immediate family member has a medical emergency, a letter for the doctor is required.
- **Grading Scale:**
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. Support Services:

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. Disability Services:

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 Lecture Schedule

1. Important Dates (Spring 2015):

- Thursday, Jan. 15: Classes begin
- Monday, Jan. 19: Alaska Civil Rights Day (No class, most offices closed)
- Friday, Jan. 30: Deadline for student-initiated and faculty-initiated drops (course does not appear on academic record)
- Friday, March 13: Deadline for student-initiated and faculty-initiated withdrawals (W grade appears on academic transcript)
- Monday–Friday, March 16–20: Spring break (no classes)
- Friday, April 24: SpringFest (no class)
- Monday, May 4: Last day of instruction
- Wednesday, May 6, 3:15-5:15 p.m.: Final examinations
- Wednesday, May 13: Deadline for faculty to post grades, noon

2. Tentative Lecture Schedule

Topic	Anticipated Dates
Section I: General Principles	
1. Introduction to Virology	Jan. 15
2. Virus Structure and Classification	Jan. 20
3. Virus Entry and Viral Pathogenesis	Jan. 22
4. Virological Tests and Diagnosis	Jan. 27
Section II: Viruses of Bacteria - Bacteriophages	
5. Bacteriophages	Jan. 29
Section III: Positive-strand RNA viruses	
6. Picornaviruses	Feb. 3
7. Flaviviruses	Feb. 5
8. Togaviruses	Feb. 10
9. Coronaviruses	Feb. 12
Exam 1	Feb. 17
Section IV: Negative-strand and double-strand RNA viruses	
10. Paramyxoviruses and Rhabdoviruses	Feb. 19
11. Filoviruses	Feb. 24
12. Bunyaviruses	Feb. 26
13. Orthomyxoviruses and Reoviruses	Mar. 3
Section V: Small DNA viruses	
14. Parvoviruses and Polyomaviruses	Mar. 5
15. Papillomaviruses	Mar. 10
Exam 2	Mar. 12

Section VI: Large DNA viruses 16. Adenoviruses and Baculoviruses 17. Herpesviruses and Poxviruses	Mar. 26 Mar. 31
Section VII: Reverse Transcribing viruses 18. Human Immunodeficiency Virus Type 1 19. Human T-Cell Leukemia Virus Type 1 20. Hepadnaviruses	Apr. 2 Apr. 7 Apr. 9
Section VIII: Other Forms of Viral Pathogens 21. Virioids and Hepatitis Delta Virus and Prions	Apr. 14
Section IX: Host Defenses Against Viral Infection 22. Host Defenses Against Viral Infection and Tumor Viruses 23. Emerging viruses	Apr. 16 Apr. 21
Section X: Antiviral Agents and Virus Vectors 24. Antiviral Vaccines and Chemotherapy 25. Virus Vectors and Gene Therapy	Apr. 23 Apr. 28
Exam 3	Apr. 30
Final Examination	May 6 3:15 - 5:15 PM

BIOL F6xx PRINCIPLES OF VIROLOGY

SYLLABUS – SPRING 2016

Dept. of Biology & Wildlife, CNSM, University of Alaska Fairbanks

1. Course Information:

Title: Principles of Virology
Number: F6xx, stacked with BIOL F460.
Credit: 3
Prerequisites: Graduate standing; or permission of instructor
Location: TBD
Meeting time: TBD

2. Instructor Contact Information:

Name: Dr. Jack Chen
Office Location: Murie Building Room 223B
Office Hours: TBD
Office Phone: 907-474-6966
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: Principles of Virology
Authors: S. J. Flint, L. W. Enquist, V. R. Racaniello, A. M. Skalka
Edition: Third Edition
Publisher: ASM Press
ISBN-13: 978-1555814434

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. Certain background knowledge in Microbiology, Molecular Biology, and/or Genetics is required to understand the content of this course.

Graduate students interested in biomedical research or biomedically related career such as medical or professional (public health, veterinary medicine, pharmacy, dental, or nursing) schools are encouraged to take this course. Other graduate students interested in human viral infectious diseases are also encouraged to take this course.

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 Learning Goals:

Understanding of:

- General virus structure, genome, and life cycle
- Fundamental differences between each virus families
 - By genome composition
 - By capsid structure
 - By genome structure
 - By pathogenesis strategy
- Host-Virus interactions
- Methods and techniques used in virus diagnosis and reference

Overall Learning Outcomes:

Upon completion of the course the graduate 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
- Understand the current topics and important development in virology
- Be able to convey the virology concept and development to other people

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:

- **Attendance:**

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, maximum 10 points of final grades.

- **Classroom Behavior:**

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.

- **Plagiarism:**

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. Extra Requirement for Graduate Students:

Because this is a stacked course with BIOL F460, graduate students who take this course will have extra requirements as following:

- Each graduate student will have weekly reading assignments related to current topics in virology from leading journals.
- Each graduate student will give a short presentation to the class (undergraduate) summarizing the reading assignments. The performance will be counted for 5 points toward the final grade.
- Each graduate student will be required to write a report (mini-review paper) before the end of the semester about a specific topic assigned by the instructor. This report will be counted for 15 points toward the final grade.

- This report should be:
 - ✓ A current topic in Virology chosen by the instructor.
 - ✓ The format of the paper should follow “Journal of Virology” mini-review style.
 - ✓ Minimal five pages (single spaced) excluding references.
 - ✓ Minimal ten (10) references.

11. Evaluation:

- **Grade Distributions:**

- Weekly reading assignment: 5%
- A mini-review paper: 15%
- Exam 1-3 and final exam: Each counts for 20%, total are 80%.
 - ✓ There will be three exams and one comprehensive final exam. Exams will consist of multiple choices.
 - ✓ Graduate students are required to take all four exams.
 - ✓ 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.

- **No Make-Up Exams:**

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.

- **Grading Scale:**

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

12. Support Services:

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/>).

13. Disability Services:

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.

A Sample Lecture Schedule from Spring 2015 BIOL F460

1. Important Dates (Spring 2015):

- Thursday, Jan. 15: Classes begin
- Monday, Jan. 19: Alaska Civil Rights Day (No class, most offices closed)
- Friday, Jan. 30: Deadline for student-initiated and faculty-initiated drops (course does not appear on academic record)
- Friday, March 13: Deadline for student-initiated and faculty-initiated withdrawals (W grade appears on academic transcript)
- Monday–Friday, March 16–20: Spring break (no classes)
- Friday, April 24: SpringFest (no class)
- Monday, May 4: Last day of instruction
- Wednesday, May 6, 3:15-5:15 p.m.: Final examinations
- Wednesday, May 13: Deadline for faculty to post grades, noon

2. Tentative Lecture Schedule

Topic	Anticipated Dates
Section I: General Principles	
1. Introduction to Virology	Jan. 15
2. Virus Structure and Classification	Jan. 20
3. Virus Entry and Viral Pathogenesis	Jan. 22
4. Virological Tests and Diagnosis	Jan. 27
Section II: Viruses of Bacteria - Bacteriophages	
5. Bacteriophages	Jan. 29
Section III: Positive-strand RNA viruses	
6. Picornaviruses	Feb. 3
7. Flaviviruses	Feb. 5
8. Togaviruses	Feb. 10
9. Coronaviruses	Feb. 12
Exam 1	Feb. 17

Section IV: Negative-strand and double-strand RNA viruses 10. Paramyxoviruses and Rhabdoviruses 11. Filoviruses 12. Bunyaviruses 13. Orthomyxoviruses and Reoviruses	Feb. 19 Feb. 24 Feb. 26 Mar. 3
Section V: Small DNA viruses 14. Parvoviruses and Polyomaviruses 15. Papillomaviruses	Mar. 5 Mar. 10
Exam 2	Mar. 12
Section VI: Large DNA viruses 16. Adenoviruses and Baculoviruses 17. Herpesviruses and Poxviruses	Mar. 26 Mar. 31
Section VII: Reverse Transcribing viruses 18. Human Immunodeficiency Virus Type 1 19. Human T-Cell Leukemia Virus Type 1 20. Hepadnaviruses	Apr. 2 Apr. 7 Apr. 9
Section VIII: Other Forms of Viral Pathogens 21. Virioids and Hepatitis Delta Virus and Prions	Apr. 14
Section IX: Host Defenses Against Viral Infection 22. Host Defenses Against Viral Infection and Tumor Viruses 23. Emerging viruses	Apr. 16 Apr. 21
Section X: Antiviral Agents and Virus Vectors 24. Antiviral Vaccines and Chemotherapy 25. Virus Vectors and Gene Therapy	Apr. 23 Apr. 28
Exam 3	Apr. 30
Final Examination	May 6 3:15 - 5:15 PM