Location: VetSci Micro 129  
Instructor: Dr. Judith Brown, Professor, School of Plant Sciences  
Office Hours: Forbes Bld 431; open door policy  
Email: jbrown@ag.arizona.edu  
Office phone: 621-1402

Suggested Pre-requisites: BIOL 181/182L; Chemistry 103A/B or 151/152; MIC205A/B and/or PLP 305.

Course Objectives and Expected Learning Outcomes: This course will be offered every other year in the spring semester. The course will provide a general introduction to Virology, inclusive of bacterial, animal, and plant viruses. Topics will include history of virology, classification of viruses, virus structure, entry, virus ‘life’ cycle, virus genomes and functions representative of groups (animal, plant, other), virus-like pathogens, general laboratory methods, virus-host interactions, virus-vector biology examples, and evolutionary aspects.

Format: Two 1 hour and 15 min hour lectures, per week

Optional: Textbooks – Supplemental reading can be determined by topic from the Table of Contents  

This class Begins: Thursday January 16, 2016  
Last Day of this Class: Tuesday May 3, 2016  
Final Exam: May 11, 2016 3:30-5:40

Absence and Class Participation Policy
Class attendance is MANDATORY. Learning comprises assimilating material and skills from many sources, including the textbooks, handouts, and lecture material. Highly relevant material will be presented in lectures. Prepared lecture outlines will not be handed out. Pagers and cell phones must be turned off in class. ‘Threatening behavior’ policies apply to everyone. If these rules are not followed, the student will be told to leave the class. All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion. Advance notice of such an anticipated absence is required. Absences approved by the UA Dean of Students (or Dean's designee) will be honored. The UA’s policy concerning Class Attendance, Participation, and Administrative Drops is available at: http://catalog.arizona.edu/2015-16/policies/classatten.htm. The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, http://policy.arizona.edu/human-resources/religious-accommodation-policy. Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored. See: http://uhap.web.arizona.edu/policy/appointed-personnel/7.04.02

University Holidays:  
Martin Luther King Day……. January 18, 2016  
Spring Break Recess.......... March 12-20, 2016

Written Examinations  
Three (3) examinations will be given  
Examination #1 ------------------------ Thursday February 4, 2016 (in class)
Examination #2 --------------- Thursday March 3, 2016 (take home)
Examination #3 --------------- Thursday April 7, 2016 (take home)

Make-up Examinations: will be permitted under exceptional circumstances: Physician documented illness received before or on the day of the exam, or evidence or direct conflict with an official university scheduled activity. Both must be requested before the examination. When a make-up exam is granted, the make-up examination may be given on "dead day" if not possible to schedule otherwise.

Final Examination Grade: In-class oral presentation. Note that there are three assignments ‘in preparation for’ your presentation, due during the semester. Students must attend all presentations and participate to earn full credit for the final exam grade. The date and time of the final exam or project, along with links to the Final Exam Regulations, http://www.registrar.arizona.edu/schedule101/exams/examrules.htm, and Final Exam Schedule, http://www.registrar.arizona.edu/schedules/finals.htm.

Oral Presentation for Final Exam: The research/oral presentation assignment will be a ‘professional’ Powerpoint presentation presented in class: 17 minute, and Q&A: 3 min (100 points).

ITEMS DUE prior to presentation:
• Presentation Topic Title: Due in class Tues February 9, 2016
• A one-page Outline of the research project, with list of 8-10 References Consulted, will be due Tues February 22, 2016. (30 pts)
• A one-page Summary and with References Cited will be due Tues March 29, 2016. (30 pts)

Presentations will be delivered in class beginning April 19-May 3, 2016. All students must be present for all presentations. Students will prepare one question to ask a speaker each day presentations are delivered. Recall that a portion of your grade will include participation in this activity.

PRESENTATION RUBRIC
In-depth nature of research: 40 pts
Organization; Effective format and style: 30 pts
Delivery: 25
References (*at least 8, required): 5 pts*
Total points possible: 100

Sources of information must include professional journals, historical documents, and Internet articles only if a citation (authored, dated) can be found for the information. Wiki-Pedia may be used to research a topic, but references should be those followed up directly by each student based on background or other information found there. Verbiage taken from any text written by another is plagiarism. Figures, tables, photos from the Internet may be incorporated into the presentation by using a proper source citation.

Grading
□ The three written exams will be weighted equally at 100 points each = 300 points.
□ The oral presentation Outline is worth 30 points
□ The presentation Summary, with Reference is worth 30 pts.
□ The Oral Presentation (is the Final Exam) is worth 100 points.
□ Attendance and participation are accounted for by signing the Attendance Sign-In List, and/or a Pop Quiz at the beginning or end of each lecture class period (5 pts each x 8 quizzes = 40 points).
□ Virology in the News (submit news item topic, your name at the end of class) 5 points, max 15 bonus points); each student to lead at least one discussion (classes, noted Viruses in the News).
□ Total points possible = 500 points (+ 0-15 bonus points = your grade)
Grades will be assigned according to the mean score: 90-100%, "A"; 79-89%, "B"; 69-78%, "C"; 59-68%, "D"; below 59%, "E". The grade of "I" (Incomplete) requires instructor approval and will be awarded only when all but a minor portion of the course work has been satisfactorily completed.

Withdrawal ("W"): prior to the end of the fourth week of classes, official withdrawal (drop) cancels the registration for the course. During weeks five through eight, the grade of W is awarded to students who are passing at the time of withdrawal. A grade of E is awarded to students not passing at time of withdrawal.

Students wishing to audit must be registered for the class.

COURSE SCHEDULE TOPICS and ACTIVITIES

Week 1
THURS [Jan 14]
Syllabus-Review semester schedule, lectures and activities; Attendance mandatory; Review presentation assignment.

Week 2
TUES [Jan 19]
1-Review of Nucleic Acids and Proteins
Presentations-planning next steps
READING: Your favorite biochemistry text

THURS [Jan 21]
2-Introduction to Viruses
Viruses in the News-how it works

Week 3
TUES [Jan 26]
3-Introduction to Viruses, Possible origins
Viruses in the News #1

THURS [Jan 28] Dr. Tonja Fisher, Plant Sciences
4-Working with viruses, lab methods

Week 4
TUES [Feb 2] Dr. Tonja Fisher, Plant Sciences
5-Working with viruses, lab methods

THURS [Feb 4] Exam #1 in class

Week 5
TUES [Feb 9] *DUE TODAY Turn in: Student Presentation Topic
6-History of Virology

THURS [Feb 11]
7-Virus structure, Entry, Attachment, Movement
Viruses in the News #2

Week 6
TUES [Feb 16]
8-Virus structure, Entry and attachment of animal viruses

Viruses in the News#3

THURS [Feb 18]
9-Replicases; Replication of animal viruses

Viruses in the News#4

Week 7  *Due TODAY: Outline and 8-10 References (30 pts)-no late papers accepted

TUES [Feb 23]
10-Structure, entry, attachment, replication of animal viruses

Viruses in the News#5

THURS [Feb 25]
11-Entry, replication and movement in plant viruses

Viruses in the News#6

Week 8

TUES [Mar 1]
12-Epidemiology and survey of human viruses

Viruses in the News#7

THURS [Mar 3]  Exam #2 – due in class THURS Mar 10)
13- Epidemiology and survey of human viruses

Viruses in the News#8

Week 9

TUES [Mar 8]
Dr. M. Riehle, Entomology
14-Arbovirus biology and genetics; Case study, mosquito vectors of viruses-interactions

THURS [Mar 10]  Exam #2 due in class
Dr. M. Riehle, Entomology
15-Arbovirus biology and genetics; Case study, mosquito vectors of viruses-interactions

Week 10  SPRING BREAK March 15-17

Week 11

TUES [Mar 22]
16-Transmission of plant viruses

Viruses in the News#9

THURS [Mar 24]
17-Transmission of plant viruses

Viruses in the News#10

Week 12

TUES [Mar 29]  *Due TODAY Summary & Reference List (30 pts) –no late papers accepted
18-Non-arthropod borne viruses & Case studies

THURS [Mar 31]
19-Plant pararetroviruses: Case study CSSV/mealybug vector
**Week 13**
TUES [Apr 5]
Dr. Fiona McCarthy, School of Animal and Comparative Biomedical Sciences
20-Transmission and epidemiology of human viruses

**THURS [Apr 7]** Exam #3 (due TU Apr 12 in class]
Dr. Fiona McCarthy, School of Animal and Comparative Biomedical Sciences
21-Transmission and epidemiology of human viruses
*Viruses in the News #11*

**Week 14**
TUES [Apr 12]
22-Plant immunity and virus resistance

**THURS [Apr 14]**
23-Biotechnology/translational virology

**TUES [April 19]**
24-Virus evolution

[April 21-May 3] Oral Presentations Schedule TBD: 3 teams/ per day -Attendance mandatory

**Final Exam period:** May 11, 2016 from 3:30-5:30

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**Other Important Information**

Requests for incompletes (I) and withdrawal (W) must be made in accordance with University policies which are available at http://catalog.arizona.edu/2015-16/policies/grade.htm#I and http://catalog.arizona.edu/2015-16/policies/grade.htm#W, respectively.

**Classroom Behavior Policy**
To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (i.e. texting, chatting, reading a newspaper, making phone calls, and web surfing).

Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

The use of personal electronics such as laptops, iPads and other such mobile devices is distracting to the other students and the instructor. Their use can degrade the learning environment. Therefore, students are not permitted to use these devices during the class period.

**Threatening Behavior Policy**
The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to one’s self. See: http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students.

**Notification of Objectionable Materials**
This course will contain material of a mature nature, which may include explicit language, depictions of nudity, sexual situations, and/or violence. The instructor will provide advance notice when such materials will be used.
Students are not automatically excused from interacting with such materials, but they are encouraged to speak with
the instructor to voice concerns and to provide feedback.

**Accessibility and Accommodations**
Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations. For additional information on Disability Resources and reasonable accommodations, please visit [http://drc.arizona.edu/](http://drc.arizona.edu/). If you have reasonable accommodations, please plan to meet with me by appointment or during office hours to discuss accommodations and how my course requirements and activities may impact your ability to fully participate. Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

**Code of Academic Integrity**
Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog: [http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity](http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity)

The University Libraries have some excellent tips for avoiding plagiarism available at: [http://www.library.arizona.edu/help/tutorials/plagiarism/index.html](http://www.library.arizona.edu/help/tutorials/plagiarism/index.html).

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor’s written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA email to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student email addresses. This conduct may also constitute copyright infringement.

**UA Nondiscrimination and Anti-harassment Policy**
The University is committed to creating and maintaining an environment free of discrimination, [http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy](http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy). Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

**Additional Resources for Students**
UA Academic policies and procedures are available at: [http://catalog.arizona.edu/2015-16/policies/aaindex.html](http://catalog.arizona.edu/2015-16/policies/aaindex.html)

Student Assistance and Advocacy information is available at: [http://deanofstudents.arizona.edu/student-assistance/students/student-assistance](http://deanofstudents.arizona.edu/student-assistance/students/student-assistance)

**Confidentiality of Student Records**
[http://www.registrar.arizona.edu/ferpa/default.htm](http://www.registrar.arizona.edu/ferpa/default.htm)

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Subject to Change Statement: Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.

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