# **Cover Sheet: Request 13470**

# FOS 4xxx FOOD AND ENVIRONMENTAL VIROLOGY

| Info           |   |
|----------------|---|
| Process        | Course New Ugrad/Pro                                    |
| Status         | Pending at PV - University Curriculum Committee (UCC)   |
| Submitter      | Naim Montazeri-Djouybari nmontazeri@ufl.edu             |
| Created        | 1/3/2019 12:36:52 PM                                    |
| Updated        | 3/22/2019 8:12:03 AM                                    |
| Description of | Requesting creation of new joint course undergrad/grad. |
| request        |   |

#### Actions

| Step                                       | Status                         | Group   | User                 | Comment   | Updated   |
|--|--------------------------------|---|----------------------|---|---|
| Department                                 | Transferred                    | CALS -<br>Agricultural and<br>Life Sciences -<br>General<br>514903000 | Joel H<br>Brendemuhl | This request must first be<br>approved by the FSHN<br>department. In addition the<br>request needs a complete<br>syllabus uplaoded. | 1/3/2019  |
| No document cl                             |                                |   |                      |   |   |
| ·  | Approved                       | CALS - Food<br>Science and<br>Human Nutrition<br>514915000            | Susan Percival       |   | 1/9/2019  |
|  |                                | 18_uniqueness_NN  |                      |   | 1/4/2019  |
| College                                    | Approved                       | CALS - College<br>of Agricultural<br>and Life<br>Sciences             | Joel H<br>Brendemuhl | Edits requested by the CALS CC have been addressed.   | 3/22/2019   |
| 2019_FEV_Mor<br>External Consul            | ntazeri_0321<br>It form for ne |   |                      | Naim Montazeri.pdf  | 3/21/2019<br>3/21/2019<br>3/21/2019<br>3/21/2019<br>3/21/2019 |
| University                                 | Pending                        | PV - University   |                      |   | 3/22/2019   |
| Curriculum                                 |                                | Curriculum  |                      |   |   |
| Committee                                  |                                | Committee<br>(UCC)  |                      |   |   |
| No document cl                             | nanges                         | ()  |                      | I   |   |
| Statewide<br>Course<br>Numbering<br>System |                                |   |                      |   |   |
| No document cl                             | nanges                         |   |                      |   |   |
| Office of the Registrar                    | - J                            |   |                      |   |   |
| No document cl                             | nanges                         |   |                      |   |   |
| Student<br>Academic<br>Support<br>System   |                                |   |                      |   |   |
| No document ch                             | nanges                         |   |                      |   |   |
| Catalog                                    |                                |   |                      |   |   |
| No document cl                             | nanges                         |   |                      |   |   |
| College<br>Notified                        |                                |   |                      |   |   |
| No document cl                             | nanges                         |   |                      |   |   |

# Course|New for request 13470

# Info

Request: FOS 4xxx FOOD AND ENVIRONMENTAL VIROLOGY Description of request: Requesting creation of new joint course undergrad/grad. Submitter: Joel H Brendemuhl brendj@ufl.edu Created: 3/22/2019 8:11:35 AM Form version: 4

#### Responses

Recommended Prefix FOS Course Level 4 Number XXX Category of Instruction Advanced Lab Code None Course Title Food and Environmental Virology Transcript Title Food/Environ Virology Degree Type Baccalaureate

#### Delivery Method(s) On-Campus Co-Listing Yes

**Co-Listing Explanation** This course is designed for upper-level undergraduate and graduate students. According to the Bloom's taxonomy, the content of this course is intended to help students understand, apply, and analyze (draw connection among ideas) the issues in food and environmental virology as its relevance to food-borne and water-borne illnesses. Both undergraduate and graduate students will receive the same presentation slides every session. Further reading materials (book chapters) will be provided based on the necessity of some sessions for a deeper understanding of the concepts.

There are some specific strategies to differentiate graduate students, in which graduate students 1) In-class presentation: discuss a peer-reviewed article of a relevant topic, selected by the help of the instructor, and deliver through a 20-min oral presentation. In-class presentations will be offered using PowerPoint slide sets. The slide sets must be submitted to the instructor by 5 p.m. of three calendar days prior to the date of presentation. Students are encouraged to communicate with the instructor in advance to ensure the outlines and format of their presentation. The slide sets will be uploaded to Canvas and used as course material for the exams.

2) Extra reading materials: selected peer-reviewed articles, including but not limited to the following titles. The extra reading materials will be included in the final exam. Extra questions will be provided to graduate students. Questions will carry different points for graduate and undergraduate students to compensate for the extra questions for the graduate students (see grading scheme).

The table will be used for grading: Activity/Graduates/Undergraduates Mid-term exam 1: 200/200 Mid-term exam 2: 200/200 Assignment 1: 50/100 Assignment 2: 50/100 Presentation: 100/-Final exam: 400/400 TOTAL:1000/1000 Effective Term Earliest Available Effective Year 2019 Rotating Topic? No Repeatable Credit? No

Amount of Credit 2 If variable, # min 2 If variable, # max 2

#### S/U Only? No

Contact Type Regularly Scheduled Weekly Contact Hours 2

**Course Description** Food virology is an emerging topic in the field of microbial food safety. This course explores the role of viruses as human pathogens; their interactions with bacteria; transmission to food, water, and contact surfaces; detection; and prevention strategies. Through this course, students can develop a competency framework within their discipline.

Prerequisites MCB2000/L or MCB3020/L or FOS4222

#### Co-requisites N/A

**Rationale and Placement in Curriculum** Food virology is an emerging topic in the microbial food safety field. Food-borne and water-borne illnesses pose a huge health-care associated burden worldwide. Viruses' presence in an ecosystem, transmission to food, their interaction with the host, infectious cycles, and decontamination methods could be different from that of the bacteria. This course addresses these issues and covers a broad range of topic from basic virology to applied concepts. In class discussions engage students on some current issues and challenges such as contamination incidences in enclosed settings such as cruise ships, healthcare, catering facilities, as well as the public health consequences of natural disasters such as hurricanes and strategies to decontaminate viruses and prevent further spread of the pathogens. Therefore, this course can be beneficial to educate the student on the risks of food-borne and water-borne pathogenic viruses and help students build competency in their field.

Course Objectives By the end of this course the students will be able to:

1. Recognize important food-borne and water-borne pathogenic viruses and distinguish the occurrence of viral infections from a global perspective while illustrating the incidences of the viral infections in low-income vs. high-income countries, or in confined settings such as health-care facilities, restaurants, food processing plants, farms, and aquaculture facilities

2. Critically relate and illustrate specific molecular mechanisms under which viruses persist in the environment, transfer to food and/or contact surfaces, and the evolutionary pathways contributing to the emergence of new and potentially more virulent strains

3. Explain methods for the isolation, purification, and detection of viruses in environmental samples including their advantages and disadvantages, and rationally determine the appropriate methodologies based on the downstream applications

4. Assess and critically analyze potential routes of contamination of food, water, and contact surfaces with food-borne and water-borne viruses, and logically recommend proper control and prevention strategies in accordance with each specific route such as food handlers, wastewater, severe weather conditions, floods, and runoff waters.

**Course Textbook(s) and/or Other Assigned Reading** REQUIRED READING MATERIAL - Further readings materials: mainly book chapters.

RECOMMENDED READING MATERIALS

Cook N. 2013. Viruses in Food and Water - Risks, Surveillance and Control. Woodhead
Publishing, England

• Koopmans M. et al. 2008. Food-Borne Viruses - Progress and Challenges. American Society for Microbiology Press, Washington, DC, USA

• Knipe D. M. & Howley P. M. 2007. Fields Virology. 5th Edition. Lippincott Williams & Wilkins. Philadelphia, PA, USA

• Carter J. & Saunders V. 2013. Virology: Principles & Applications. 2nd Edition. John Wiley & Sons Ltd. England

• Peer-reviewed articles published in prestigious journals such as the Journal of Virology, Food and Environmental Virology, Food and Environmental Microbiology, and Journal of Food Protection

• University of Florida libraries and online sources such as e-books, ILL, and Knovel App.

Week in Virology, by Dr. V. Racaniello: http://www.microbe.tv/

Weekly Schedule of Topics Week Day Date Topic area/activity

- 1 F Aug 23 Pre-assessment and introduction
- W Aug 28 Basic virology I
- 2 F Aug 30 Basic virology II
- W Sep 4 Food-borne viruses and global health I
- 3 F Sep 6 Food-borne viruses and global health II
- W Sep 11 Hepatitis A & E
- 4 F Sep 13 Human norovirus
- W Sep 18 Enteroviruses

5 F Sep 20 Review for the exam 1

- W Sep 25 Exam 1
- 6 F Sep 27 Isolation and purification of viruses

| 7<br>8<br>9 | W<br>F<br>W<br>F<br>W<br>F<br>W | Oct 4<br>Oct 9<br>Oct 11<br>Oct 16<br>Oct 18 | Detection and quantification of Utilization of surrogates Assign<br>Bacteriophages Course evaluat<br>Practical applications of bacterio<br>Virus-bacteria interaction<br>Peer-review article discussion<br>Review for the exam 2 | ment 1 due<br>ion    |
|-------------|---------------------------------|--|--|----------------------|
| 10          | F                               |  | Exam 2   |                      |
|             | w                               |  | Domestic sewage (wastewater)   |                      |
| 11          | F<br>W                          |  | Environmental water and sedim<br>Viral contamination by food han   |                      |
| 12          | F                               |  | Meat and seafood   | IUIEI S              |
| 12          | W                               |  | Fresh produce Assignment 2 d   | lue                  |
| 13          | F<br>W                          | Nov 15                                       | Virus inactivation - processing t  | echnologies          |
| 14          | F                               |  | No class (Thanksgiving holiday   |                      |
|             | W                               |  | Peer-review article discussion   | /                    |
| 15          | F                               | Nov 29                                       | Prions   |                      |
|             | W                               | Dec 4  | Review for the final exam  | UF course evaluation |
| 16          | F                               | Dec 6  | No class (reading days)  |                      |
|             |                                 |  |  |                      |

W Dec 11 Final exam

Links and Policies COURSE STRUCTURE

According to the Bloom's taxonomy, the content of this course is intended to help students understand, apply, and analyze (draw connection among ideas) the issues in food and environmental virology as its relevance to food-borne and water-borne illnesses. This is an in-class course and will be delivered through lectures using slides and videos. Further reading materials such as book chapters will be provided for a deeper understanding of the core concepts. All the further reading materials will be included in the exams. The students will complete and turn in two assignments (each 1 to 2-page long) on topics selected by the instructor. The mid-term exams (50 min) and final exam (90 min) will be closed-book.

#### ONLINE COURSE EVALUATION

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results. COURSE WEBSITE

The course is available via through the UF e-learning website (Canvas); go to http://elearning.ufl.edu/ and click on the Canvas Login button. It requires Gator Link username/password. The course site will be used to course relevant announcements, reading, lecture materials, links, assignments, etc. It is recommended to adjust the setting for announcement alerts. FAQs: http://elearning.ufl.edu/e-learningbasics/uf-e-learning-faqs/; Tutorials: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-tutorials/. ATTENDANCE AND MAKE-UP POLICY

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

#### SOFTWARE USE

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

#### ACADEMIC HONESTY

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work

submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:

http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

#### STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see:

http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html.

SERVICES FOR STUDENTS WITH DISABILITIES

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0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

#### CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

• University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,

www.counseling.ufl.edu

Counseling Services

Groups and Workshops

Outreach and Consultation

Self-Help Library

Wellness Coaching

U Matter We Care, www.umatter.ufl.edu/

• Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/next-level STUDENTS COMPLAINTS AND CONFLICT RESOLUTION

Policies Residential Course: https://www.dso.ufl.edu/documents/UF\_Complaints\_policy.pdf

Online Course: http://www.distance.ufl.edu/student-complaint-process

#### OTHER INFORMATION

Lecture material and information are the property of the University of Florida and the course instructor and may not be used for any commercial purpose. Students found in violation may be subject to disciplinary action under the University's Student Conduct Code. Only students formally registered for the course are permitted to attend lectures and take quizzes/tests.

#### Grading Scheme GRADING

There is a total of 1,000 points available throughout the semester (table below). Grades are not curved and not negotiable.

Mid-term exam 1200Mid-term exam 2200Assignment 1100Assignment 2100Presentation-Final exam400TOTAL 1,000FINAL GRADE SCALEBased on the total of 1,000 points.A = 934-1,000; A- = 900-933; B+ = 867-899C+ = 767-799; C = 734-766; C- = 700-733

B = 834-866; B- = 800-833 D+ =667-699; D = 634-666

# D- = 600-633; E =599

For further information on UF's Grading Policy, consult: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Instructor(s) Naim Montazeri



#### **Course Syllabus**

#### FOOD AND ENVIRONMENTAL VIROLOGY

#### FOS4xxx

#### Fall semester 2019

| Instructor   | Naim Montazeri, Ph.D.<br>Assistant Professor   |
|--|--|
| Department   | Food Science and Human Nutrition (FSHN)  |
| Institution  | University of Florida  |
| Office Phone   | (352) 294-3756   |
| Email  | nmontazeri@ufl.edu   |
| Office location  | 572 Newell Drive, FSHN Bldg, Room 341A   |
| Office hours   | MW, 3-4 p.m. (by appointment only)   |
| Announcements  | Through Canvas   |
| Prerequisite<br>Class location<br>Class hours<br>Credits | FOS4xxx: MCB2000/L, MCB3020/L, or FOS4222<br>McCarty B, 3124<br>MW, 1:55-2:45 p.m. (period 7)<br>2 |

#### **COURSE DESCRIPTION**

Food virology is an emerging topic in the field of microbial food safety. This course explores the role of viruses as human pathogens; their interactions with bacteria; transmission to food, water, and contact surfaces; detection; and prevention strategies. Through this course, students can develop a competency framework within their discipline.

#### COURSE GOALS

By the end of this course the students will be able to:

- Recognize important food-borne and water-borne pathogenic viruses and distinguish the occurrence of viral infections from a global perspective while illustrating the incidences of the viral infections in lowincome vs. high-income countries, or in confined settings such as health-care facilities, restaurants, food processing plants, farms, and aquaculture facilities
- 2. Critically relate and illustrate specific molecular mechanisms under which viruses persist in the environment, transfer to food and/or contact surfaces, and the evolutionary pathways contributing to the emergence of new and potentially more virulent strains

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# COURSE STRUCTURE

According to the Bloom's taxonomy, the content of this course is intended to help students understand, apply, and analyze (draw connection among ideas) the issues in food and environmental virology as its relevance to food-borne and water-borne illnesses. This is an in-class course and will be delivered through lectures using slides and videos. Further reading materials such as book chapters will be provided for a deeper understanding of the core concepts. All the further reading materials will be included in the exams. The students will complete and turn in two assignments (each 1 to 2-page long) on topics selected by the instructor. The mid-term exams (50 min) and final exam (90 min) will be closed-book.

# **REQUIRED READING MATERIAL**

- Further readings materials: mainly book chapters.

# RECOMMENDED READING MATERIALS

- Cook N. 2013. Viruses in Food and Water Risks, Surveillance and Control. Woodhead Publishing, England
- Koopmans M. et al. 2008. Food-Borne Viruses Progress and Challenges. American Society for Microbiology Press, Washington, DC, USA
- Knipe D. M. & Howley P. M. 2007. *Fields Virology*. 5th Edition. Lippincott Williams & Wilkins. Philadelphia, PA, USA
- Carter J. & Saunders V. 2013. Virology: Principles & Applications. 2<sup>nd</sup> Edition. John Wiley & Sons Ltd.
   England
- Peer-reviewed articles published in prestigious journals such as the Journal of Virology, Food and Environmental Virology, Food and Environmental Microbiology, and Journal of Food Protection
- University of Florida libraries and online sources such as e-books, ILL, and Knovel App.
- Week in Virology, by Dr. V. Racaniello: <u>http://www.microbe.tv/</u>

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Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at

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#### GRADING

There is a total of 1,000 points available throughout the semester (table below). Grades are not curved and not negotiable.

| Mid-term exam 1 | 200   |
|-----------------|-------|
| Mid-term exam 2 | 200   |
| Assignment 1    | 100   |
| Assignment 2    | 100   |
| Presentation    | -     |
| Final exam      | 400   |
| TOTAL           | 1,000 |

# FINAL GRADE SCALE

Grades will be calculated based on the total of 1,000 points.

| A = 934-1,000 | A- = 900-933 | B+ = 867-899 | B = 834-866 | B- = 800-833 |
|---------------|--------------|--------------|-------------|--------------|
| C+ = 767-799  | C = 734-766  | C- = 700-733 | D+ =667-699 | D = 634-666  |
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|      |     |        | Food and Environmental Virology              |                      |
|------|-----|--------|--|----------------------|
|      |     |        | Class Schedule (subject to change)           |                      |
|      |     |        | FOS4xxx                                      |                      |
| Week | Day | Date   | Topic area/activity                          |                      |
| 1    | F   | Aug 23 | Pre-assessment and introduction              |                      |
|      | W   | Aug 28 | Basic virology - I                           |                      |
| 2    | F   | Aug 30 | Basic virology - II                          |                      |
|      | W   | Sep 4  | Food-borne viruses and global health I       |                      |
| 3    | F   | Sep 6  | Food-borne viruses and global health II      |                      |
|      | W   | Sep 11 | Hepatitis A & E                              |                      |
| 4    | F   | Sep 13 | Human norovirus                              |                      |
|      | W   | Sep 18 | Enteroviruses                                |                      |
| 5    | F   | Sep 20 | Review for the exam 1                        |                      |
|      | W   | Sep 25 | Exam 1                                       |                      |
| 6    | F   | Sep 27 | Isolation and purification of viruses        |                      |
|      | W   | Oct 2  | Detection and quantification of viruses      |                      |
| 7    | F   | Oct 4  | Utilization of surrogates                    | Assignment 1 due     |
|      | W   | Oct 9  | Bacteriophages                               | Course evaluation    |
| 8    | F   | Oct 11 | Practical applications of bacteriophages     |                      |
|      | W   | Oct 16 | Virus-bacteria interaction                   |                      |
| 9    | F   | Oct 18 | Peer-review article discussion               |                      |
|      | W   | Oct 23 | Review for the exam 2                        |                      |
| 10   | F   | Oct 25 | Exam 2                                       |                      |
|      | W   | Oct 30 | Domestic sewage (wastewater)                 |                      |
| 11   | F   | Nov 1  | Environmental water and sediment             |                      |
|      | W   | Nov 6  | Viral contamination by food handlers         |                      |
| 12   | F   | Nov 8  | Meat and seafood                             |                      |
|      | W   | Nov 13 | Fresh produce                                | Assignment 2 due     |
| 13   | F   | Nov 15 | Virus inactivation - processing technologies |                      |
|      | W   | Nov 20 | Virus inactivation - surface decontamination |                      |
| 14   | F   | Nov 22 | No class (Thanksgiving holiday)              |                      |
|      | W   | Nov 27 | Peer-review article discussion               |                      |
| 15   | F   | Nov 29 | Prions                                       |                      |
|      | W   | Dec 4  | Review for the final exam                    | UF course evaluation |
| 16   | F   | Dec 6  | No class (reading days)                      |                      |
|      | W   | Dec 11 | Final exam                                   |                      |



#### **Course Syllabus**

#### FOOD AND ENVIRONMENTAL VIROLOGY

#### FOS6xxx

#### Fall semester 2019

| Instructor      | Naim Montazeri, Ph.D.<br>Assistant Professor                 |
|-----------------|--|
| Department      | Food Science and Human Nutrition (FSHN)                      |
| Institution     | University of Florida  |
| Office Phone    | (352) 294-3756   |
| Email           | <u>nmontazeri@ufl.edu</u>                                    |
| Office location | 572 Newell Drive, FSHN Bldg, Room 341A                       |
| Office hours    | MW, 3-4 p.m. (by appointment only)                           |
| Announcements   | Through Canvas   |
| Prerequisite    | FOS6xxx: Basic familiarity with microbiology or biochemistry |
| Class location  | McCarty B, 3124  |
| Class hours     | MW, 1:55-2:45 p.m. (period 7)                                |
| Credits         | 2  |

#### COURSE DESCRIPTION

Food virology is an emerging topic in the field of microbial food safety. This course explores the role of viruses as human pathogens; their interactions with bacteria; transmission to food, water, and contact surfaces; detection; and prevention strategies. Through this course, students can develop a competency framework within their discipline.

#### COURSE GOALS

By the end of this course the students will be able to:

- Recognize important food-borne and water-borne pathogenic viruses and distinguish the occurrence of viral infections from a global perspective while illustrating the incidences of the viral infections in lowincome vs. high-income countries, or in confined settings such as health-care facilities, restaurants, food processing plants, farms, and aquaculture facilities
- 2. Critically relate and illustrate specific molecular mechanisms under which viruses persist in the environment, transfer to food and/or contact surfaces, and the evolutionary pathways contributing to the emergence of new and potentially more virulent strains

- 3. Explain methods for the isolation, purification, and detection of viruses in environmental samples including their advantages and disadvantages, and rationally determine the appropriate methodologies based on the downstream applications
- 4. Assess and critically analyze potential routes of contamination of food, water, and contact surfaces with food-borne and water-borne viruses, and logically recommend proper control and prevention strategies in accordance with each specific route such as food handlers, wastewater, severe weather conditions, floods, and runoff waters.

# COURSE STRUCTURE

According to the Bloom's taxonomy, the content of this course is intended to help students understand, apply, and analyze (draw connection among ideas) the issues in food and environmental virology as its relevance to food-borne and water-borne illnesses. This is an in-class course and will be delivered through lectures using slides and videos. Further reading materials such as book chapters will be provided for a deeper understanding of the core concepts. All the further reading materials will be included in the exams. The students will complete and turn in two assignments (each 1 to 2-page long) on topics selected by the instructor. The mid-term exams (50 min) and final exam (90 min) will be closed-book.

# **REQUIRED READING MATERIAL**

- Further readings materials: mainly book chapters.

# RECOMMENDED READING MATERIALS

- Cook N. 2013. Viruses in Food and Water Risks, Surveillance and Control. Woodhead Publishing, England
- Koopmans M. et al. 2008. Food-Borne Viruses Progress and Challenges. American Society for Microbiology Press, Washington, DC, USA
- Knipe D. M. & Howley P. M. 2007. *Fields Virology*. 5th Edition. Lippincott Williams & Wilkins. Philadelphia, PA, USA
- Carter J. & Saunders V. 2013. Virology: Principles & Applications. 2<sup>nd</sup> Edition. John Wiley & Sons Ltd.
   England
- Peer-reviewed articles published in prestigious journals such as the Journal of Virology, Food and Environmental Virology, Food and Environmental Microbiology, and Journal of Food Protection
- University of Florida libraries and online sources such as e-books, ILL, and Knovel App.
- Week in Virology, by Dr. V. Racaniello: http://www.microbe.tv/

# REQUIREMENTS FOR THE GRADUATE STUDENTS

 In-class presentation: discuss a peer-reviewed article of a relevant topic, selected by the help of the instructor, and deliver through a 20-min oral presentation. In-class presentations will be offered using PowerPoint slide sets. The slide sets must be submitted to the instructor by 5 p.m. of three calendar days prior the date of presentation. Students are encouraged to communicate with the instructor in advance to ensure the outlines and format of their presentation. The slide sets will be uploaded to Canvas and used as course material for the exams.

- Extra reading materials: selected peer-reviewed articles, including but not limited to the following titles. The extra reading materials will be included in the final exam. Extra questions will be provided to graduate students.
  - Santiana et al. 2018. Vesicle-cloaked virus clusters are optimal units for inter-organismal viral transmission. *Cell Host Microbe*, 24(2): 208-220.
  - Chmielewski and Swayne. 2011. Avian influenza: public health and food safety concerns. *Annu Rev Food Sci Technol.* 2:37-57.
  - Torres-Barceló et al. 2016. Evolutionary Rationale for Phages as Complements of Antibiotics. *Trends Microbiol.* 24(4): 249-256.
  - Wigginton and Kon. 2012. Virus disinfection mechanisms: the role of virus composition, structure, and function. *Curr Opin Virol.* 2: 84-89.
  - Graaf et al. 2016. Human norovirus transmission and evolution in a changing world. *Nat Rev Microbiol.* 14: 421-433.

# ONLINE COURSE EVALUATION

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <a href="https://evaluations.ufl.edu">https://evaluations.ufl.edu</a>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <a href="https://evaluations.ufl.edu/results">https://evaluations.ufl.edu/results</a>.

# COURSE WEBSITE

The course is available via through the UF e-learning website (Canvas); go to <u>http://elearning.ufl.edu/</u> and click on the Canvas Login button. It requires Gator Link username/password. The course site will be used to course relevant announcements, reading, lecture materials, links, assignments, etc. It is recommended to adjust the setting for announcement alerts. FAQs: <u>http://elearning.ufl.edu/e-learning-basics/uf-e-learning-faqs/</u>; Tutorials: http://elearning.ufl.edu/e-learning-basics/uf-e-learning-tutorials/.

# ATTENDANCE AND MAKE-UP POLICY

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <a href="https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx">https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx</a>.

#### GRADING

There is a total of 1,000 points available throughout the semester (table below). Grades are not curved and not

negotiable.

| Mid-term exam 1 | 200   |
|-----------------|-------|
| Mid-term exam 2 | 200   |
| Assignment 1    | 50    |
| Assignment 2    | 50    |
| Presentation    | 100   |
| Final exam      | 400   |
| TOTAL           | 1,000 |

#### FINAL GRADE SCALE

Grades will be calculated based on the total of 1,000 points.

| A = 934-1,000 | A- = 900-933 | B <b>+ =</b> 867-899 | B = 834-866 | B- = 800-833 |
|---------------|--------------|----------------------|-------------|--------------|
| C+ = 767-799  | C = 734-766  | C- = 700-733         | D+ =667-699 | D = 634-666  |
| D- = 600-633  | E ≤599       |                      |             |              |

For further information on UF's Grading Policy, consult: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

#### SOFTWARE USE

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

#### ACADEMIC HONESTY

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "*On my honor, I have neither given nor received unauthorized aid in doing this assignment.*"

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

# STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see:

http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html.

# SERVICES FOR STUDENTS WITH DISABILITIES

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation:

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

# CAMPUS HELPING RESOURCES

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu
   Counseling Services
   Groups and Workshops
   Outreach and Consultation
   Self-Help Library
   Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/
- Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/next-level

# STUDENTS COMPLAINTS AND CONFLICT RESOLUTION

- Policies Residential Course: https://www.dso.ufl.edu/documents/UF\_Complaints\_policy.pdf
- Online Course: <a href="http://www.distance.ufl.edu/student-complaint-process">http://www.distance.ufl.edu/student-complaint-process</a>

# OTHER INFORMATION

Lecture material and information are the property of the University of Florida and the course instructor and may not be used for any commercial purpose. Students found in violation may be subject to disciplinary action under the University's Student Conduct Code. Only students formally registered for the course are permitted to attend lectures and take quizzes/tests.

|      |     |        | Food and Environmental Virology              |                      |
|------|-----|--------|--|----------------------|
|      |     |        | Class Schedule (subject to change)           |                      |
|      |     |        | FOS6xxx                                      |                      |
| Week | Day | Date   | Topic area/activity                          |                      |
| 1    | F   | Aug 23 | Pre-assessment and introduction              |                      |
|      | W   | Aug 28 | Basic virology - I                           |                      |
| 2    | F   | Aug 30 | Basic virology - II                          |                      |
|      | W   | Sep 4  | Food-borne viruses and global health I       |                      |
| 3    | F   | Sep 6  | Food-borne viruses and global health II      |                      |
|      | W   | Sep 11 | Hepatitis A & E                              |                      |
| 4    | F   | Sep 13 | Human norovirus                              |                      |
|      | W   | Sep 18 | Enteroviruses                                |                      |
| 5    | F   | Sep 20 | Review for the exam 1                        |                      |
|      | W   | Sep 25 | Exam 1                                       |                      |
| 6    | F   | Sep 27 | Isolation and purification of viruses        |                      |
|      | W   | Oct 2  | Detection and quantification of viruses      |                      |
| 7    | F   | Oct 4  | Utilization of surrogates                    | Assignment 1 due     |
|      | W   | Oct 9  | Bacteriophages                               | Course evaluation    |
| 8    | F   | Oct 11 | Practical applications of bacteriophages     |                      |
|      | W   | Oct 16 | Virus-bacteria interaction                   |                      |
| 9    | F   | Oct 18 | Peer-review article discussion               |                      |
|      | W   | Oct 23 | Review for the exam 2                        |                      |
| 10   | F   | Oct 25 | Exam 2                                       |                      |
|      | W   | Oct 30 | Domestic sewage (wastewater)                 |                      |
| 11   | F   | Nov 1  | Environmental water and sediment             |                      |
|      | W   | Nov 6  | Viral contamination by food handlers         |                      |
| 12   | F   | Nov 8  | Meat and seafood                             |                      |
|      | W   | Nov 13 | Fresh produce                                | Assignment 2 due     |
| 13   | F   | Nov 15 | Virus inactivation - processing technologies |                      |
|      | W   | Nov 20 | Virus inactivation - surface decontamination |                      |
| 14   | F   | Nov 22 | No class (Thanksgiving holiday)              |                      |
|      | W   | Nov 27 | Peer-review article discussion               |                      |
| 15   | F   | Nov 29 | Prions                                       |                      |
|      | W   | Dec 4  | Review for the final exam                    | UF course evaluation |
| 16   | F   | Dec 6  | No class (reading days)                      |                      |
|      | W   | Dec 11 | Final exam                                   |                      |

# Course Syllabus Uniqueness across the UF courses

# FOOD AND ENVIRONMENTAL VIROLOGY

#### Fall semester 2019

The proposed **Food and Environmental Virology (FEV)** is a unique course not only at the UF but across many universities throughout the United States. Current virology courses at the UF are tailored to basic and medical sciences; however, the proposed course focuses on environmental aspects of foodborne and water-borne viruses and offers practical applications to food safety. The first two introductory sessions of the Food and Environmental Virology partially overlap with other courses but are essential for the basic understanding of the core concepts. A few following sessions for introducing specific virus categories (enteroviruses, noroviruses, hepatitis viruses) may be represented in other courses; however, the contents is intentionally designed to address the specific roles of viruses pertaining to food science such as mechanisms under which viruses bind to food and persist in environment, virus transmission from water, role of food workers, isolation of viruses from complex environmental matrices, downstream detection and quantification methods, resistance of viruses to chemical disinfectants, and prevention strategies. Below, some UF courses with the concepts of virology have been discussed and are compared with the proposed course.

The Virology (MCB 4503/5505) is an introductory course to general virology that focuses on topics such as molecular virology, virus replication, vaccines, and gene therapy. The Advanced Molecular Virology (GMS 7133) addresses the "molecular analysis of human pathogenic viruses" with more indepth knowledge of virus replication strategies. Courses such as Advanced Virology I, II, and III (GMS 6034/6035/6036) focuses on molecular aspects of specific groups of viruses. Viral Pathogens of Plants (PLP 6223C) addresses plant pathology with minimal or no overlap with the FEV. The Biology and Molecular Biology of Avian Viruses (VME 6421) focuses specifically on influenza viruses, a majority of which are not relevant to food-borne viruses. In the FEV course, only a brief two introductory sessions on basic virology will be offered as a refreshment or introduction of the topic for those who do not have a sufficient background in virology. Throughout the semester, the above mentioned will be introduced to the students for those who may be interested in delving deeper in basic concepts of virology, or topics are not covered in the proposed FEV course, such as cancer-causing viruses, gene therapy, and vaccines.

# UF FLORIDA

# **UCC: External Consultations**

| Department   | Name and Title |
|--------------|----------------|
| Phone Number | E-mail         |
| Comments     |                |
| Department   | Name and Title |
| Phone Number | E-mail         |
| Comments     |                |
| Department   | Name and Title |
| Phone Number | E-mail         |
| Comments     |                |
|              |                |
|              |                |

# FW: Food and Environmental Virology course - External Consult

# Percival, Susan S

Thu 3/21/2019 12:56 PM

To:Naim Montazeri <nmontazeri@ufl.edu>;

**0** 4 attachments

2019\_FEV\_Montazeri\_122518\_NM[1].pdf; ATT00001.htm; External Consult form for new courses.pdf; ATT00002.htm;

Here you go.

From: Triplett,Eric <ewt@ufl.edu>
Sent: Friday, March 1, 2019 8:28 AM
To: Percival,Susan S <percival@ufl.edu>
Subject: Fwd: Food and Environmental Virology course - External Consult

Sue, The form you need is attached. Eric

Begin forwarded message:

From: "Lukas,Mary Jane M" <<u>m.lukas@ufl.edu</u>> Subject: Re: Food and Environmental Virology course - External Consult Date: March 1, 2019 at 8:22:09 AM EST To: "Triplett,Eric" <<u>ewt@ufl.edu</u>>

Hi!

The completed form is attached. Please let me know if you need anything else.

Thanks, Mary Jane

From: "Triplett,Eric" <<u>ewt@ufl.edu</u>>
Date: Friday, March 1, 2019 at 8:16 AM
To: mcs-hr <<u>m.lukas@ufl.edu</u>>
Subject: Fwd: Food and Environmental Virology course - External Consult

Mary Jane,

I need to complete the form attached. This is no overlap between the proposed course from FSHN and our virology course. Eric

Begin forwarded message:

From: "Percival,Susan S" <<u>percival@ufl.edu</u>> Subject: FW: Food and Environmental Virology course - External Consult Date: February 19, 2019 at 11:54:22 AM EST To: "Triplett,Eric" <<u>ewt@ufl.edu</u>> Cc: "Jones,Melissa Kolsch" <<u>mmk@ufl.edu</u>>, Naim Montazeri <<u>nmontazeri@ufl.edu</u>>, "Barber,Julie A" <<u>jaba@ufl.edu</u>>

#### Dr. Triplett -

I'm copying Melissa on this email since I just approved her external consult on a course. Dr. Montazeri is also proposing a course – I hope there is not too much overlap – but I think it's a good thing that we are able to look at theses two courses side by side and design them for max impact. Some overlap is good – perhaps there are two audiences.

Please let us know if you would like to have more discussion.

Sue

Susan S. Percival PhD Professor & Chair Food Science & Human Nutrition Post Office Box 110370 University of Florida Gainesville, FL 32611

From: Naim Montazeri <<u>nmontazeri@ufl.edu</u>>
Sent: Tuesday, February 19, 2019 11:38 AM
To: Percival,Susan S <<u>percival@ufl.edu</u>>
Cc: Barber,Julie A <<u>jaba@ufl.edu</u>>
Subject: Food and Environmental Virology course - External Consult

Hi Sue,

The CALS curriculum committee asked me to obtain an external consult (attached) from the Microbiology and Cell Science Department for my Food and Environmental Virology course. I need to submit this letter to the committee along with some minor revisions I need to make for the syllabus. Dr. Brendemuhl told me the letter needs to go through the department chair. Could you please take care of it so that we hopefully get the letter from the microbiology department before the next meeting?

Attached is the current syllabus.

Naim

Naim Montazeri, Ph.D. Assistant Professor of Food Virology Florida Sea Grant Research Affiliate

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