NEMATODE SYSTEMATICS AND PHYLOGENY

NEM 6102 (LECTURE) 2 CREDIT HOURS

LOCATION: ONLINE ONLY. PLEASE NOTE THAT CLASS RESOURCES, ANNOUNCEMENTS, AND ASSIGNMENTS WILL BE MADE AVAILABLE THROUGH CANVAS AND DISCUSSIONS VIA ZOOM

SPRING 2023

INSTRUCTOR: Dorota Porazinska

Room 2210, Department of Entomology and Nematology, Bld. 970
email: dorotalp@ufl.edu (but please communicate via Canvas email)

OFFICE HOURS: Please send an me a Canvas email anytime to schedule a zoom meeting.

COURSE TA OR COORDINATOR: Parr McQueen
email: jparr.mcquuen@ufl.edu (but please communicate via Canvas email)

“Consider the nematode roundworm, the most abundant of all animals. Four out of five animals on Earth are nematode worms – if all solid materials except nematode worms were to be eliminated you could still see the ghostly outline of the most of it in nematode worms.” E. O. Wilson (paraphrasing N. A. Cobb)

COURSE DESCRIPTION: The course provides advanced knowledge on taxonomy and systematics of free-living, plant-parasitic, and animal-parasitic nematodes. It covers in depth morphological and molecular characterization of nematode taxa that provide basis for understanding nematode evolutionary relationships and their classification and identification. In addition, taxa are discussed in the context of their physiology, behavior, and ecological functions.

COURSE GOALS AND/OR OBJECTIVES: By the end of this course, students will:

1. Recognize and define vocabulary and principles used in the science of taxonomy and systematics.

2. Discuss species concepts and tools to delimit specie currently used in Nematology.

3. Evaluate morphological and molecular characters used in Nematology to identify taxa and to create classification.

4. Discuss other characters (e.g., physiology, behavior, and ecological functions) potentially useful in species delimitation.
5. Identify nematodes.

6. Analyze and critique scientific publications relevant to nematode systematics and phylogeny.

REQUIRED TEXT: None


REQUIRED PAPER READINGS: (see schedule for dates):


PREREQUISITE KNOWLEDGE AND SKILLS: NEM 6101 or equivalent. Your curiosity, excitement about nematodes, and appreciation for biodiversity!

INSTRUCTIONAL METHODS: This course will be conducted entirely online through asynchronous activities including viewing pre-recorded lectures (1-2 hrs/week), viewing pre-recorded virtual tours (30 min – 1 hr/week), (readings (2-3 hrs/week), assignments
(30 min – 1 hr/week), and quizzes (30 min/week) on Canvas. Additionally, all students will be assigned to submit a 12 min power point presentation relevant to the topic of nematode systematics and phylogeny.

**GRADING POLICIES:**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Total Points</th>
<th>% of Final Grade</th>
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<tbody>
<tr>
<td>Midterm Exam</td>
<td>100</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>100</td>
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<tr>
<td>Virtual Practical Exam</td>
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<td>20%</td>
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<tr>
<td>PPP Presentations</td>
<td>100</td>
<td>10%</td>
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<tr>
<td>10 Quizzes</td>
<td>100</td>
<td>10%</td>
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<tr>
<td>10 Reading Assignments</td>
<td>200</td>
<td>10%</td>
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<tr>
<td>10 Discussions</td>
<td>100</td>
<td>10%</td>
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**EXAMS**

Exams will be limited to 2 hours, and virtually proctored in Honorlock as per university policy. Midterm will cover 1.1 – 3.2 modules, Final Exam 3.3 – 4.4 modules, and Virtual Practical Exam will involve recognition of taxa from relevant images used in the course.

**POWER POINT PRESENTATION**

The presentation will be on an approved topic of student’s choice relevant to the topic of nematode systematics and phylogeny. The presentation will be in a format of a scientific talk delivered at a typical science meeting (12 min). Grading rubrics will be provided ahead of time.

**QUIZZES**

Each module will become available at 9 am on Wednesdays. Each module will have a narrated lecture that will be summarized in a form of a quiz (a total of 10 quizzes) and supported by virtual tours. Quizzes will be open for one week with a submission deadline right prior to the opening of a new module (following Wednesday 9 am). Quiz questions
will include different formats including multiple choice, matching, fill in the blanks, and short answers. They will be open book, limited to 30 minutes, and not proctored.

ASSIGNMENTS and DISCUSSIONS

All assignments will involve: 1. Reading an article (a total of 10 articles) and answer assigned questions, and 2. Participating in a discussion (a total of 10 discussions). Guiding questions and grading rubrics for discussions will be provided. Again, articles will become available with opening of every module (9 am on Wednesdays). Submission of answers to assigned questions will be due prior to the opening of a new module (following Wednesday at 9 am).

GRADING SCALE (%):

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>100 – 94</td>
<td>A</td>
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<tr>
<td>&lt;94 – 90</td>
<td>A-</td>
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<td>&lt;87 – 84</td>
<td>B</td>
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<td>&lt;84 – 80</td>
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<td>&lt;60</td>
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COURSE SCHEDULE:

<table>
<thead>
<tr>
<th>Module</th>
<th>Week</th>
<th>Topic</th>
<th>Reading Assignment</th>
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<tbody>
<tr>
<td>1.1</td>
<td>01 11 2023</td>
<td>Introduction</td>
<td>Smythe et al. 2019</td>
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<tr>
<td>1.2</td>
<td>01 18 2023</td>
<td>Taxonomy and Classification</td>
<td>Decraemer and Backeljau, 2015</td>
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<tr>
<td>1.3</td>
<td>01 25 2023</td>
<td>Species and Phylogeny</td>
<td>De Queiroz 2007</td>
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<tr>
<td>1.4</td>
<td>02 01 2023</td>
<td>Nematode Barcoding</td>
<td>Powers et al. 2020</td>
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<tr>
<td></td>
<td></td>
<td>Presentation topic due</td>
<td></td>
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<tr>
<td>2.1</td>
<td>02 08 2023</td>
<td>Enoplida</td>
<td>Smythe 2015</td>
</tr>
</tbody>
</table>
2.2 02 15 2023 Triplonchida Presentation Outline due na

3.1 02 22 2023 Dorylaimida Peña-Santiago et al. 2014

3.2 03 01 2023 Mononchida Review na

03 08 2023 MIDTERM EXAM na

3.3 03 22 2023 Dioctophymatida and Mermithida Presentations due na

4.1 03 29 2023 Chromadorida, Monhysterida Tchesunov 2015

4.2 04 05 2023 Plectida Tchesunow 2015

4.3 04 12 2023 Rhabditida: Rhabditina Holovachov et al. 2015

4.4 04 19 2023 Rhabditida: Tylenchina Kim et al. 2020

4.4 04 26 2023 Rhabditida: Tylenchina Review Qing and Bert 2019

05 02 2023 05 03 2023 VIRTUAL PRACTICAL EXAM FINAL EXAM na

Disclaimer: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

COURSE POLICIES:

EXAM POLICY: Quizzes/exams for the lecture component will be posted online along with specific completion time deadlines.
ASSIGNMENT POLICY: All assignments submitted on time have a potential to receive full credit, 1-day late to receive 80% of the full credit, 2-days late to receive 60% of the full credit, and assignments that are more than 2 days late receive 0. All assignments have a rubric to guide you through the assignment.

COURSE DELIVERY: All lecture modules, required/extra readings, quizzes, and exams will be available on CANVAS.

GRADERS AND GRADE POINTS: For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/.

ATTENDANCE AND MAKE-UP WORK: 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/UGRD/academic-regulations/attendance-policies/.

ONLINE COURSE EVALUATION PROCESS: 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. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-results/.

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/scrr/process/student-conduct-honor-code.

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.

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, https://disability.ufl.edu/

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 Connections Center, First Floor JWRU, 32-392-1601, https://career.ufl.edu/

Student Complaints:

- Residential Course: https://scrr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/
- Online Course: http://www.distance.ufl.edu/student-complaint-process