Cover Sheet: Request 15760

GIS 4XXX – GeoAI – Geographic Artificial Intelligence

| Info | |
|----------------|--|
| Process | Course New Ugrad/Pro |
| Status | Pending at PV - University Curriculum Committee (UCC) |
| Submitter | Jane Southworth jsouthwo@ufl.edu |
| Created | 1/30/2021 12:37:02 PM |
| Updated | 3/14/2021 3:16:32 PM |
| Description of | Submission of New Course Requests. An advanced level undergraduate course |
| request | addressing:GeoAI – Geographic Artificial Intelligence. Specifically a combined Lecture/Lab |
| | course with hands-on computer based lab activities. Will serve as a capstone course to an in |
| | development GeoAl certificate program |

| Actions | | | | | | | | |
|--|--------------------------|---|-----------------|---|-----------|--|--|--|
| Step | Status | Group | User | Comment | Updated | | | |
| Department | Approved | CLAS - Geography 16220000 | Jane Southworth | | 1/30/2021 | | | |
| No document changes | | | | | | | | |
| College | Conditionall Approved | CLAS - College of Liberal Arts and Sciences | Joseph Spillane | The College Curriculum Committee conditionally approves this request, with the following changes needed: • Include Week 15. • Course Objectives need to be rewritten to be measurable. Gain, understand not measurable/observable. • Typo in topics: Deep vs Depp | 3/11/2021 | | | |
| No document of | changes | | | | | | | |
| Department | Approved | CLAS - Geography 16220000 | Jane Southworth | | 3/11/2021 | | | |
| No document of | hanges | | | | | | | |
| College | Approved | CLAS - College of Liberal Arts and Sciences | Joseph Spillane | | 3/14/2021 | | | |
| No document of | changes | | | | | | | |
| University Curriculum Committee | Pending | PV - University Curriculum Committee (UCC) | | | 3/14/2021 | | | |
| No document of | changes | | | | | | | |
| Statewide Course Numbering System | | | | | | | | |
| No document changes | | | | | | | | |
| Registrar | changes | | | | | | | |
| | | | | | | | | |

| Step | Status | Group | User | Comment | Updated | | | |
|---------------------|--------|-------|------|---------|---------|--|--|--|
| Student | | | | | | | | |
| Academic | | | | | | | | |
| Support | | | | | | | | |
| System | | | | | | | | |
| No document changes | | | | | | | | |
| Catalog | | | | | | | | |
| No document changes | | | | | | | | |
| College | | | | | | | | |
| Notified | | | | | | | | |
| No document changes | | | | | | | | |

Course|New for request 15760

Info

Request: GIS 4XXX – GeoAI – Geographic Artificial Intelligence Description of request: Submission of New Course Requests. An advanced level undergraduate course addressing:GeoAI – Geographic Artificial Intelligence. Specifically a combined Lecture/Lab course with hands-on computer based lab activities. Will serve as a capstone course to an in development GeoAI certificate program Submitter: Jane Southworth jsouthwo@ufl.edu Created: 3/8/2021 2:39:31 PM Form version: 3

Responses

Recommended Prefix

Enter the three letter code indicating placement of course within the discipline (e.g., POS, ATR, ENC). Note that for new course proposals, the State Common Numbering System (SCNS) may assign a different prefix.

Response: GIS

Course Level

Select the one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).

Response:

4

Course Number

Enter the three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles. For new course requests, this may be XXX until SCNS assigns an appropriate number.

Response: XXX

Category of Instruction

Indicate whether the course is introductory, intermediate or advanced. Introductory courses are those that require no prerequisites and are general in nature. Intermediate courses require some prior preparation in a related area. Advanced courses require specific competencies or knowledge relevant to the topic prior to enrollment.

Response: Advanced

- 1000 level = Introductory undergraduate
- 2000 level = Introductory undergraduate
- 3000 level = Intermediate undergraduate
- 4000 level = Advanced undergraduate
- 5000 level = Introductory graduate
- 6000 level = Intermediate graduate
- 7000 level = Advanced graduate
- 4000/5000= Joint undergraduate/graduate
- 4000/6000= Joint undergraduate/graduate

*Joint undergraduate/graduate courses must be approved by the UCC and the Graduate Council)

Lab Code

Enter the lab code to indicate whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).

Response: C

Course Title

Enter the title of the course as it should appear in the Academic Catalog. There is a 100 character limit for course titles.

Response: GeoAI – Geographic Artificial Intelligence

Transcript Title

Enter the title that will appear in the transcript and the schedule of courses. Note that this must be limited to 30 characters (including spaces and punctuation).

Response: GeoAI – Geographic AI

Degree Type

Select the type of degree program for which this course is intended.

Response: Baccalaureate

Delivery Method(s) Indicate all platforms through which the course is currently planned to be delivered.

Response: On-Campus

Co-Listing Will this course be jointly taught to undergraduate, graduate, and/or professional students?

Response: No

Effective Term

Select the requested term that the course will first be offered. Selecting "Earliest" will allow the course to be active in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's best projection. Courses cannot be implemented retroactively, and therefore the actual effective

term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires 2 to 6 weeks after approval of the course at UF.

Response: Earliest Available

Effective Year

Select the requested year that the course will first be offered. See preceding item for further information.

Response: Earliest Available

Rotating Topic?

Select "Yes" if the course can have rotating (varying) topics. These course titles can vary by topic in the Schedule of Courses.

Response: No

Repeatable Credit?

Select "Yes" if the course may be repeated for credit. If the course will also have rotating topics, be sure to indicate this in the question above.

Response: No

Amount of Credit

Select the number of credits awarded to the student upon successful completion, or select "Variable" if the course will be offered with variable credit and then indicate the minimum and maximum credits per section. Note that credit hours are regulated by Rule 6A-10.033, FAC. If you select "Variable" for the amount of credit, additional fields will appear in which to indicate the minimum and maximum number of total credits.

Response: 3

S/U Only?

Select "Yes" if all students should be graded as S/U in the course. Note that each course must be entered into the UF curriculum inventory as either letter-graded or S/U. A course may not have both options. However, letter-graded courses allow students to take the course S/U with instructor permission.

Response: No

Contact Type

Select the best option to describe course contact type. This selection determines whether base hours or headcount hours will be used to determine the total contact hours per credit hour. Note that the headcount hour options are for courses that involve contact between the student and the professor on an individual basis.

Response: Regularly Scheduled

- Regularly Scheduled [base hr]
- Thesis/Dissertation Supervision [1.0 headcount hr]
- Directed Individual Studies [0.5 headcount hr]
- Supervision of Student Interns [0.8 headcount hr]
- Supervision of Teaching/Research [0.5 headcount hr]
- Supervision of Cooperative Education [0.8 headcount hr]

Contact the Office of Institutional Planning and Research (352-392-0456) with questions regarding contact type.

Weekly Contact Hours

Indicate the number of hours instructors will have contact with students each week on average throughout the duration of the course.

Response: 3

Course Description

Provide a brief narrative description of the course content. This description will be published in the Academic Catalog and is limited to 500 characters or less. See course description guidelines.

Response:

Integration of Geography and AI, or GeoAI (a subfield of spatial data science), provides novel approaches for addressing a variety of geospatial problems in the natural environment and our human society. Hands-on computing labs using real-world geospatial data to address such AI topics as: image classification, object detection, scene segmentation, simulation and interpolation, retrieval and question answering, on-the-fly data integration, and geo-enrichment.

Prerequisites

Indicate all requirements that must be satisfied prior to enrollment in the course. Prerequisites will be automatically checked for each student attempting to register for the course. The prerequisite will be published in the Academic Catalog and must be formulated so that it can be enforced in the registration system. Please note that upper division courses (i.e., intermediate or advanced level of instruction) must have proper prerequisites to target the appropriate audience for the course.

Courses level 3000 and above must have a prerequisite. Please verify that any prerequisite courses listed are active courses.

Response: Any 3000 level or higher GIS prefix course [GIS3XXX, GIS4XXX] or permission of instructor

Completing Prerequisites on UCC forms:

• Use "&" and "or" to conjoin multiple requirements; do not used commas, semicolons, etc.

• Use parentheses to specify groupings in multiple requirements.

• Specifying a course prerequisite (without specifying a grade) assumes the required passing grade is D-. In order to specify a different grade, include the grade in parentheses immediately after the course number. For example, "MAC 2311(B)" indicates that students are required to obtain a grade of B in Calculus I. MAC2311 by itself would only require a grade of D-.

• Specify all majors or minors included (if all majors in a college are acceptable the college code is sufficient).

• "Permission of department" is always an option so it should not be included in any prerequisite or co-requisite.

• If the course prerequisite should list a specific major and/or minor, please provide the plan code for that

major/minor (e.g., undergraduate Chemistry major = CHY_BS, undergraduate Disabilities in Society minor =

DIS_UMN)

Example: A grade of C in HSC 3502, passing grades in HSC 3057 or HSC 4558, and undergraduate PBH student should be written as follows: HSC 3502(C) & (HSC 3057 or HSC 4558) & UGPBH & https://www.analysin.com/analysin/ana

Co-requisites

Indicate all requirements that must be taken concurrently with the course. Co-requisites are not checked by the registration system. If there are none please enter N/A.

Response: N/A

Rationale and Placement in Curriculum

Explain the rationale for offering the course and its place in the curriculum.

Response:

This course will serve as an advanced course in GeoAI, and will require prior GIS knowledge to be successful - hence the prereq of previous GIS coursework. This course will also serve as the capstone course for a future GeoAI Certificate Program [being submitted Spring 2021 also].

Course Objectives

Describe the core knowledge and skills that student should derive from the course. The objectives should be both observable and measurable.

Response:

The primary objective of this course is to develop student knowledge and understanding of the principles, techniques, and applications of Geographic Artificial Intelligence. Assigned exercises promote a 'hands-on' approach for understanding, as well as a challenging avenue for exploration and creativity.

Specifically, the course objectives are for the student to be able to:

- 1. Describe the historical perspective of GeoAl and its foundations.
- 2. Explain the relations between AI, machine learning and deep learning
- 3. Develop expertise in the most-widely used GeoAl and ML tools and technologies
- 4. Apply GeoAl techniques to different geographical questions and geospatial datasets
- 5. Explain why geography and GIS are critical for AI to address many of the real-world problems
- 6. Examine the current state-of-the art in GeoAl and the current limitations

Course Textbook(s) and/or Other Assigned Reading

Enter the title, author(s) and publication date of textbooks and/or readings that will be assigned. Please provide specific examples to evaluate the course and identify required textbooks.

Response:

Readings: Most readings are from the recent literature and are subject to change and updates given the very timely nature of much information in this field. All research articles are available in the Canvas page for the course and organized by week. Given the advanced nature of this course and broad range of topics covered the reading list is extensive - approx. 4 papers/readings per week.

1. Hu, Y., Li, W., Wright, D., Aydin, O., Wilson, D., Maher, O, and Raad, M. (2019). Artificial Intelligence Approaches. The Geographic Information Science & Technology Body of Knowledge (3rd Quarter 2019 Edition), John P. Wilson (ed.). DOI: https://doi.org/10.22224/gistbok/2019.3.4

2. GeoAl blog: https://resources.esri.ca/education-and-research/geoai-series-2-the-birth-and-evolution-of-geoai

3. Openshaw's book 1997 AI in Geography Openshaw, S. and Openshaw, C., 1997. Artificial intelligence in geography. 1st ed. New York, NY: John Wiley & Sons, Inc. ISBN 0471969915. [Google Scholar]

4. Couclelis, H., 1986. Artificial intelligence in geography: conjectures on the shape of things to come. The Professional Geographer, 380 (1), 1–11. doi:10.1111/j.0033-0124.1986.00001.x [Taylor & Francis Online], [Google Scholar]

5. Smith, T.R., 1984. Artificial intelligence and its applicability to geographical problem solving. The Professional Geographer, 360 (2), 147–158. doi:10.1111/j.0033-0124.1984.00147.x [Taylor & Francis Online], [Google Scholar]

6. Goodchild, M., 2001. Issues in spatially explicit modeling. In: D. C. Parker, T. Berger, and S. M. Manson, eds. Agent-based models of land-use and land-cover change report and review of an international workshop october 47. Irvine, CA, 12–15. [Google Scholar]

7. Goodchild, M.F. and Janelle, D.G., 2004. Thinking spatially in the social sciences. Spatially Integrated Social Science, 3–17. [Google Scholar]

8. Kuhn, W., 2012. Core concepts of spatial information for transdisciplinary research. International Journal of Geographical Information Science, 260 (12), 2267–2276.

doi:10.1080/13658816.2012.722637 [Taylor & Francis Online], [Google Scholar]

9. Hey, A.J., et al., 2009. The fourth paradigm: data-intensive scientific discovery. Vol. 1. WA: Microsoft research Redmond. [Google Scholar]

10. Janowicz, K., et al., 2015, Mar. Why the data train needs semantic rails. Al Magazine, 360 (1), 5–14. doi:10.1609/aimag.v36i1.2560 [Crossref], [Google Scholar]

11. Jacobs, N., et al., 2009. The global network of outdoor webcams: properties and applications. In: Proceedings of the 17th ACM SIGSPATIAL international conference on advances in geographic information systems. New York, NY: ACM, 111–120. [Google Scholar]

12. Gao, S., et al., 2017. A data-synthesis-driven method for detecting and extracting vague cognitive regions. International Journal of Geographical Information Science, 310 (6), 1245–1271. [Google Scholar]

13. Mac Aodha, O., Cole, E., and Perona, P., 2019. Presence-only geographical priors for finegrained image classification. arXiv Preprint arXiv:1906.05272. [Google Scholar]

14. Yan, B., et al., 2017. From itdl to place2vec: reasoning about place type similarity and relatedness by learning embeddings from augmented spatial contexts. In: Proceedings of the 25th ACM SIGSPATIAL international conference on advances in geographic information systems. Redondo Beach, CA: ACM, 35. [Google Scholar]

15. Yan, B., et al., 2018. xnet+ sc: classifying places based on images by incorporating spatial contexts. In: S. Winter, A. Griffin and M. Sester, eds. 10th international conference on geographic information science (GIScience 2018). Melbourne, Australia: Schloss Dagstuhl-Leibniz-Zentrum fuer Informatik. [Google Scholar]

16. Yan, B., et al., 2019. A spatially explicit reinforcement learning model for geographic knowledge graph summarization. Transactions in GIS, 230 (3), 620–640. doi:10.1111/tgis.12547 [Crossref], [Google Scholar]

17. Chu, G., et al., 2019. Geo-aware networks for fine grained recognition. arXiv Preprint arXiv:1906.01737. [Google Scholar]

18. Mac Aodha, O., Cole, E., and Perona, P., 2019. Presence-only geographical priors for finegrained image classification. arXiv Preprint arXiv:1906.05272. [Google Scholar]

19. Battaglia, P.W., et al.. 2018. Relational inductive biases, deep learning, and graph networks. arXiv Preprint arXiv:1806.01261. [Google Scholar]

20. Mai, G., et al., 2019a. Deeply integrating linked data with geographic information systems. Transactions in GIS, 230 (3), 579–600. doi:10.1111/tgis.12538 [Crossref], [Google Scholar] 21. Mai, G., et al., 2019b. Relaxing unanswerable geographic questions using a spatially explicit knowledge graph embedding model. In: P. Kyriakidis, D. Hadjimitsis, D. Skarlatos, A. Mansourian, eds. The annual international conference on geographic information science. Berlin, Germany: Springer, 21–39. [Google Scholar]

22. Vahedi, B., Kuhn, W., and Ballatore, A., 2016. Question-based spatial computinga case study. In: Geospatial data in a changing world. Helsinki, Finland: Springer, 37–50. [Crossref], [Google Scholar]

23. Scheider, S., Ballatore, A., and Lemmens, R., 2019. Finding and sharing gis methods based on the questions they answer. International Journal of Digital Earth, 120 (5), 594–613.

doi:10.1080/17538947.2018.1470688 [Taylor & Francis Online], [Google Scholar] 24. Aggarwal, C.C. and Abdelzaher, T., 2013. Social sensing. In: A. C. Charu, ed. Managing and mining sensor data. Springer, 237–297. [Crossref], [Google Scholar] 25. Janowicz, K., et al., 2019. Using semantic signatures for social sensing in urban environments. In: Mobility patterns, big data and transport analytics. Amsterdam, Netherlands: Elsevier, 31–54. [Crossref], [Google Scholar]

26. Liu, Y., et al., 2015. Social sensing: a new approach to understanding our socioeconomic environments. Annals of the Association of American Geographers, 1050 (3), 512–530. doi:10.1080/00045608.2015.1018773 [Taylor & Francis Online], [Google Scholar]

27. Li, M., et al., 2019. Reconstruction of human movement trajectories from large-scale lowfrequency mobile phone data. Computers, Environment and Urban Systems, 77, 101346. doi:10.1016/j.compenvurbsys.2019.101346 [Crossref], [Web of Science ®], [Google Scholar] 28. Zheng, Y., et al., 2014. Diagnosing new york city's noises with ubiquitous data. In Proceedings of the 2014 ACM international joint conference on pervasive and ubiquitous computing. Seattle, WA: ACM, 715–725. [Google Scholar]

29. Zeile, P. and Resch, B., 2018. Combining biosensing technology and virtual environments for improved urban planning. GI_Forum, 1, 344–357. doi:10.1553/giscience [Crossref], [Google Scholar]

30. Resch, B., et al., 2015. Urban emotionsgeo-semantic emotion extraction from technical sensors, human sensors and crowdsourced data. In: Progress in location-based services 2014. Berlin, Germany: Springer, 199–212. [Crossref], [Google Scholar]

31. Regalia, B., et al., 2016. Crowdsensing smart ambient environments and services. Transactions in GIS, 200 (3), 0382–398. doi:10.1111/tgis.12233 [Crossref], [Google Scholar] 32. Martin, H., et al., 2018. Graph convolutional neural networks for human activity purpose imputation. In: NIPS spatiotemporal workshop at the 32nd Annual conference on neural information processing systems (NIPS 2018). [Google Scholar]

33. Chaix, B., 2018. Mobile sensing in environmental health and neighborhood research. Annual Review of Public Health, 39, 367–384. doi:10.1146/annurev-publhealth-040617-013731 [Crossref], [PubMed], [Web of Science ®], [Google Scholar]

34. Khan, F., et al., 2019. Mobile crowdsensing: a survey on privacy-preservation, task management, assignment models, and incentives mechanisms. Future Generation Computer Systems, 100, 456–472. doi:10.1016/j.future.2019.02.014 [Crossref], [Web of Science ®], [Google Scholar]

35. Deng, J., et al., 2009. Imagenet: a large-scale hierarchical image database. In 2009 IEEE conference on computer vision and pattern recognition. IEEE, 248–255. doi:10.1037/a0016184 [Google Scholar]

36. Bollen, K., et al., 2015. Social, behavioral, and economic sciences perspectives on robust and reliable science. Report of the Subcommittee on Replicability in Science Advisory Committee to the National Science Foundation Directorate for Social, Behavioral, and Economic Sciences, 3, 4. [Google Scholar]

37. Scheider, S., Ballatore, A., and Lemmens, R., 2019. Finding and sharing gis methods based on the questions they answer. International Journal of Digital Earth, 120 (5), 594–613. doi:10.1080/17538947.2018.1470688 [Taylor & Francis Online], [Google Scholar]

38. Adams, B., et al., 2014. Geographic information observatories for supporting science. In: K. Janowicz, B. Adams, G. McKenzie, and T. Kauppinen, eds. Proceedings of the workshop on geographic information observatories, 23 September 2014 Vienna, Austria, 32–39. [Google Scholar]

39. Janowicz, K., et al., 2014. Towards geographic information observatories. In: K. Janowicz, B. Adams, G. McKenzie, and T. Kauppinen, eds. Proceedings of the workshop on geographic information observatories, 23 September 2014 Vienna, Austria, 1–5. [Google Scholar]
40. Li, W. and Hsu, C.-Y., 2020. Automated terrain feature identification from remote sensing imagery: a deep learning approach. International Journal of Geographical Information Science, 1–24. [Google Scholar]

41. Xie, Y., et al., 2020. A locally-constrained yolo framework for detecting small and denselydistributed building footprints. International Journal of Geographical Information Science, 1–25. [Web of Science ®], [Google Scholar]

42. Duan, W., et al., 2020. Automatic alignment of contemporary vector data and georeferenced historical maps using reinforcement learning. International Journal of Geographical Information Science, page in this issue. [Web of Science ®], [Google Scholar]

43. Guo, Z. and Feng, -C.-C., 2020. Using multi-scale and hierarchical deep convolutional features for 3D semantic classification of tls point clouds. International Journal of Geographical Information Science, 1–20. [Google Scholar]

44. Zhu, D., et al., 2020. Spatial interpolation using conditional generative adversarial neural networks. International Journal of Geographical Information Science, 1–24. [Web of Science ®], [Google Scholar]

45. Polson, N.G. and Sokolov, V.O., 2017. Deep learning for short-term traffic flow prediction. Transportation Research Part C: Emerging Technologies, 79, 1–17. doi:10.1016/j.trc.2017.02.024 [Crossref], [Web of Science ®], [Google Scholar]

46. Ren, Y., et al., 2020. A hybrid integrated deep learning model for the prediction of citywide spatio-temporal flow volumes. International Journal of Geographical Information Science, 1–22. [Web of Science ®], [Google Scholar]

47. Hu, Y., 2018. Geo-text data and data-driven geospatial semantics. Geography Compass, 120 (11), e12404. doi:10.1111/gec3.12404 [Crossref], [Google Scholar]

48. Acheson, E., Volpi, M., and Purves, R.S., 2020. Machine learning for cross-gazetteer matching of natural features. International Journal of Geographical Information Science, 1–27. [Web of Science ®], [Google Scholar]

49. Ballatore, A., Bertolotto, M., and Wilson, D.C., 2013. Geographic knowledge extraction and semantic similarity in openstreetmap. Knowledge and Information Systems, 370 (1), 61–81. doi:10.1007/s10115-012-0571-0 [Crossref], [Google Scholar]

50. Regalia, B., et al., 2016. Crowdsensing smart ambient environments and services.

Transactions in GIS, 200 (3), 0382–398. doi:10.1111/tgis.12233 [Crossref], [Google Scholar] 51. Mai, G., et al., 2019b. Relaxing unanswerable geographic questions using a spatially explicit knowledge graph embedding model. In: P. Kyriakidis, D. Hadjimitsis, D. Skarlatos, A. Mansourian, eds. The annual international conference on geographic information science. Berlin, Germany: Springer, 21–39. [Google Scholar]

52. Yan, B., et al., 2019. A spatially explicit reinforcement learning model for geographic knowledge graph summarization. Transactions in GIS, 230 (3), 620–640. doi:10.1111/tgis.12547 [Crossref], [Google Scholar]

53. VoPham et al 2018. Applications in Environmental Epidemiology, Environmental Health, 17:40

Weekly Schedule of Topics

Provide a projected weekly schedule of topics. This should have sufficient detail to evaluate how the course would meet current curricular needs and the extent to which it overlaps with existing courses at UF.

Response:

GeoAI – Geographic Artificial Intelligence

Topics

1. What is GeoAl?

- a. Al versus Machine Learning versus Deep Learning
- 2. History of AI in Geography
- a. Volunteered Geographic Information (VGI) Exercise #1
- 3. The 4th Paradigm
- a. Data Synthesis Exercise #2
- 4. Spatially explicit models
- a. Graph summarization exercise #3
- 5. Question Answering and Summarization
- a. Geo-text data Exercise #4
- 6. Social Sensing
- a. Mobility analysis Exercise #5
- 7. Remote Sensing I
- a. Image classification & Segmentation Exercise #6
- 8. Remote Sensing II
- a. Terrain-feature object detection Exercise #7
- 9. Simulation and Interpolation

- a. Geostatistical Simulation and Risk Analysis Exercise #8
- 10. On the fly integration
- a. Integration of AI, Machine Learning and Deep Learning with Remote Sensing Exercise #9
- 11. Geo-enrichment
- a. Semantic Web technologies, ontologies, and Linked Data
- b. Open Source Mapping Exercise #10
- 12. Datasets and Reproducibility
- a. ImageNet Exercise #11
- 13. Moonshots: Grand Challenges in Geography

a. Can we develop an artificial GIS analyst that passes a domain-specific Turing Test by 2030? Exercise #12

- 14. Future Directions of GeoAl
- 15. Future Challenges in GeoAl

Grading Scheme

List the types of assessments, assignments and other activities that will be used to determine the course grade, and the percentage contribution from each. This list should have sufficient detail to evaluate the course rigor and grade integrity. Include details about the grading rubric and percentage breakdowns for determining grades. If participation and/or attendance are part of the students grade, please provide a rubric or details regarding how those items will be assessed.

Response: Grading

12 exercises each worth 5% = 60% total Midterm exam = 15% Final Exam = 25%

Grading Scale: A 94-100% A- 90-93.9% B+ 87-89.9% B 83-86.9% B- 80-82.9% C+ 77-79.9% C 73-76.9% C 73-76.9% C- 70-72.9% D+ 67-69.9% D 63-66.9% D- 60-62.9% E <60%

Instructor(s) Enter the name of the planned instructor or instructors, or "to be determined" if instructors are not yet identified.

Response: Dr. Jane Southworth or Dr. Anwar Sounny-Slitine

Attendance & Make-up

Please confirm that you have read and understand the University of Florida Attendance policy. A required statement statement related to class attendance, make-up exams and other work will be included in the syllabus and adhered to in the course. Courses may not have any policies which conflict with the University of Florida policy. The following statement may be used directly in the syllabus.

• Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Response: Yes

Accomodations

Please confirm that you have read and understand the University of Florida Accommodations policy. A statement related to accommodations for students with disabilities will be included in the syllabus and adhered to in the course. The following statement may be used directly in the syllabus:

• Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Response: Yes

UF Grading Policies for assigning Grade Points

Please confirm that you have read and understand the University of Florida Grading policies. Information on current UF grading policies for assigning grade points is require to be included in the course syllabus. The following link may be used directly in the syllabus:

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

Response: Yes

Course Evaluation Policy

Course Evaluation Policy

Please confirm that you have read and understand the University of Florida Course Evaluation Policy. A statement related to course evaluations will be included in the syllabus. The following statement may be used directly in the syllabus:

• 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 <u>https://gatorevals.aa.ufl.edu/public-results/</u>. 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://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at <a href="https://gatorevals.aa.ufl.edu/public-results/.

Response: Yes