

Cover Sheet: Request 16204

PHC 3XXX Higher Thinking for Healthy Humans: AI in Healthcare and Public Health

Info

Process	Course New Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Candice Vogtle cvogtle@ufl.edu
Created	5/12/2021 10:54:50 AM
Updated	5/12/2021 1:05:15 PM
Description of request	Request to create new course PHC 3XXX Higher Thinking for Healthy Humans: AI in Healthcare and Public Health.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	PHHP - Public Health 33000000	George Hack		5/12/2021
No document changes					
College	Approved	PHHP - College of Public Health and Health Professions	Stephanie Hanson		5/12/2021
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			5/12/2021
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Catalog					
No document changes					
Student Academic Support System					
No document changes					
College Notified					
No document changes					

Course|New for request 16204

Info

Request: PHC 3XXX Higher Thinking for Healthy Humans: AI in Healthcare and Public Health
Description of request: Request to create new course PHC 3XXX Higher Thinking for Healthy Humans: AI in Healthcare and Public Health.
Submitter: Candice Vogtle cvogtle@ufl.edu
Created: 5/12/2021 10:43:48 AM
Form version: 1

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:
PHC

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.).
Note: 5000 level courses must be submitted through the undergraduate new course process*

Response:
3

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:
Intermediate

- 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:
None

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:
Higher Thinking for Healthy Humans: AI in Healthcare and Public Health

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:
AI in Hlthcare and PH

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:
Spring

Effective Year

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

Response:
2022

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:
Covers history, foundational concepts and methods on artificial intelligence (AI), focusing on public health and healthcare applications, including hands-on practice on graphical/high-level AI software. The course neither provides advanced statistical/machine learning training nor programming.

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:
STA2023 Introduction to Statistics or equivalent

Completing Prerequisites on UCC forms:

- Use "&" and "or" to conjoin multiple requirements; do not use 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 *

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:
NA

Rationale and Placement in Curriculum

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

Response:
One of the main goals of AI for healthcare and public health is to be 'interventional' in addition to predictive, i.e. being able to learn data-driven models that can evaluate different what-ifs, or actionable strategies, like prevention, risk mitigation, and public health policy changes. Students going into health careers need to have a fundamental understanding of the increasing use and applications of AI in various health and community settings. This course serves as an introduction to the foundations and the applications of AI in public health and health care. It is meant to serve as the first course in a 3-part series leading to a certificate to be proposed in the near future.

Course Objectives

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

Response:

- Explain the history of AI and machine learning in Public Health and Healthcare;
- Give examples of basic AI methodologies and discuss how they apply to Public Health and Healthcare;
- Evaluate the performance of AI models in health settings and validate their appropriateness;
- Describe the health implications/issues related to AI modelling and presence of bias, addressing the concepts of causal AI;
- Summarize typical use cases and applications of AI in Public Health and Healthcare;
- Utilize high-level graphical AI software to execute a machine learning pipeline for a health related intervention so that an analysis can be completed.

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:
Textbook(s): None mandatory, but we suggest "Introduction to Statistical Learning" that is freely available online as PDF (<https://www.statlearning.com/>).

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:

- 1 History of AI and machine learning/computing in public health and healthcare;
- 2 Underpinnings and concepts related to AI used in public health and healthcare;
- 3 Overview of biomedical databases;
- 4 Algorithms for AI applications in public health and healthcare;
- 5 Use of linear/logistic regression to predict health-related modeling;
- 6 Accuracy of health data in generalizing to populations;
- 7 Decision trees;
- 8 Overview of neural networks & deep learning as it applies to individual and population based health;
- 9 EXAM 1
- 10 Natural language processing in clinical data;
- 11 Managing sample data (e.g., clustering);
- 12 Causal inference methods with epidemiological perspectives;
13. The application of Bayesian networks to health
- 14 Use cases of AI for public health (e.g. diagnostic models, epidemic forecasting, assistive AI);
- 15 Use cases of bias in AI (e.g. drug discovery, health disparity, ethics).

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:

Requirement Due date Points or % of final grade (% must sum to 100%)
 Weekly Homework Weekly 30 Points (10 x 3-points each) 30% of Final Grade
 Pipeline Assignment April 13 20 Points, 20% of Final Grade
 Exam 1 March 02 20 Points, 20% of Final Grade
 Final Exam Finals Week 30 Points, 30% of Final Grade

Instructor(s)

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

Response:

Mattia Proserpi, PhD, MEng

Attendance & Make-up

Please confirm that you have read and understand the University of Florida Attendance policy. A required 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

Accommodations

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 <https://gatorevals.aa.ufl.edu/public-results/>. 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*

* *

Response:
Yes