

**University of Arkansas for Medical Sciences
Office of the University Registrar
GUS Course Catalog Form**

This form should be used for courses offered at UAMS. If a course addition will change the curriculum for one or multiple degree plans, you will be asked to update a curriculum template for each degree program affected. Please remember to submit a copy of the syllabus with this form.

Course Changes and Additions Submission Timeline

Fall Semester February 1st (same calendar year)
Spring Semester September 1st (preceding calendar year)
Summer Semester December 1st (preceding calendar year)

This request is for a: New Course Course Change Course Retirement (skip to p. 4)

College: Graduate School

Department/Program: Biomedical Informatics

Course Title: Methods in Biomedical Informatics

Course Description: This lab-plus-lecture introduces methods and tools used in Biomedical Informatics through 'hands-on' experiences. It is intended to help solidify a student's ability to grasp core concepts of research, develop a properly-scoped proposal, plans to implement the proposal, and carry out those plans, all under the guidance of a faculty mentor.

Course Instructor: Lawrence Tarbox, PhD

Course Instructor Email: LRTarbox@uams.edu Course Instructor Phone: (501) 603-1766

Additional Instructors: None

[Click here to enter additional instructor names and email addresses](#)

[Click here to enter additional instructor names and email addresses](#)

GENERAL COURSE INFORMATION

First term course will be offered/changed: Fall Spring Summer

First year course will be offered/changed: 2017

Meeting dates differ from standard semester? Yes No

If yes, describe meeting pattern: (i.e. last 4 weeks of semester, 8 Wednesdays beginning 2nd week, etc.)

Grading Basis: Letter Grade Number of Units: 3

If Variable Credit, list the maximum number of units: *Choose an item.*

Component Type: *Lecture*

Repeat for credit? Yes No

If yes, limit to number of enrollments allowed per student: No limit

Preferred Catalog Number: *Click here to enter text.*

*Note: Preferred Catalog Numbers are not guaranteed to be used.

ENROLLMENT CONTROLS

PREREQUISITES

Subject Area	Catalog #	Course Title	Course ID (if known)
None.	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>
<i>Subj. Area</i>	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>
<i>Subj. Area</i>	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>
<i>Subj. Area</i>	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>

CO-REQUISITES

Subject Area	Catalog #	Course Title	Course ID (if known)
<i>Subj. Area</i>	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>
<i>Subj. Area</i>	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>
<i>Subj. Area</i>	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>
<i>Subj. Area</i>	<i>Catalog #</i>	<i>Course Title</i>	<i>Course ID</i>

Please list any other non-course prerequisites attached to this course (e.g. minimum GPA, exam, year in program)

None.

Minimum Number of Students to Enroll: None

Maximum Number of Students who may Enroll: None

Is enrollment in this course limited to certain groups of students (i.e. PhD students only)? Yes No

Please describe enrollment limits by groups: None.

Is advisor or instructor consent required for students to take this course? Instructor Consent

INSTRUCTION MODE

Please provide information about the first semester this course will be offered. You will have the opportunity to change this information if this form is provided prior to the last date for scheduling requests.

INSTRUCTION INFORMATION

Instruction Mode: *Face-to-face*

FOR ONLINE COURSES ONLY: Will this course be offered to students out of state? Yes No

Please select all locations where this course will be taught:

Main Campus Northwest Campus UAMS Southwest Other

If "Other" Location, please describe: *Click here to enter text.*

EXAM AND PROGRESSION

Will the course have a final exam? Yes No

Will the final exam occur during the normally scheduled course time? Yes No

Is there a minimum grade required for the student to progress? Not Required

ADDITIONAL INFORMATION

Are any degrees affected by this course addition? Yes No

If "Yes," please list all degrees affected by this change: *Click here to enter text.*

Does this course address/include:

Service Learning ¹ :	Partially <input type="checkbox"/>	100% <input type="checkbox"/>	Does not address <input checked="" type="checkbox"/>
Inter-professional Education ² (IPE)	Partially <input type="checkbox"/>	100% <input type="checkbox"/>	Does not address <input checked="" type="checkbox"/>
Cultural competency ³	Partially <input type="checkbox"/>	100% <input type="checkbox"/>	Does not address <input checked="" type="checkbox"/>
Patient-Family Centered Care ⁴	Partially <input type="checkbox"/>	100% <input type="checkbox"/>	Does not address <input checked="" type="checkbox"/>
Interdisciplinary Education ⁵	Partially <input type="checkbox"/>	100% <input checked="" type="checkbox"/>	Does not address <input type="checkbox"/>

ADDITIONAL INFORMATION:

Click here to enter text.

¹ A structured learning experience that combines community service with preparation and reflection. Students engaged in service-learning provide community service in response to community-identified concerns and learn: the context in which the service is provided, the connection between their service and their academic coursework, and their roles as citizens.

² Defined as students of two or more professions engaged in learning with, from and about each other.

³ An ability to interact effectively with people of different cultures and ethnic backgrounds. Comprises four components: Awareness of one's own cultural worldview, attitude towards cultural differences, knowledge of different cultural practices and worldviews, and cross-cultural skills. Developing cultural competence results in an ability to understand, communicate with, and effectively interact with people across cultures.

⁴ An approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among health care providers, patients, and families. It redefines the relationships in health care. The core concepts include: Dignity and respect, information sharing, participation, and collaboration.

⁵ Defined as the degree to which individuals have the capacity to obtain, process and understand basic health information and services need to make appropriate health decisions.

COURSE RETIREMENT ONLY – Course Additions and Changes can skip to pg. 5

College: *Choose an item.*

Department/Program: *Click here to enter text.*

Course Title: *Click here to enter the current title.*

Catalog Name and Number: *Click here to enter text.*

Course ID (if known): *Click here to enter text.*

What semester and year will this course be retired? *Click here to enter text.*

Are any degrees affected by this course retirement? Yes No

If "Yes," please list all degrees affected by this change (updated Curriculum Templates for any degree that will change as a result of this retirement are required to be submitted to the Office of the University Registrar):

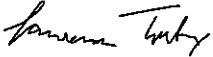
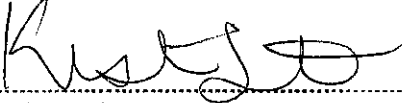
Click here to enter text.

ADDITIONAL INFORMATION:

Click here to enter text.

APPROVALS

Proposal will not be processed without all required signatures.

 ----- Course Instructor signature	Lawrence Tarbox, PhD
 ----- Associate Dean signature	Enter Associate Dean Name
Today's Date: September 9, 2016 Preparer's Email: twilliams@uams.edu	Preparer's Name: Tremaine Williams

Please submit this form and a copy of the syllabus to:

Angela Wilson, Registrar

Email: awilson5@uams.edu

Mail Slot #767

Questions? 501-526-6612

<p>Office use only</p> Received: _____ Entered into GUS <input type="checkbox"/> Entered into Schedule of Courses <input type="checkbox"/> Curriculum Registrar Initials: _____ Schedule Registrar Initials: _____	<p>Notes/Follow-up:</p>
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**COURSE APPROVAL FORM, Graduate School
University of Arkansas for Medical Sciences**

This form and attached materials are due in the Graduate School Office on the first Monday of the month. All forms will be submitted to the UAMS Graduate Council Curriculum Committee for review and approval prior to consideration by the Graduate Council.

This form is not required for minor stylistic or editorial corrections to the title or course descriptions. These may be made when revising the catalog copy.

1. **Program:** Biomedical Informatics | B | I | O | M | | | | |
Department *Alpha (Department) Code*

2. **Action proposed** (indicate one or more items): Effective term: Spring 2017

- | | |
|--|---|
| <input checked="" type="checkbox"/> Add course | <input type="checkbox"/> Change title |
| <input type="checkbox"/> Eliminate course
(No outline needed) | <input type="checkbox"/> Change credit hours from: _____ to _____ |
| | <input type="checkbox"/> Change course number
from: _____ to _____ |
| | _____ Change description |

3. **Course ID, title and description:**

		Methods in BMI
<i>prefix</i>	<i>number</i>	<i>title (20 characters)</i>
Methods in Biomedical Informatics		
<i>catalog name (40 characters)</i>		

Scheduled offering: Fall Spring Summer On demand

To cross list a course, use the Course Cross Listing Form.

Describe the course in sentence form using 50 words or less as it is to appear in the catalog. List prerequisites, co-requisites and possible off-site instructional opportunities or requirements.
This lab-plus-lecture introduces methods and tools used in Biomedical Informatics through 'hands-on' experiences. It is intended to help solidify a student's ability to grasp core concepts of research, develop a properly-scoped proposal, plans to implement the proposal, and carry out those plans, all under the guidance of a faculty mentor.

4. **Justification:**

Justify this change in terms of course needs or curriculum improvement. State the effect of this change on any degree programs. Identify the courses to be eliminated, if any, if this course is approved. (Course Approval Forms must also be submitted for these courses) Identify any existing course or courses that would extensively overlap or be duplicated if the proposed curricular change occurs. Provide statements of concurrence with the change from the chairperson(s) and dean(s) of the programs/areas offering the affected courses.

There is no change on any of the current degree programs. This course not only helps the student realize where they could improve their problem-solving skills, but also introduces the student to the types of skills needed for both successful graduate studies, as well as a successful career post-graduation.

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University of Arkansas for Medical Sciences

COURSE TITLE & NUMBER: Methods in Biomedical Informatics BIOM xxxx

CREDIT HOURS: 3 units

PROPOSED DATE/SEMESTER: SPRING 2017

COURSE DESCRIPTION:

This lab-plus-lecture course introduces the methods and tools often used in Biomedical Informatics through 'hands-on' experiences. In addition, the course is intended to help solidify a student's ability to grasp the core concepts of a research problem, come up with a properly-scoped proposal to explore one or more possible solutions to the problem during the semester, make plans to implement the proposal, and then carry out those plans by the end of the semester, all under the guidance of a faculty mentor. The course not only helps the student realize where they could improve their problem-solving skills, but also introduces the student to the types of skills needed for both successful graduate studies, as well as a successful career post-graduation.

The lecture portion of the course is a review of methods and tools often used in biomedical informatics, and compliments the information being presented in the Introduction to Biomedical Informatics (BMI) course. The Introduction to BMI course covers the theory and principles, while this course, Methods in BMI, covers some of the practical aspects. Whenever possible the Methods in BMI course will be a 'hands on' experience using the tools.

The lab portion of the course allows the student to take a deeper dive into a topic of interest, potentially using some of the methods and tools reviewed in the lecture portion. Prior to the course start, faculty members willing to serve as mentors will have listed several problem topics that students can choose from in creating the student's proposal. In general, the topics come from actual research issues that faculty mentors are working on. The faculty member should have already restricted their topics to a scope that they believe a new student could accomplish within the timeline of a 3 unit, one semester class. Students then write brief proposals on how they might address topics of interest. Based on reviews of the proposals, students and mentors pair up early in the course. Students then carry out their selected proposal through the remainder of the course, culminating in a presentation of their results at the end of the course.

COURSE OBJECTIVES:

Upon successful completion of this course, the student is able to:

1. Identify methods and tools typically used by Biomedical Informaticists, and have a conceptual understanding of what they do and how they are used.
2. Write a research proposal and plan addressing a selected research topic.
3. Carry out the research plan.

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4. Present the outcome of the research plan both orally and in written form.
5. Review and assess other people's research projects.

PRE-REQUISITES: None. Consent of instructor required.

ATTENDANCE: Attendance is required for all classes. Excused absences may be obtained only by permission from the course director.

STUDENT EVALUATION: Students are required to participate in 80% or more of the weekly discussions and hands-on exercises in order to receive a passing grade.

If the student meets the discussion participation requirement, then the final grade is determined by the outcome from the student's project. There is no final examination. The student instead will present the results of their work to the rest of the class, who will provide their assessments of the student's work. These assessments will be averaged to create a single peer assessment. A selected group of faculty members will also assess the students' work, as well as each student's mentor. The final grade will be the average of the peer, faculty, and mentor assessments of the student's work.

COURSE EVALUATION: At the end of the course, students will be provided with a Course Evaluation Form to anonymously assess the content and delivery of the course. Faculty will assess the course each term and make any appropriate modifications and updates.

TEXTBOOKS: None.

COURSE DIRECTOR: Lawrence Tarbox, PhD

CONTACT: University of Arkansas for Medical Sciences,
4301 West Markham Street, Slot # 449
Little Rock, AR 72205

OFFICE HOURS: By appointment. Please contact Diana Stockton at 501.603.1416 or stocktondianac@uams.edu.

TENTATIVE COURSE SCHEDULE:

SCHEDULE: Class will meet for a weekly lecture on skills that could prove useful to the student. In addition, each student will meet with their mentor at a mutually agreed time to discuss the student's progress on their chosen research topic. Students are encouraged, but not required, to utilize other resources, such as online tutorials or courses, that could help the student successfully complete their proposal.

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ASSIGNMENTS:

1. A research proposal, drawn from the set of topics for which faculty mentors are available (1st week).
2. A research plan to accomplish the research proposal (2nd week)
3. Weekly progress reviews (3rd through 13th week)
4. A final written report of the outcome of the student's work (14th week).
5. A 10 minute presentation of the student's work. (15th week)
6. Assessments of other student's work (by the end of the normally-scheduled final examination time).
7. Brief weekly exercises using tools presented in the lecture portion of the class.

MAJOR TOPICS :

1. Proposal writing
2. Planning methods and tools
3. Modelling methods of tools
4. Database methods and tools
5. Ontology methods and tools
6. Data gathering methods and tools
7. Data manipulation methods and tools
8. Project tracking tools
9. Data analysis methods and tools
10. Results analysis methods and tools
11. Presentation methods and tools
12. Report writing

Additional topics depend on the research topics chosen by the student and interactions with the student's mentor.

SPECIAL ASSISTANCE: Students who believe they may need accommodations in this class based on mental or physical impairments should contact the course instructor, as soon as possible.

Course Approval Form

6. Program Approvals:

Fred Prior, PhD
(Print or type) Chairperson, Academic Department or Area

[Signature] Chairperson, Academic Department or Area 9/20/16 Date

[Signature]
College Dean (Dean McGehee for College of Medicine) 10.20.16 Date

7. Graduate School Approvals

[Signature] 10/20/16
Chairperson, Graduate Council Date

[Signature] 10.20.16
Dean of the Graduate School Date