



Syllabus

Course title and number	BICH 489/689 Advanced Genome Annotation with Ontologies
Term	Spring 2013
Meeting times and location	T 7-9pm 106 Biochemistry http://aggiemap.tamu.edu/init.asp?Bldg=1507
	1CR

Course Description and Prerequisites

Undergrads must have completed BICH 485 Genome Annotation with Ontologies.

Although there are no formal prerequisites for graduate students, students should have a good, solid understanding of Genetics and Molecular Biology. We strongly recommend students to take BICH/GENE631 and/or BIOL650.

Students will be expected to do independent work to supplement their background knowledge as needed. In addition, we will assume that students are familiar with the basic operational knowledge of computers and the internet.

Learning Outcomes or Course Objectives

The course will cover theory and practice of functional annotation of gene products.

After completing this course students will be able to:

- Describe different levels of Genome Annotation from gene models to functional annotation to systems annotation
- Describe the use of ontologies for annotation
- Discuss the nature of gene function
- Describe different systems used for classification of genes and gene products
- Describe automated and manual approaches to annotation
- Compare models for biocuration and the challenges for each model.
- Perform literature-based annotation using Gene Ontology (GO)
- Evaluate the quality of literature-based annotations done by others (peers or students in BICH 460)
- Write a curriculum development section for an NSF CAREER award based on student annotation
- Students who complete this course should be qualified to teach undergraduate annotation courses to their areas of interest, either at TAMU or in their future jobs.

Instructor Information	
Name	Dr. Jim Hu, PhD
Telephone number	979-862-4054
Email address	jimhu@tamu.edu
Office hours	By appointment
Office location	Department of Biochemistry and Biophysics Room 443A, Biochemistry and Biophysics Building Texas A&M University College Station, Texas 77843-2128

Grading Policies

Letter graded.

Grades will be based on:

- Preparation for each lecture and participation in the discussions
- Evaluation of peer and student evaluations
- Grad only: Usage notes for ontology terms
- Grad only: Ontology term requests and Annotation requests to GO Consortium

Points Distribution			
Undergrad		Grad	
Mentoring	100	Mentoring	100
Annotation Evaluation	100	Annotation Evaluation	100
		Extra Activities	100
Total	200	Total	300
Grading Scale			
A	150+	A	250+
B	125-149	B	200-249
C	100-124	C	175-200
D	75-99	D	150-174
F	<75	F	<150

Mentoring: 100 Points

Each student is required to provide written feedback on annotations made by students in the Community Assessment of Community Annotation with Ontologies (CACAO) competition during the first round of participation by any student. Students may join CACAO during any point in the semester and BICH 489/689 students are expected to provide written evaluations for these students throughout the semester. Each student is expected to lead group discussions with students enrolled in CACAO at TAMU.

Attendance Policy:

Students start with 20 points for attendance, which is included in the points for mentoring. 10 points will be deducted for each unexcused absence. Note that the final attendance score can be a negative number. Attendance policy for this class conforms to student rule 7. See: <http://student-rules.tamu.edu/rule07>

Annotation evaluations: 100 Points

Each student will review annotations of other students in the course, as well as annotations being done in parallel by undergraduates doing GO annotation as part of the Community Assessment of Community Annotation with Ontologies.

Extra Activities (Grad only): 100 Points

Students will be graded on extra activities that reflect deeper understanding and use of the Gene Ontology. This will include usage notes for Gene Ontology added to the GONUTS wiki, term requests to the GO Consortium on the GO Sourceforge tracker, and Annotation requests on the GO Sourceforge tracker. Undergrads are welcome to do these activities, but they are not required.

Course Topics, Calendar of Activities, Major Assignment Dates		
Meeting/Date	Topic	Notes
Tues Jan 15	<ul style="list-style-type: none"> ● Introductions ● Course organization and learning objectives ● Set up accounts on GONUTS ● Web resources 	
Tues Jan 22	Training	● Pre-evaluation out
Tues Jan 29	Training	
Feb 3-10*	Written feedback for CACAO students	CACAO round 1
Feb 10-17*	Annotation assessment	
Feb 17-24*	Challenge judgements, written feedback for new CACAO students	CACAO round 2
Feb 24-Mar 3**	Annotation assessment	
Mar 3 - 17*	Challenge judgements, written feedback for new CACAO students	CACAO round 3
Mar 17-24**	Annotation assessment	
Mar 24-31*	Challenge judgements, written feedback for new CACAO students	CACAO round 4
Mar 31-April 7**	Annotation assessment	
April 7-14*	Challenge judgements, written feedback for new CACAO students	CACAO round 5
April 14-21**	Annotation assessment	
Tues April 23	Wrap up Broader impacts and CACAO	

* Students will perform assessments of challenges made by students in CACAO and provide written feedback to the students.

** Students will meet individually and/or in small groups to discuss their annotations with instructors and to review their review of annotations done by students in CACAO rounds as indicated.

Other Pertinent Course Information
COURSE ORGANIZATION:

There is no textbook for this course. We will use online resources and the primary literature.

The course will begin with two weeks of intensive background and training in annotation theory and practice. This will be followed by real annotation activities by students and evaluation of competitive annotations by CACAO students at TAMU and elsewhere.

COURSE REQUIREMENTS:

E-mail and computer access:

All students are required to have an active e-mail account that can receive course announcements from Howdy. You will also need to be able to access the Internet to do class assignments, preferably with a high-speed connection, as you will need to access various Internet resources, including but not restricted to the class websites. If you have a laptop, it may be useful to bring it to class.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit <http://disability.tamu.edu>

Make Up Policy

The Make Up policy follows university policy and there will be NO make ups for missed classes. Students with a university excused absence will not be penalized for failing to attend the class (see attendance policy above), but should assess annotations or challenges in their own time before the next class.

Academic Integrity

For additional information please visit: <http://www.tamu.edu/aggiehonor>

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Copyright Policy

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