Course Change Request

Date Submitted: 11/04/24 8:00 pm

Viewing: FRSC 325 : Molecular Biology

Last approved: 01/30/21 4:52 am

Last edit: 11/04/24 8:00 pm

Changes proposed by: kcarisi

Programs referencing this course

SC-BS-FRSC: Forensic Science, BS

Other Courses

Select modification type:

Substantial

Are you completing this form on someone else's behalf?

No ~~Yes~~

Effective Term: Spring 2025

Subject Code: FRSC - Forensic Science

Course Number: 325

Bundled Courses:

In Workflow

1. **FRSC Representative**
2. **SC Curriculum Committee**
3. SC Curriculum Committee
4. SC Assistant Dean
5. Assoc Provost-Undergraduate
6. Registrar-Courses
7. Banner

Approval Path

1. 11/04/24 8:22 pm Kimberly Rule (kcarisi): Approved for FRSC Representative

History

1. Jan 30, 2021 by Kimberly Rule (kcarisi)

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Molecular Biology

Banner Title: Molecular Biology

Will section titles vary by semester? No

Credits: 3

Schedule Type: Lecture

Hours of Lecture or Seminar per week: 3

Repeatable: May be only taken once for credit, limited to 3 attempts (N3)

Max Allowable Credits: 9

Default Grade Mode: Undergraduate Regular

Recommended Prerequisite(s):

Recommended Corequisite(s):
FRSC 326

Required Prerequisite(s) / Corequisite(s) (Updates only):
BIOL 213, BIOL 214 or STAT 250, and BIOL 311 or BIOL L311. ~~311.~~

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
	(	BIOL 213	C	UG		
Or		BIOL 213	XS	UG	)	
And	(	BIOL 214	C	UG		
Or		BIOL 214	XS	UG		
Or		STAT 250	C	UG		
Or		STAT 250	XS	UG	)	
And	(	BIOL 311	C	UG		

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
Or		BIOL 311	XS	UG	)	

Registration Restrictions (Updates only):

Registrar's Office Use Only - Registration Restrictions:

Field(s) of Study:

Class(es):

Level(s):

Degree(s):

School(s):

Catalog Description:

This course will cover the structure and function of genes. Students will study nucleic acid structure and the mechanics of replication, repair, transcription, and translation in bacteria, archaea, and eukaryotes. A central goal is understanding gene expression and regulation at all levels, and the structure-function relationships of nucleic acids and proteins. Critical experiments will be examined to learn how our current understandings have developed from experimental results. Techniques in molecular biology will be examined in lecture as necessary to understand experiments and concepts. The course will also cover protein structure and function- especially protein interactions with nucleic acids- and post-translational events that effect the functional output of genes. The course will also pursue a selection of topics which varies from year to year but all impact on interpretation of forensic DNA evidence.

Justification:

What: Adding lower-level equivalent pre-requisite of BIOL 311 (BIOL L311).

Why: To eliminate the need of registration overrides for the lower-level equivalent course of BIOL 311.

Does this course cover material which crosses into another department? No

Learning Outcomes:

Students will be able to explain how the structure and chemistry of nucleic acids relate to their functions, their relative stability, and their interactions with proteins.
Students will be able to understand the regulation of protein and nucleic function by structure-function relationships and macromolecular interactions.
Students will know the complete structures of DNA/RNA components, the different forms of nucleic acids and the types of amino acids that mediate backbone and sequence-specific binding.
Students will be able to relate DNA structure to forms of DNA damage.
Student will be able to compare and contrast mechanisms of DNA replication, repair, recombination, transcription, gene regulation, RNA processing and translation in bacteria and eukaryotes.
Students will understand recombinant DNA techniques, PCR, and DNA sequencing.
Students will be able to interpret the results of experiments using standard molecular techniques to explain how classic experiments have led to our current understandings about DNA replication, recombination, transcription, gene regulation, etc.
Students will be able to explain how recent genomics and functional genomics advances are altering our views of molecular biology in, for example, eukaryotic transcription and chromatin function.
Students will be able to apply molecular knowledge to understand and hypothesize about specific complex systems including human disease states with underlying molecular dysfunction.

Will this course be scheduled as a cross-level cross listed section?

Attach Syllabus

FRSC 325-525 Molecular Biology Syllabus.pdf

Additional Attachments

Specialized Course Categories:

Additional Comments:

Reviewer Comments

Key: 17039