

# Biochemistry Graduate Certificate

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The graduate Certificate in Biochemistry is 12-credit-hour program. It provides skills and training necessary to advance in the area of biochemistry, which deals with the structure, composition, and chemical reactions of substances in living systems. Biochemistry includes bioorganic, bioinorganic and biophysical chemistry. The Certificate requires three biochemistry lecture courses (each three credits) and three credits of elective courses. All students must take these three required courses and three credits of elective course, subject to the Graduate School regulations.

A minimum of three of the courses must be taken at UMSL. Research credits must be taken at UMSL. Courses may be substituted with the permission of the Certificate coordinator. For more information, students can contact the Department of Chemistry and Biochemistry.

Certificate applicants must meet the general University of Missouri-St. Louis Graduate School admissions requirements to be admitted to the Certificate program. Students admitted to the Chemistry M.S. program are automatically eligible to pursue the Certificate; however, they must apply separately to the Certificate program. Students must maintain a minimum GPA of 3.0 to remain in the Certificate program. The certificate is awarded after completion of the 12 credit hours of courses listed below. Students must apply to be awarded the Certificate. Courses taken while enrolled as an undergraduate may not be repeated nor will they count towards the Certificate.

This 12-credit-hour certificate program also counts toward the 30-credit-hour Master of Science in Chemistry degree program requirements. Students may choose to combine this certificate with other courses and/or certificates to obtain the Master of Science in Chemistry degree.

## Required Courses

CHEM 5722	Advanced Graduate Biochemistry	3
CHEM 5772	Advanced Physical Biochemistry	3
CHEM 5774	Bioinformatics	3

## Elective Courses 3

Choose a total of 3 credit hours from the following:

CHEM 5794	Special Topics in Biochemistry
CHEM 4733	Biochemistry Laboratory
CHEM 6787	Problem Seminar in Biochemistry
CHEM 6905	Graduate Research in Chemistry <sup>1</sup>

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If CHEM 6905 is chosen, the research project must be in biochemistry.

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Demonstrate an in-depth knowledge in protein, nucleic acid and membrane biochemistry, as well as biophysical chemistry or computational biology.
- Take responsibility for the success of projects associated with biochemistry.