

# BIOMEDICAL SCIENCES, CERTIFICATE (1801)

## Program Coordinator

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The Department of Biological Sciences at Western Kentucky University offers an 18-hour Graduate Certificate in Biomedical Sciences with highly flexible start dates, completion timelines, and the ability to complete all coursework asynchronously online. The certificate provides graduate-level preparation for professional school applications, career advancement, professional accreditation, or future graduate study.

Certificate coursework strengthens students' critical thinking and scientific reasoning skills while providing foundational knowledge relevant to professional programs or other advanced degrees in biology. Up to 12 credit hours accrued in the certificate program are eligible to count towards the 30-hour M.S. in Biology, and both credentials may be earned with a minimum of 36 credit hours. The certificate includes coursework in cell biology, molecular genetics, virology, cancer biology, immunology, microbiology, biochemistry and neurobiology, with elective courses available in statistics, evolution, plant therapeutics, and toxicology. Students may enter the certificate program during any of WKU's four academic terms, with start dates in January, May, August, and December. Students may choose accelerated or relaxed timelines based on their needs.

## Graduate Studies Admission

Please refer to the admission section (<http://catalog.wku.edu/graduate/admission/>) of this catalog for Graduate Studies admission requirements.

## Program Requirements (18 hours)

| Code                                  | Title                              | Hours |
|---------------------------------------|------------------------------------|-------|
| <b>Required Core Courses</b>          |                                    |       |
| Select 6-12 hours of the following:   |                                    |       |
| BIOL 403G                             | Molecular Basis of Cancer          |       |
| BIOL 407G                             | Virology                           |       |
| BIOL 411G                             | Cell Biology                       |       |
| BIOL 495G                             | Molecular Genetics                 |       |
| CHEM 446G                             | Biochemistry                       |       |
| <b>Required Advanced Courses</b>      |                                    |       |
| Select 6-12 hours of the following:   |                                    |       |
| BIOL 536                              | Advanced Neurobiology              |       |
| BIOL 560                              | Advanced Cell Biology              |       |
| BIOL 566                              | Advanced Molecular Genetics        |       |
| BIOL 568                              | Advanced Microbiology              |       |
| BIOL 570                              | Advanced Immunology                |       |
| CHEM 562                              | Advanced Biochemistry              |       |
| <b>Electives</b>                      |                                    |       |
| Select 0 to 6 hours of the following: |                                    |       |
| BIOL 490G                             | Plants as Alternative Therapeutics |       |
| BIOL 522                              | Biological Systematics             |       |
| BIOL 524                              | Evolution and Ecological Genetics  |       |
| BIOL 543                              | Environmental Science Concepts     |       |
| BIOL 545                              | Animal Communication               |       |

|                                                  |                         |
|--------------------------------------------------|-------------------------|
| BIOL 579                                         | Mechanistic Toxicology  |
| BIOL 582                                         | Biometry                |
| CHEM 535                                         | Analytical Biochemistry |
| <b>Total Hours</b>                               | <b>18</b>               |
| <b>Completion of Certificate Assessment Exam</b> |                         |