DOCTOR OF PHILOSOPHY IN THE FIELD OF CANCER BIOLOGY

Specific admission requirements are shown on the Graduate Program Finder. (http://www.gwu.edu/all-graduate-programs)

Candidates must hold a bachelor’s degree in biological sciences, chemistry, or a related field.

The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Graduate Programs (http://bulletin.gwu.edu/arts-sciences/#degreeregulationstext).

The requirements for the Doctor of Philosophy program (http://bulletin.gwu.edu/arts-sciences/#doctoraltext).

72 credits, including required core and elective courses. Successful completion of a grant-style qualifier examination is required for advancement to candidacy.

Students are advised to complete up to 48 credits comprising required interdisciplinary core courses, required cancer biology core courses, electives, and advanced readings and research in the first two years of PhD study. Upon successful completion of a grant-style qualifier, students then register for up to 24 credits of dissertation research through completion and successful oral defense of a written dissertation.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td></td>
<td><strong>Required interdisciplinary core courses</strong></td>
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<tr>
<td>BMSC 8210</td>
<td>Genes to Cells</td>
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<tr>
<td>BMSC 8212</td>
<td>Systems Physiology</td>
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<tr>
<td>BMSC 8215</td>
<td>Lab Rotations</td>
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<tr>
<td>BMSC 8216</td>
<td>Scientific Writing, Presentation Skills, and Seminar Planning</td>
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<tr>
<td>BMSC 8217</td>
<td>Ethics and Grant Writing</td>
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<tr>
<td>BMSC 8218</td>
<td>Career Options in the Biomedical Sciences</td>
<td></td>
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<tr>
<td>BMSC 8230</td>
<td>Molecular Basis of Human Disease</td>
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<tr>
<td>BMSC 8235</td>
<td>Applied Biostatistics for Basic Research</td>
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<td></td>
<td><strong>Required cancer biology core courses</strong></td>
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<tr>
<td>MMED 8214</td>
<td>Molecular Medicine Seminar</td>
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<tr>
<td>MMED 8221</td>
<td>The Basic Science of Oncology</td>
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<td></td>
<td><strong>Electives</strong></td>
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<td><strong>24 credits elective courses selected in consultation with graduate program advisor:</strong></td>
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<tr>
<td>BIOC 6223</td>
<td>Bioinformatics</td>
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<tr>
<td>BIOC 6236</td>
<td>Medical Genomics</td>
<td></td>
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<tr>
<td>BIOC 6240</td>
<td>Next Generation Sequencing</td>
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<tr>
<td>BIOC 6281</td>
<td>Topics</td>
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<tr>
<td>BMSC 8231</td>
<td>Introduction to Genomics, Proteomics, and Bioinformatics</td>
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<tr>
<td>MICR 8210</td>
<td>Infection and Immunity</td>
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<tr>
<td>MICR 8230</td>
<td>Molecular and Cellular Immunology</td>
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<td>MICR 8270</td>
<td>Advanced Topics in Immunology</td>
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<tr>
<td>MMED 8222</td>
<td>Molecular Oncology</td>
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<tr>
<td>MMED 8281</td>
<td>Molecular Pharmacology and Neurobiology of Excitable Tissues</td>
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<tr>
<td>MMED 8998</td>
<td>Advanced Reading and Research</td>
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<tr>
<td>PHAR 6116</td>
<td>Pharmacogenomics and Personalized Medicine</td>
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**Dissertation Research**

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<th>Code</th>
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<tbody>
<tr>
<td>MMED 8999</td>
<td>Dissertation Research</td>
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</table>

Required courses may be waived at the discretion of the graduate program director based on written documentation of prior equivalent coursework. Any waiver increases the number of electives required, by the number of credits waived.