BIOMEDICAL SCIENCES

Joint Degrees

Joint M.D./Ph.D. with the College of Medicine

Requirements listed here are in addition to requirements listed in GCAC-211 Joint Degree Programs (https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-211-joint-degree-programs/).

Admission Requirements

Prospective students interested in simultaneously pursuing a M.D. and Ph.D. degree must apply to the College of Medicine M.D. program using the national American Medical College Application Service (AMCAS) application system and indicate their intent to pursue the joint-degree program. Applicants must also meet the admission requirements of the Graduate Program and the Ph.D. admission requirements listed on the Admission Requirements tab, however, GRE scores are not required. The M.D./Ph.D. Admissions Committee reviews applications and evaluates candidates for acceptance into both the M.D. and Ph.D. programs. After the review committee has accepted an applicant to the joint degree program, s/he must apply to the Graduate School (http://www.gradschool.psu.edu/prospective-students/how-to-apply/) for admission to the graduate program. Students must be admitted to the joint degree program prior to taking the first course they intend to count towards the graduate degree. Applicants not accepted into the joint-degree program may be referred to either the M.D. or Ph.D. program, depending on their qualifications.

Applicants to this program generally have very strong grades and MCAT scores, as well as a strong and sustained background in research. Applicants must be able to clearly articulate reasons for pursuing the joint degree. Letters of recommendation from faculty who have advised the applicant in research and who can comment on the applicant’s passion and potential for research are strongly encouraged.

Degree Requirements

Students must fulfill all requirements for each degree in order to be awarded that degree. Degree requirements for the M.D. program are listed on the Penn State College of Medicine website (http://www.med.psu.edu/web/md/home/). If students accepted into the joint degree program are unable to complete the M.D. degree, they are still eligible to receive the Ph.D. degree if all the Ph.D. degree requirements have been satisfied.

During the first two years of medical school, the student conducts at least three research rotations. After successful completion of the first two years of medical school the student enters the BMS Graduate Program and may be admitted to one of its options.

During the summer after the second year of medical school M.D./Ph.D. students take Step 1 of the United States Medical Licensing Examination (USMLE), which serves as the qualifying examination for the BMS Graduate Program.

In addition to the requirements for the Ph.D. committee (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/phd-dissertation-committee-formation/) for a Ph.D. student in the BMS Graduate Program, at least one member of the Ph.D. committee must be on the M.D./Ph.D. Steering Committee. This member may serve other roles on the Ph.D. committee.

M.D./Ph.D. students must complete 28 credits:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS 502</td>
<td>Cell and Systems Biology</td>
<td>1</td>
</tr>
<tr>
<td>BMS 503</td>
<td>Flow of Cellular Information</td>
<td>1</td>
</tr>
<tr>
<td>BMS 596</td>
<td>Individual Studies</td>
<td>1</td>
</tr>
<tr>
<td>BMS 506A</td>
<td>Biological Basis of Human Health and Disease A</td>
<td>2</td>
</tr>
<tr>
<td>BMS 506B</td>
<td>Biological Basis of Human Health and Disease B</td>
<td>2</td>
</tr>
<tr>
<td>BMS 512</td>
<td>Data Analysis For The Biomedical Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>BMS 590</td>
<td>Colloquium</td>
<td>4</td>
</tr>
<tr>
<td>BMS 591</td>
<td>Biomedical Research Ethics</td>
<td>1</td>
</tr>
<tr>
<td>BMS 801</td>
<td>Writing Grant Proposals for Biomedical Research</td>
<td>1</td>
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<tr>
<td>BCHEM 590</td>
<td>Colloquium</td>
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<tr>
<td>PSIO 501</td>
<td>Scientific Analysis and Presentation</td>
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<td>PHARM 590</td>
<td>Colloquium</td>
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<td>MICRO 590</td>
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<td>MICRO 572</td>
<td>Literature Reports</td>
<td>2</td>
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<td>NEURO 590</td>
<td>Colloquium</td>
<td>2</td>
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<tr>
<td>VIRIM 580</td>
<td>Critical Reading in Immunobiology</td>
<td>2</td>
</tr>
<tr>
<td>At least 6 elective credits of 500-level elective courses selected in consultation with the student’s dissertation adviser and Ph.D. committee.</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits

28

The M.D./Ph.D. candidate prepares a written comprehensive examination in the format of a grant application and gives an oral presentation of this proposal to their Ph.D. committee.

A dissertation must be prepared and defended by each M.D./Ph.D. candidate. The dissertation must be accepted by the Ph.D. committee, the chair of the graduate program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense). Students are required to have at least one first-author publication accepted or published based on their dissertation research prior to the final oral examination.