## Molecular Biology, Genetics and Cancer Proposed Curriculum

### Year 1

<table>
<thead>
<tr>
<th>Month</th>
<th>Block</th>
<th>Courses</th>
<th>Rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep/Oct</td>
<td>Block 1</td>
<td>IBMS (2.5) GSND5200Q Critical Readings of the Literature BIOC 5290Q (1.5)</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Rotation Oct/Nov/Dec (2) MBGC593A</td>
</tr>
<tr>
<td>Nov/Dec</td>
<td>Block 2</td>
<td>IBMS (2.5) GSND5200Q Critical Readings of the Literature BIOC 5290Q (1.5) Elective</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Rotation Jan/Feb/Mar (2) MBGC593B</td>
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<tr>
<td>Jan/Feb</td>
<td>Block 3</td>
<td>Required course (2) Elective or required course</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Rotation Mar/Apr/May (2) MBGC593C</td>
</tr>
<tr>
<td>Mar/Apr</td>
<td>Block 4</td>
<td>Required course (2) Elective or required course</td>
<td>MBGC5910Q (Seminar course) through the year (0.5+0.5)</td>
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<tr>
<td>May/Jun</td>
<td>Block 5</td>
<td>Ethics GSND 5001Q (1) Elective or required course</td>
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<tr>
<td>Jul/Aug</td>
<td>Block 6</td>
<td>Initiate Research with Mentor (2)</td>
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### Year 2

<table>
<thead>
<tr>
<th>Month</th>
<th>Block</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Sep/Oct</td>
<td>Block 7</td>
<td>Research (2) Elective (2)</td>
</tr>
<tr>
<td>Nov/Dec</td>
<td>Block 8</td>
<td>Professional Skills—Presentations GSND 05960 (1) Experimental Design and Statistics GSND 5135Q (2) Research (2) Elective or Required Course (2)</td>
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<td>Jan/Feb</td>
<td>Block 9</td>
<td>Professional Skills—Grant Writing GSND 5006Q (2) Research (2)</td>
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<td>Mar/Apr</td>
<td>Block 10</td>
<td>Candidacy Exam</td>
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<tr>
<td>May/Jun</td>
<td>Block 11</td>
<td>Thesis Research</td>
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<td>July/Aug</td>
<td>Block 12</td>
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**Required Courses:** Students should select 8 credits minimum from the following (can also be used as electives)

- Cellular Pathology-Lambert (2 cr Block 2/8)
- Molecular Genetics of Model Organisms MBGC5055Q-Kaback (2 cr Block 3)
- Protein Dynamics in Health and Disease MBGC5030Q-Suzuki (2cr Block 5)
- Nucleic Acids-Modak (2x2 cr, Blocks 7, 8)
- Cancer Biology-Moran/Ozer MBGC 5015Q, MBGC 5020Q (2x2cr Block 3/4)
- Bioinformatics, Genomics and Proteomics-Li/Tian MBGC 5002Q (2 cr Block 4)

**Electives:**

- Methods in Microscopic Imaging (2 cr) Existing Dental Course
- Metallic Systems in Biomaterials (2 cr) Existing Dental Course
- Polymeric Systems in Biomaterials (2 cr) Existing Dental Course
- Viruses, Cells and Disease BIOC5125Q (2cr)
- Animal Models of Human Disease GSND 5215Q (3 cr)
- Clinical Trials (2 cr) Existing course
- Advanced Bioinformatics BIOC 5003Q (2 cr)
- Human Genetics MICR 5045Q (2 cr)
- Molecular mechanisms of Medical Disorders (4 cr)
- Pharmacological Principles (1-2 cr)
- Signalling Mechanisms in Biological Systems MBGC 5220Q (2 cr)
- Methods in Stem cells, transgenics, imaging techniques (2 cr)
- Developmental Biology(2 cr)
- Structural Biology (1 cr)-Neiditch?
- General Pathology
- Introduction to Clinical Oncology (1 cr)
- Principles of Clinical and Translational Research in Oncology (2 cr)
- Neuroscience (2 x 2 cr)
- Classic and 21st Century Pathogens TIII 5620Q (2cr)
- Molecular and Cellular Immunology PATH 5210Q (3 cr)
- Foundations of Biochemistry and Molecular Biology BIOC5007Q (1cr)
- PLUS all Molecular Sciences Required Courses can serve as electives for this or other tracks
Molecular Biology, Genetics and Cancer Proposed Curriculum

Guided Curricula in:

- Cancer Biology
- Gene Expression and Signalling
- Genomics and Bioinformatics
- Structural Biology
- Translational Research