**KSU | Depts. of EEOB & MCB | B.S. in Biology with a track in Cytogenetics**

**BIO CHECKLIST | Effective Fall 2014**

<table>
<thead>
<tr>
<th>AREA A: Essential Skills</th>
<th>HRS</th>
<th>GR</th>
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</thead>
<tbody>
<tr>
<td>ENGL 1101 Composition I (3 hrs)</td>
<td></td>
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<tr>
<td>ENGL 1102 Composition II (3 hrs)</td>
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<tr>
<td>MATH 1112 College Trig or MATH 1113 PreCalculus (3 hrs)</td>
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<tr>
<td>or MATH 1190a Calculus I (4 hrs)</td>
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<tr>
<th>AREA A: Lower Division Requirements</th>
<th>HRS</th>
<th>GR</th>
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<tbody>
<tr>
<td>BIOL 1107/L Biological Principles I (3/1 hours)</td>
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<tr>
<td>BIOL 1108/L Biological Principles II (3/1 hours)</td>
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<tr>
<td>PHYS 1111/L or 2211/L (3/1 hours)</td>
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<tr>
<td>PHYS 1112/L or 2212/L (3/1 hours)</td>
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<tr>
<th>AREA B: Institutional Options</th>
<th>HRS</th>
<th>GR</th>
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</thead>
<tbody>
<tr>
<td>ECON 1000 Contemporary Economic Issues*</td>
<td></td>
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<tr>
<td>Select 1 three hour course:</td>
<td></td>
<td></td>
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<tr>
<td>AADS, AMST, ASIA, GWST, LALS, PAX, or RELS 1102; COM 1100; *FL 1002 (FL denotes any Foreign Language); PHIL 2200; or POLS 2401</td>
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<thead>
<tr>
<th>AREA C: Humanities/Fine Arts</th>
<th>HRS</th>
<th>GR</th>
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</thead>
<tbody>
<tr>
<td>ENGL 2110, 2111, 2112, 2120, 2121, 2122, 2130, 2131, 2132, or 2300</td>
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<thead>
<tr>
<th>AREA D: Science, Math, and Technology</th>
<th>HRS</th>
<th>GR</th>
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<tbody>
<tr>
<td>MATH 1190a Calculus I (4 hours)</td>
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<tr>
<td>or MATH 2202 Calculus II (4 hours)</td>
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<tr>
<td>CHEM 1211/L General Chemistry I (3/1 hours)</td>
<td></td>
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<tr>
<td>CHEM 1212/L General Chemistry II (3/1 hours)</td>
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<tr>
<th>AREA E: Social Sciences</th>
<th>HRS</th>
<th>GR</th>
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<tbody>
<tr>
<td>POLS 1101 American Government (3 hrs)</td>
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<tr>
<td>HIST 1100, 1111, or 1112 (3 hours)</td>
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<tr>
<td>HIST 2111 U.S. History to 1877 or HIST 2112 U.S. History since 1877</td>
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<tr>
<td>Choose one: ANTH 1102, CRJU 1101, GEOG 1101, PSYC 1101, SOCI 1101, STS 1101, OR ECON 2100*</td>
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<tr>
<td>WELL 1000 (formally HPS 1000 Fitness for Living) (3 hrs)</td>
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| FREE ELECTIVES (12 hrs) | | |
|------------------------| | |
| KSU First Year Seminar (3 hrs) or Learning Community | | |

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*Area B1 and E4 in General Education have made some changes. Please consult DegreeWorks and your advisor if you have questions.**This track is designed to prepare students for a variety of cytogenetic laboratory opportunities, from diagnostic and basic research to graduate studies in molecular cytogenetics. This training program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Students who complete the track are eligible to sit for national certification as a cytogenetic specialist. Students are encouraged to meet with the program director.

** A maximum of 8 hours of BIOL 3110, 4400, 4402, and/or BIOL 4450 can be used in the Biology electives. Credit for BIOL 3317 and 3396 can be applied to free electives only.
Kennesaw State University | Depts. of EEOB & MCB | Cytogenetics Track

[ ] Pre-requisite courses, as well as all courses required in the BIO major, all require a grade of C or higher.

### Upper Division Major Requirements - Prereqs

- **MATH 1190** or **MATH 2202**
  - [MATH 1112, 1113, or Math Placement Test\(^a\)]
- **CHEM 1211/1211L**
  - [pre-req or co-req: MATH 1112, MATH 1113, or MATH 1190]
- **CHEM 1212/1212L**
  - [CHEM 1211/1211L]
- **Biol 1107/1107L**
  - [pre-req or co-req CHEM 1211/1211L]
- **Biol 1108/1108L**
  - [Biol 1107/1107L and CHEM 1211/1211L]
- **Phys 1111/L or 2211/L**
- **CHEM 3361/3361L**
  - [CHEM 1212/1212L]
- **CHEM 3362/3362L**
  - [CHEM 3361/3361L]
- **STAT 3125**
  - [Biol 1107 or CHEM 1212 or instructor permission]
- **Biol 3300/L Genetics**
  - [CHEM 1211/1211L and BIOL 1107/L]
- **Biol 3370/L Ecology**
  - [BIOL 1108/L, STAT 3125, or instructor permission]
- **Biol 3410 Cell Biology**
  - [BIOL 3300/L and 1108/L]
- **Biol 4310 Seminar**
  - [BIOL 3410]

### Cytogenetics Required Course Prereqs

- **Biol 3327 Medical Genetics**
  - [BIOL 3300/L]
- **Biol 4300 Chromosome Prep and Analysis**
  - [co-req of BIOL 3327 AND pre-req of BIOL 3300/L]
- **Biol 4310 Cytogenetics Practicum**
  - [C or better in BIOL 3327 and 4300]

### Cytogenetic Elective Options (All options are not listed; these are just some)

- **Biol 3301K Intro to Biotechnology**
  - [BIOL 1108/L and 3300/L]
- **Biol 3320K Plant Morphology**
  - [BIOL 1107/L and 1108/L]
- **Biol 4350K Comparative Vertebrate Anatomy**
  - [BIOL 1107/L and PHYS 1111 or 2211]
- **Biol 4420K Plant Physiology**
  - [BIOL 1107/L, 1108/L, and CHEM 3361]
- **Biol 4431/L Human Physiology**
  - [BIOL 1108/L, CHEM 1212/L]
- **Biol 3338K Histology (4 hrs)**
  - [BIOL 1107/L and 1108/L]
- **Biol 3340/L Microbiology (3/1 hrs)**
  - [BIOL 1107/L and 1108/L]
- **Biol 4465 Immunology**
  - [BIOL 3300/L (and BIOL 3340 recommended)]
- **Biol 3110 Directed Methods (1-3 hrs)**
  - [BIOL 1108/L and instructor permission]
- **Biol 3310K Invertebrate Zoology (4 hrs)**
  - [BIOL 1108/L and CHEM 1212/1212L]
- **Biol 3315K Vertebrate Zoology (4 hrs)**
  - [BIOL 1107/L and 1108/L]
- **Biol 3327K Medical Genetics** (4 hrs)
  - [BIOL 3300/L or instructor permission]
- **Biol 3371K Freshwater Ecology (4 hrs)**
  - [BIOL 1107/L and 1108/L]
- **Biol 3372K Aquatic Biodiversity (4 hrs)**
  - [BIOL 3370/L or instructor permission]
- **Biol 3373K Methods in Aquatic (4 hrs)**
  - [BIOL 1107/L and 1108/L]
- **Biol 3375K Behavioral Biology (4 hrs)**
  - [BIOL 1107/L and 1108/L]
- **Biol 3390K Developmental Biology (4 hrs)**
  - [BIOL 3300/L]
- **Biol 3398 Internship**
  - [Approval of major area committee and Dept Chair]
- **Biol 4200K Industrial Microbiology**
  - [BIOL 3340]
- **Biol 4400 Directed Study (1-4 hrs)**
  - [Instructor, major area committee, and Dept Chair approval]
- **Biol 4460K Medical Microbiology (4 hrs)**
  - [BIOL 3340]
- **Biol 4475 Virology (3 hrs)**
  - [BIOL 3300/L (and BIOL 3340 recommended)]
- **Biol 4486 Bioethics (3 hrs)**
  - [BIOL 3300/L and 9 hours of upper level Bio/Btech/or Biochem]
- **Biol 4490 Special Topics (1-4 hrs)**
  - [Varies, See Schedule or Advisor]

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\(^a\) New students are required to take the online Math Advisement Placement Test (MAPT) available at http://placement.kennesaw.edu. If MATH 1190 is first MATH class at KSU, it will be used in Area A only and the Area D MATH must be MATH 2202. Otherwise, MATH 1190 must be the Area D MATH.

See catalog.kennesaw.edu for graduation requirements, general education details, additional pre-requisite options, course descriptions, and degree comments. If you have questions about the Biology major, please contact your advisor. Also note that students are initially advised in the College of Science & Mathematics Advising Center, located in Science 204.

"DegreeWorks" on OwlExpress is a wonderful tool to track where you are in your degree. Please check it constantly. However, it isn't always accurate for every situation, so please see your advisor regularly.

NOTES