### CURRICULUM GUIDE
Computer Science, B.S. (Bioinformatics Option)  
2012-2013

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Email Contact: ka-wing.wong@eku.edu

The schedule below is an EXAMPLE of how you can arrange your class schedule.  
Please consult your advisor for specific changes that may need to be made.

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
<td></td>
</tr>
<tr>
<td>CSC 185</td>
<td>3</td>
</tr>
<tr>
<td>CSC 190</td>
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</tr>
<tr>
<td>BIO 111 or 112 (fulfills Gen. Ed. 4A)</td>
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<tr>
<td>CHE 111 (fulfills Gen. Ed. 4B)</td>
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</tr>
<tr>
<td>CHE 111L</td>
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<tr>
<td>ASO 100</td>
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<td><strong>TOTAL</strong></td>
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<tr>
<td><strong>Sophomore Year</strong></td>
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<tr>
<td>CSC 310</td>
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<tr>
<td>STA 270</td>
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<tr>
<td>BIO 331</td>
<td>3</td>
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<tr>
<td>Gen Ed. 1B (ENG 102)</td>
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<tr>
<td>Wellness</td>
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<td><strong>TOTAL</strong></td>
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<tr>
<td><strong>Junior Year</strong></td>
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<tr>
<td>† CSC Elective (ACCT)</td>
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<td>BIO 511</td>
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<td>CHE 361</td>
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<tr>
<td>CHE 361L</td>
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<tr>
<td>Gen. Ed. 3A (Arts) or 3A/B (Integrated)</td>
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<tr>
<td>Gen. Ed. 5A (History)</td>
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<td><strong>TOTAL</strong></td>
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<tr>
<td><strong>Senior Year</strong></td>
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<tr>
<td>† CSC 544</td>
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<tr>
<td>BIO 533</td>
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<tr>
<td>Gen. Ed. 3B (Humanities) or 3A/B (Integrated)</td>
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<tr>
<td>Gen. Ed. 6 (Diversity)</td>
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<td><strong>TOTAL</strong></td>
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<tr>
<td>† CSC Elective</td>
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<tr>
<td>BIO 598</td>
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<tr>
<td>CHE 431 (spring only) or 430 (fall only)</td>
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<td>CHE 432</td>
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<tr>
<td>Gen. Ed. 6 (Diversity)</td>
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<tr>
<td><strong>TOTAL</strong></td>
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### Course Requirements

#### Core Course Requirements

- CSC 185: Intro to Computer Concepts
- CSC 190: Object-Oriented Programming I
- CSC 191: Object-Oriented Programming II
- CSC 195: Intro to Data Structures
- CSC 310: Data Structure
- CSC 340: Ethics & Software Engineering
- CSC 345: Theory of Database Systems
- CSC 350: Principles of Prog. Languages
- CSC 370: Computer Architecture
- CSC 390: Adv. Prog. Techniques with ____
- CSC 400: Operating Systems
- CSC 425: Compiler Construction
- CSC 440: Intro. to Software Engineering
- CSC 460: Comp. Network & System Admin.
- CSC 490: Seminar in ____
- CSC 491: Console Game Design
- CSC 520: Multimedia Sys. & Forensics
- CSC 530: Database Admin & Security
- CSC 545: Theory of Database Systems
- CSC 546: Artificial Intelligence
- CSC 550: Graphics Programming

#### Bioinformatics Option Requirements

- † Select THREE (3) courses from the following:
- CSC 320: Intro. To Algorithms
- CSC 440: Applied Software Engineering
- CSC 520: Multimedia System & Forensics
- CSC 544: Database Admin & Security
- CSC 545: Theory of Database Systems

- † Plus TWO (2) courses from the following:
- CSC 300: Intro. To Numerical Methods
- CSC 315: 3D Modeling
- CSC 316: 3D Game Engine Design
- CSC 320: Intro. To Algorithms
- CSC 350: Principles of Prog. Languages
- CSC 370: Computer Architecture
- CSC 390: Adv. Prog. Techniques with ____
- CSC 400: Operating Systems
- CSC 425: Compiler Construction
- CSC 440: Intro. to Software Engineering
- CSC 460: Comp. Network & System Admin.
- CSC 490: Seminar in ____
- CSC 491: Console Game Design
- CSC 520: Multimedia Sys. & Forensics
- CSC 530: Database Admin & Security
- CSC 545: Theory of Database Systems
- CSC 546: Artificial Intelligence
- CSC 550: Graphics Programming

#### Bioinformatics Option Supporting Course Requirements

- BIO 111: Cell and Molecular Biology
- BIO 112: Ecology and Evolution
- BIO 315: Genetics
- BI 331: Cell Biology
- BIO 348: Animal Physiology
- BIO 598: Special Problems (minimum of 3 hrs.)
- CHE 111: General Chemistry I
- CHE 111L: General Chemistry Lab I
- CHE 112: General Chemistry II
- CHE 112L: General Chemistry Lab II
- CHE 361: Organic Chemistry I
- CHE 361L: Organic Chemistry Lab I
- CHE 362: Organic Chemistry II
- CHE 362L: Organic Chemistry Lab II
- CHE 430: Biochemistry of Macromolecules
- CHE 431: Metabolic Biochemistry
- CHE 432: Biochemistry Laboratory
- MAT 124: Calculus I
- MAT 124H: Honors Calculus I
- STA 270: Applied Statistics I
- STA 320: Applied Statistics II

*Bracketed items must be taken concurrently.*

Upper division courses (All students are required to have a minimum of 42 hrs. upper division courses distributed throughout Major/Supporting/Gen Ed/Free Electives categories).

All baccalaureate degree seeking students who enter the University are required to successfully complete one writing intensive course following completion of the ENG 102, ENG 105, or HON 102/103. Writing intensive courses are designated with the suffix “W” following the course prefix and number (e.g. HUM 300W).

Applied Critical & Creative Thinking (ACCT) Requirement: Computer Science majors will fulfill ACCT with CSC 349, 440, 491, 549, or 495 with a program-approved topic. (Credit hours are incorporated into program requirements.)

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