Fresno High School
Syllabus
IB Computer Science HL (2 Year Course)
2017-2019

Teacher: Mr. Crew
Room: S-62
Phone: 457-2780 to leave a message
Website: www.crewscience.weebly.com
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Textbooks: Core Computer Science: For the IB Diploma Program (2015)

This syllabus is subject to change.

Course Description:
The International Baccalaureate Diploma Program for Computer Science HL is a rigorous pre-university course of study that meets the needs of motivated high school students and leads to the external IB examination. Students will study the Computer Science core plus one additional option topic over a two-year period, except for some seniors taking this class as an elective course who will not be testing. All Students will take the IB Computer Science HL Exam in the spring of 2019, except seniors who are taking the course as elective credit.

IB Computer Science Core:
- **Topic 1:** System Fundamentals
- **Topic 2:** Computer Organization
- **Topic 3:** Networks
- **Topic 4:** Computational thinking, problem solving, and programming
- **Topic 5:** Abstract data structures
- **Topic 6:** Resource management
- **Topic 7:** Control

**Option C:** Web Science

Grading Policy:
Grades are reported eight (8) times per year. In addition to the traditional quarter and semester grade reports, mid quarter progress reports are also distributed. The grades issued at the end of each semester become a permanent part of your transcript. All other grades are progress reports. Parents and Students may access Atlas 24 hours a day to check grades and attendance issues. Please refer to the student handbook for Atlas Instructions.

Grades will be calculated using the following weighted-point system:

<table>
<thead>
<tr>
<th>Component</th>
<th>% of Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td></td>
</tr>
<tr>
<td>Tests/Quizzes</td>
<td>40%</td>
</tr>
<tr>
<td>Labs/Projects/Notebooks</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Total Grade:**
A(90-100%) B(80-89.9%) C(70-79.9%) D(60-69.9%) F(59.9% or less)
Your IB score will be based on your Internal Assessment (what we do) and on a series of three tests administered in the spring. Your IB score is separate from the grade that you will earn in the class.

**Student Materials:**
YOU!!! are responsible for being prepared for class. Please have all materials needed for the day. Textbooks are your responsibility. Return them to the library in good condition at the end of the year or when you check out of class. If you fail to return your textbook in good condition, you will be charged for a replacement textbook.

**Plagiarism:**
Academic Integrity is very important to IB students and staff. I expect each student to turn in their own work. Work that has been copied from another source and not properly cited, will receive a grade of 0.

**Attendance Policy:**
Student attendance remains the number one factor affecting the overall achievement of students. Because teaching students the discipline that they need in order to survive in the business world is one of our main jobs, students must understand early in their high school career the consequences for poor attendance. In fact, good attendance is the number one issue that the private sector identifies as making a good employee. Excessive absences will have consequences. Attendance records will begin the 1st day of enrollment and are cumulative, despite program changes and transfer from one school to another within the district.

Students will be required to clear absences by phone or note on the day they return to school. Notes must be taken to the attendance office before a student may return to a missed class. If a student does not bring a note, the parent may call to excuse the absence prior to the beginning of school that day.

**Tardy Policy:**
Students are expected to be in class promptly, tardy students must come to with a pass.

**All school rules are in effect at all times including:**
Dress Code, Zero Tolerance, Sexual and Non-Sexual Harassment, Electronic Devices, Internet Use Policy, etc.

**Labs/Projects:**
Lab reports and projects will be assigned with a specific due date. Lab reports and projects MUST be typed to receive credit. Late labs or projects will be reduced by 10% a day for a maximum penalty of 50%. Lab reports or projects will not be accepted 7 days after due date.

**Make-Up Work:**
Assignments - Must be made up within one week of absence or receive a score of 0
Labs/Projects - Some labs can be made up by arrangement with Mr. Crew. In the event a lab cannot be made up; students may do an alternate assignment. Please Meet with Mr. Crew for details. Students are limited to one alternate assignment per quarter.
Tests/Quizzes - Must be made up within one week of absence or receive a score of 0.

**Late Work:**
All work is to be turned in on time. Late assignments will be docked 25% a day. Labs/Projects will be docked 10% per day for a maximum of 50% and will not be accepted 7 days after due date.

**Handbooks:**
See Student Handbook for information and school policies.

**Full Diploma Requirements:**

To Be a Full Diploma candidate a student must:

- Choose one subject from each of the six DP areas (Computer Science can replace a fine art)
- Choose **at least** 3 HL subjects, but no more than 4.
- Complete ALL assessments for that subject.
- Complete the Extended Essay.
- Complete CAS.
- Complete ToK

To Receive the Full Diploma a student must:

- Receive a combined score of **24** points.
- Not receive a 1 in any HL Subject
- Complete **ALL** assessments and exams.
- Receive a D or higher on EE and ToK.

**Web Science Time-line for Two Year HL Computer Science Course:**
Timings are based on a 2-year HL Course taught in two semesters per year with the hours divided in the following way. The last semester has been kept down due to revision and the exams.

In the following suggested time-line:

1. Topics in the guide do not have detailed point-by-point timings (time for differentiation or review of difficult topics).
2. Topics 4.1 and 4.2 are taught through the other topics as threads (they are unifying principles)
3. The Option (C—Web science) is integrated into each unit with increasing depth over the course and well as integration of Case Study requirement for HL courses.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Core + SL Option</th>
<th>HL Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>SL/HL core: 1.2 System design basics 1.2.1–1.2.3, 2.1 Computer organization 2.1.1–2.1.5, 4.3 Intro to programming 4.3.1–4.3.4.</td>
<td>HL ext: C.5.1–C.5.2 Analysing the web, C.6.1–C.6.5 The intelligent web</td>
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<tr>
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<td>SL/HL option core: C.1 (all) Building the web (all), C.2.1–C.2.5 Searching the web</td>
<td>HL option ext: 6.1.1–6.1.9 Resource management</td>
</tr>
<tr>
<td></td>
<td>Integrated topics 4.1 General principles (thinking procedurally and abstractly), 4.2 Connecting computational thinking</td>
<td></td>
</tr>
<tr>
<td>Semester 2</td>
<td>SL/HL core: 1.2 System design basics 1.2.4–1.2.11, 1.1 Systems in organizations 1.1.1–1.1.10, 2.1 Computer organization 2.1.6–2.1.13, 4.3 Intro to programming 4.3.10–4.3.13</td>
<td>HL ext: 5.1.101505.1.20 Abstract data structures</td>
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<tr>
<td></td>
<td>SL/HL option core: C.3 Distributed approaches to the web (all), 4.1 General principles (thinking logically, ahead and concurrently), 4.2 Connecting computational thinking</td>
<td>HL ext: C.6.6–C.6.7 The intelligent web</td>
</tr>
<tr>
<td></td>
<td>Integrated topics</td>
<td>Case study Introduction to case study</td>
</tr>
<tr>
<td></td>
<td>Commencement of internal assessment, Commencement of group 4 project</td>
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</table>

<table>
<thead>
<tr>
<th>Year 2</th>
<th>Core + SL option</th>
<th>HL Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>SL/HL core: 1.1 Systems in organizations 1.1.11–1.1.14, 1.2 System design basics 1.2.12–1.2.16</td>
<td>HL ext: 7.1.1–7.1.7 Centralized control</td>
</tr>
<tr>
<td></td>
<td>SL/HL option core: C.2.6–C.2.12 Searching the web, C.4.1–C.4.5 The evolving web</td>
<td>HL ext: C.5.3–C.5.6 Analysing the web</td>
</tr>
<tr>
<td></td>
<td>Completion of internal assessment, Completion of group 4 project</td>
<td>Case study Research linked to case study, analysis of information</td>
</tr>
<tr>
<td>Semester 2</td>
<td>SL/HL core: 3.1 Networks 3.1.1 – 3.1.16</td>
<td>HL ext: 7.1.8–7.1.9 Distributed systems</td>
</tr>
<tr>
<td></td>
<td>SL/HL option core: C.4.6–C.4.8 The evolving web</td>
<td>HL ext: C.6.8–C.6.10 The intelligent web</td>
</tr>
<tr>
<td></td>
<td>Submission of internal assessment</td>
<td>Case study Synthesis and evaluation of research linked to case study</td>
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Parents:

Please take the time to go over this syllabus with your child. It is important that my students understand how they will be evaluated and what expectations I have of them. Remind your child that school is a team effort between themselves, their parents and their teacher. I know that working together we will have a very positive year. If you have any questions about any material that will be covered in this course, please call or E-mail me at the school.

Thank You,
Ryan Crew
FHS Science

Please complete and return to Mr. Crew by the end of the week.

Parent/Student Acknowledgement and Acceptance of Syllabus

I ____________________ have read and understand this syllabus for IB Computer Science HL (2 Year Course, except for seniors taking this class as an elective as a 1 year course).

____________________________________  ______________________
Student Signature                           Date

____________________________________  ______________________
Parent Signature                            Date