

SEDC 73600: Curriculum Design For Computer Science

Department Of Curriculum & Teaching / Computer Science Education

Hunter College, CUNY

Fall Semester 2021

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Office Hours: TBA And By Appointment

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Required Texts:

There Is No Required Text For This Class. Readings Will Be Assigned From A Variety Of Sources Week To Week And Are Outlined In The Syllabus. Student's curricular assignments are expected to be mapped to the New York State standards.

Course Description:

This Course Will Prepare Candidates To Develop Materials Ranging From Individual Lessons And Units To Full Courses To Sequences Of Courses In Alignment With Emerging Local, State, And National Standards To Educate Students In The Field Of Computer Science.

Attention Will Be Given To Creating Materials Appropriate For A Diverse Population Of Learners.

Candidates Will Also Be Prepared To Develop Computer Science Educational Materials That Relate To Other Fields Of Study Thus Giving All Students A Meaningful Educational Experience Regardless Of Their Ultimate Career Choice.

Teacher-Candidates Will Produce A Complete Curriculum For A New Class Designed For A School Which The Candidate Is Familiar. Teacher-Candidates Will Create A Sample Unit And Individual Lesson Plan For This Curriculum.

Students Enrolled In This Class Will Also Be Required To Complete 50 Hours Of Fieldwork In New York City Schools Under The Supervision Of A Hunter College Faculty Member And A Certified New York State Teacher In Schools Selected By The College.

Expected Learning Outcomes

By The End Of This Course, Students Will Be Able To:

- Design Units, Courses, And Sequences Of Courses In Computer Science Appropriate For A Diverse Population Of Students.
- Design Units, Courses, And Sequences Of Courses Aligned To Emerging Local, State, And Professional Standards In Computer Science Education.
- Employ Current Technologies And Tools To Support The Development And Deployment Of Designed Materials.
- Adapt, Customize, And Implement Existing And New Curricular Materials In Computer Science Education.

Methods Of Evaluation

- Assignments (Exclusive Of The Term Curriculum Project) (25%)
- Developed Curriculum And Class Presentation (55%)
- Class Participation (Including Asynchronous Discussion & Group Work) (20%)
- Field Work: Must Complete 50 Hours To Earn A Passing Grade In This Class
 - Most fieldwork will consist of observing other teachers, being observed by fellow candidates & having post observation discussions.
 - Some of the fieldwork must be in the K-5 space, we are working on providing opportunities to work with K-5 teachers, as all candidates are currently in 6-12.

Standards

Week 7 is dedicated to studying the New York State Computer Science and Digital Fluency Learning Standards. This is also true to a lesser extend for week 3 when the class surveys popular pre-packaged CS Curricula.

Area	Standard
CT	1,3,4,5,6,7,9
DL	1,2,3,4,5,6,7
CY	1,3
IC	1,2,3,4,6,7

Course Content And Organization:

- Week 1 - Introductions, What's In A Curriculum, How Are Courses Designed
 - Where do CS courses come from?
 - What considerations are important when designing CS curricula?
 - Async discussion:
 - * Sharing local school curriculum decisions.
- Week 2 - Survey Of Existing Cs Curricula (APCSA, APCSP, Others) And Fieldwork Overview

- Async pre-work & discussion:
 - * Reading: Official APCSP Curricula
- Fieldwork overview & discussion.
- Presentation of an APCS A curricula.
- Assignment:
 - * Compare and contrast local intro level class with a (different) APCSP curriculum.
- Week 3 - Case Study Of A Locally Designed Class And Fieldwork Staging
 - Presentation of the development of Stuyvesant High School's Introduction to Computer Science course.
 - Costs and Benefits of creating your own curriculum.
 - Async discussion:
 - * Redesign a lesson or project for a CS class you currently teach.
 - Assignment:
 - * What CS class would you like to develop?
- Week 4 - Forming Curriculum Groups, Fieldwork Observation planning
 - Async discussion:
 - * Start to fill out the fieldwork pairing grid: https://docs.google.com/spreadsheets/d/1-PMLanyRCiPXh0XkTkidjq4Tpoz8PNJv7vY66qN5___g/edit#gid=0
 - Assignment:
 - * Begin to create your unit plan proposal.
- Week 5 - Evaluating Programming Languages for Education
 - CT 1,3,4,5,6,7,9
- Week 6 - Different Approaches To Curriculum Development
 - Slideshare On Curriculum Approaches: [Http://Www.Slideshare.Net/Iansagabaen28/Curriculum-Approaches-41755984](http://Www.Slideshare.Net/Iansagabaen28/Curriculum-Approaches-41755984)
- Week 7 - Standards in Computer Science Education
 - NY State Standards: <http://www.nysed.gov/common/nysed/files/programs/curriculum-instruction/draft-nys-k-12-computer-science-digital-fluency-standards.pdf>
 - Massachusetts:
- Week 8 - Developing Assignments
 - Assignment: Develop An In Class And An Out Of Class Assignment For Your Curriculum
 - Fieldwork Sharing
- Week 9 - Unit Development Workshop
 - Fieldwork Sharing
- Week 10 - Using Technical Tools And Integrating Them Into Classes
 - Assignment: Continue Developing Curriculum Proposal
 - Fieldwork Sharing
 - DL 1,2,3,4,5,6,7
 - CY 1,3
- Week 11 - Including Ancillary Topics And Techniques Social, Societal, And Ethical Issues Cross Curricular Topics
 - Assignment: Develop A Lesson Plan For A Class In Your Curriculum Highlighting How It Incorporates These Topics

- Fieldwork Sharing
- IC 1,2,3,4,6,7
- Week 12 - Curriculum Presentations
 - Fieldwork Sharing
- Week 13 - Curriculum Presentations
 - Fieldwork Sharing
- Week 14 - Curriculum Presentations
 - Fieldwork Sharing
- Week 15 - Curriculum Presentations
 - Fieldwork Sharing

Academic Integrity Statement

“Hunter College Regards Acts Of Academic Dishonesty (E.G., Plagiarism, Cheating On Examinations, Obtaining Unfair Advantage, And Falsification Of Records And Official Documents) As Serious Offenses Against The Values Of Intellectual Honesty. The College Is Committed To Enforcing The Cuny Policy On Academic Integrity And Will Pursue Cases Of Academic Dishonesty According To The Hunter College Academic Integrity Procedures.”

Ada Statement**

“In Compliance With The Ada And With Section 504 Of The Rehabilitation Act, Hunter College Is Committed To Ensuring Educational Access And Accommodations For All Its Registered Students. Hunter College’s Students With Disabilities And Medical Conditions Are Encouraged To Register With The Office Of Accessibility For Assistance And Accommodation. For Information And Appointment Contact The Office Of Accessibility Located In Room E1214 Or Call (212) 772-4857 /Or Tty (212) 650-3230.”

Hunter Policy On Sexual Misconduct**

"In Compliance With The Cuny Policy On Sexual Misconduct, Hunter College Reaffirms The Prohibition Of Any Sexual Misconduct, Which Includes Sexual Violence, Sexual Harassment, And Gender-Based Harassment Retaliation Against Students, Employees, Or Visitors, As Well As Certain Intimate Relationships. Students Who Have Experienced Any Form Of Sexual Violence On Or Off Campus (Including Cuny-Sponsored Trips And Events) Are Entitled To The Rights Outlined In The Bill Of Rights For Hunter College.

A. Sexual Violence: Students Are Strongly Encouraged To Immediately Report The Incident By Calling 911, Contacting Nypd Special Victims Division Hotline (646-610-7272) Or Their Local Police

Precinct, Or Contacting The College'S Public Safety Office (212-772-4444).

B. All Other Forms Of Sexual Misconduct: Students Are Also Encouraged To Contact The College'S Title Ix Campus Coordinator, Dean John Rose (Jtrose@Hunter.Cuny.Edu Or 212-650-3262) Or Colleen Barry (Colleen.Barry@Hunter.Cuny.Edu Or 212-772-4534) And Seek Complimentary Services Through The Counseling And Wellness Services Office, Hunter East 1123.

Cuny Policy On Sexual Misconduct Link: [Http://Www.Cuny.Edu/About/Administration/Offices/La/Policy-on-Sexual-misconduct-12-1-14-With-Links.Pdf](http://www.cuny.edu/about/administration/offices/La/Policy-on-Sexual-misconduct-12-1-14-With-Links.pdf)

Syllabus Change Policy:**

Except For Changes That Substantially Affect Implementation Of The Evaluation (Grading) Statement, This Syllabus Is A Guide For The Course And Is Subject To Change With Advance Notice

Students Will Be Informed Of Any Changes To The Class Syllabus Via Direct Email.