



Massachusetts ECS Partnership

Frequently Asked Questions (FAQ)

Massachusetts Exploring Computer Science Partnership (MECSP) – <http://mecsp.org>

Curriculum / ECS in the Schedule

Q1: Where can I review the entire curriculum? Is there a required textbook?

A: The 300+ page curriculum can be found here: <http://www.exploringcs.org/curriculum>

There is no required textbook for the course.

Q2: Does this have to be a high-school level course (grades 9-12)? Can it be offered at a middle school level?

A. ECS is designed as a high school course. If a school wishes to offer it below 9th grade, they would not be eligible as an MECSP partner school.

Q3: Are there any prerequisites for students?

A: No previous computer science course is required to take this course; it is meant to be introductory. A previous algebra course is recommended.

Q4: Must ECS be offered over a full school year?

A: The curriculum is designed as full year. However, some schools may be able to schedule Units 1-4 within a half year. The curriculum consists of 6 units, ranging from 19 to 33 days each. Each lesson assumes a 55-minute class period. In schools where class periods are shorter or longer, adjustments such as combining lessons or assigning parts of lessons as homework can be made. In order to offer the minimally required Units 1-4, approximately 95 class days are needed (Units 1-4 are slated for 19, 21, 25, and 30 days, respectively).

Q5: Can ECS be offered over two semesters, so different students have the option to take part 1 or part 2?

A. No. The later units (5-6) depend on the foundational concepts in Units 1-4, and all units are designed to build upon each other in sequence.

Q6: Can the course be team-taught or shared among two or more teachers each taking different units?

A. Yes, as long as all teachers have participated in ECS Professional Development.

Q7: Can the units be taught in a different order?

A: No. The first four units of the course provide the necessary foundational concepts . . . it is necessary to teach the full four units in sequence before launching into extension topics or deviating from the curriculum. See guidelines here: <http://www.exploringcs.org/curriculum>

Q8: To what standards does ECS map?

A: ECS has been mapped to Common Core standards, Computer Science Teachers Association standards, and ISTE/NETS standards, as well as standards in California and Illinois. Standards mappings are available here: http://pact.sri.com/?page_id=1096.

Q9: What kinds of student assessments are used?

A: SRI Education has developed assessments and scoring rubrics for Units 1-4, and cumulative Units 1-4. Directions for downloading the assessments can be found here: <http://pact.sri.com/ecs-assessments.html> In addition, the community of teachers are encouraged to share assessments they have developed and

used via the online community <https://csforallteachers.org>. No specific assessments are listed in the lesson plans at this time, as they may vary by environment, grading policies, etc.

Q10: Does ECS substitute for a computer literacy or computer applications course?

A. Maybe. Some schools may choose to update their computer literacy or applications courses with the ECS course.

Q11: Does ECS prepare students for taking Advanced Placement CS courses (Computer Science Principles or AP-CS-A Java)?

A. ECS is an introductory course and is appropriate preparation for “Computer Science Principles” (AP-CSP course) or advanced computer science courses, but not necessarily AP-Computer Science-A (Java programming).

Q12: Does ECS prepare students for the Science, Technology, and Engineering MCAS exam?

A. No, the ECS content is not mapped to those Massachusetts standards.

Hardware & Software Requirements

Q13: What kind of equipment and software is needed to offer the course?

- Computers (Macs or PCs enough for a 2:1 student-computer ratio)
- A networked system for downloading software
- Web browser
- Scratch programming language (downloaded for free)
- (Having Adobe Photoshop and Flash allow extension to the web unit.)

The robotics unit lesson plans feature LEGO Mindstorms robots to be shared among several students; however, other robot platforms may be used to teach the same concepts. Alternatives to the robotics unit are possible (e.g. game design, media computation, or developing mobile apps), following guidelines: <http://www.exploringcs.org/wp-content/uploads/2010/08/Guidelines-for-ECS-Fidelity.pdf>. Many ECS lessons teach computing concepts without using computers.

Teacher Eligibility and Professional Development

Q14: Which teachers are eligible to teach this course in Massachusetts?

A: Massachusetts adopted standards for Digital Literacy and Computer Science in June 2016 (<http://www.doe.mass.edu/frameworks/dlcs.pdf>) but has not yet finalized licensure or another credential for teachers of computer science. Any teacher qualified to teach a high school course in a Massachusetts school district and who participates in ECS professional development is eligible to teach ECS. Teachers with background in computer science, math, science, or IT are logical choices, but ECS has been taught by ESL, art, and other teachers.

Q15: Can a teacher with no technology or computer science background or experience prepare and teach ECS?

A: Yes, given they participate in all professional development, which includes an ongoing community for support and continued preparation.

Q16: Is graduate credit offered for the PD?

A. Yes. Participating teachers may enroll in a 3-credit graduate course through UMass Boston at an additional cost. We also offer Professional Development Points.

Q17: How long is the professional development?

A. The entire professional development program totals *up to* 84 hours, as follows:

- Up to 2 hours online preparation (summer) (*subject to availability*)
- 5 days in-person workshop (summer)
- 4 one-day Saturday follow-up sessions (Sept., Nov., Feb., April)
- Up to 10 one-hour optional monthly online “hangouts”
- In-person follow-up workshop (around end of school year)
- Teachers are encouraged to deepen their practice at a second summer workshop

Q18: What is the compensation for teachers for PD, and when and how it is provided?

The NSF grant provides stipends of \$300 to teachers participating in ECS summer workshops. Stipends for school-year quarterly workshops are being sought. Qualifying teachers will be notified as those funds become available.

Q19: Is there funding for travel/mileage, parking, or overnight lodging if I live far from the summer workshop site?

A. Not at this time. Workshops are located in eastern and western Mass.

Q20: Can more than one teacher per school attend the PD? Can receive the stipend?

A. Yes, we encourage 2 teachers per school to attend, and both are eligible for the stipend if both will be teaching the course the following fall.

Q21: Must only the teacher designated to teach ECS attend the PD?

A. Teachers designated to teach ECS *or* planning to teach ECS in the future should attend the PD.

Q22: What happens if a teacher attends the PD and then can't teach the course?

A. The teacher would be paid for attending the summer PD. Our hope is the teacher would teach the course in the following year and be encouraged to continue PD the following year.

Q23: What additional leadership opportunities are available for teachers?

A. Interested teachers have the opportunity to become “apprentices” to facilitate ECS PD in Massachusetts and/or become part of the national ECS Facilitator team, to lead monthly online “hangouts,” Saturday sessions, or provide coaching with regional cohorts.

School Commitment

Q24: What must a school commit to in participating with MECSP?

A. Put the ECS course on the school schedule in the following fall (2017), listed as open to all students. Use the assigned course code (10012) when reporting enrollments to DESE. Select/assign a teacher to teach ECS. Agree to publicize the course, and support the teacher with recruiting efforts to ensure adequate enrollment.

Q25: What support will be available to the school to help recruit enough students to reach minimal enrollment to run the course?

A. MECSP can provide recruiting material samples to schools and offers webinars to teachers and guidance counselors to help recruit diverse students into ECS.

Q26: What other support and resources are available?

A. All ECS teachers become part of the online professional learning community that connects ECS and other CS teachers across the state and nation: <https://csforallteachers.org>. MECSP can also point schools to other resources or ideas.