**A/Y 19-20 EPS Curricular Advising Cheat Sheet**

Questions? Ask Chenoweth (moffatt@eps.harvard.edu)

**Requirements: 14 courses for primary; 11 courses for joint-allied; 5 courses for secondary; everyone attends 5 dept tutorials**

Students entering the concentration prior to 16-17 complete previous requirements. Students entering the concentration in 19-20 follow the new chemistry requirements

**For Primary**

**•**A minimum of six EPS courses with at least one course at the 50- or 100-level sampling all three sub-disciplines: Atmosphere(s) & Oceans; Earth History & Geobiology; and Geology, Geophysics & Planetary Science. Ordinarily, courses taken to fulfill chemistry, math or physics will not count toward fulfilling a breadth category.

**•**Of these six, two should be foundational courses from either EPS 10 or GENED 1018, 1085, 1094, 1098, 1137 or 1158, and all 50-level EPS courses. No more than one of these from EPS 10 or GENED 1018, 1085, 1094, 1098, 1137 or 1158 (ordinarily taken no later than the first semester of the junior year).

**•**Four additional courses in EPS, at least three of which must be numbered 99 or above. Examples: Acceptable: EPS 52, 99, 109, 134; Unacceptable: EPS 52, 56, 99, 109—instead either 52 or 56 would have to be moved to "other related courses" where it would still count for concentration credit, just no longer in the "four courses" requirement.

**For Joint-Allied**

A minimum of five EPS courses, two of which should be foundational courses from either EPS 10 or GENED 1018, 1085, 1094, 1098, 1137 or 1158, and all 50-level EPS courses. No more than one of these from EPS 10 or GENED 1018, 1085, 1094, 1098, 1137 or 1158 (ordinarily no later than the first semester of the junior year). Three additional EPS courses, one of which must be EPS 99 Senior Thesis Tutorial, at least two of which must be numbered 99 or above, and one of which must be EPS 99 senior thesis tutorial or its equivalent.

**For Primary & Joint-Allied**

**•**Physics (2-3 courses):

Physical Sciences 12a & 12b or Physics 15a, 15b, & 15c or Physics 15a & Phy Sci 12b or Applied Physics 50a & 50b. Physical Sciences 2 & 3 allowable by petition. NB: Strongly encourage students who take the physics 15 series to complete all three courses.

**•**Chemistry (2 courses) *new in 19-20*:

Physical Sciences 11 followed by Chemistry 17 (or higher) or EPS-ESE 133

If a student has taken Physical Sciences 1 before declaring EPS, it can be used in place of Physical Sciences 11.

NB: Physical Sciences 1 and Physical Sciences 11 cannot both be taken for credit.

**•**Math (2 courses)

Through or above Math 21a & 21b, Math 22a & 22b or Applied Math 22a & 22b.

**For Secondary**

Five EPS courses, two of which should be foundational courses from either EPS 10 or GENED 1018, 1085, 1094, 1098, 1137 or 1158, and all 50-level EPS courses. No more than one of these from EPS 10 or GENED 1018, 1085, 1094, 1098, 1137 or 1158 (ordinarily no later than the first semester of the junior year).

**For All Concentrators**

**•**All courses must be taken for a grade, and C-minus is normally the minimum acceptable grade.

**Thematic Plan of Study:** Primary and Joint-Allied students must discuss and develop individual thematic plans of study together with their concentration adviser. This ensures that the upper-level courses in EPS and related fields provide a coherent focus. The following lists may help focus these discussions, but students should have the option to suggest and develop their own themes outside these boundaries:

* Focus on Atmospheric and Ocean Science: 50, 101, 112, 129, 130, 131, 132, 133, 134, 135, 138, 139.
* Focus on Energy and Climate: EPS 109, 112, 130, 131, 132, 133, 134, 135, 139, 162.
* Focus on Environmental Geoscience: EPS 51, 109, 112, 130, 133, 135, 160, 162, 189, ES 164.
* Focus on Geobiology: EPS 53, 56, 107, 174, 182, 187, 189.
* Focus on Geochemistry: EPS 51, 53, 112, 130, 133, 135, 139, 141, 142, 145, 146, 187, 189.
* Focus on Geology: EPS 51, 52, 56, 112, 139, 142, 145, 146, 171, 174, 189.
* Focus on Planetary Sciences: EPS 51, 52, 112, 120, 142, 160, Astro 16, Astro 189.
* Focus on Solid Earth Geophysics: EPS 52, 55, 120, 142, 146, 162, 166.
* For preparation for advanced work in any sub-discipline: EPS 100, 112.

**Advanced Placement:** May allow students to complete higher-level courses, but a minimum of two physics, two chemistry, and two math courses must be completed to satisfy concentration requirements.

**Department Tutorial:** EPS hosts six department tutorials each year during which EPS faculty speak informally about their research. EPS concentrators are required to attend a minimum of five tutorials prior to graduation. Tutorial dates for 19-20 at 5:00 pm, Faculty Lounge: October 2, November 6, December 4, February 5, March 4, and April 1.

**Senior Thesis:** Required for joint concentrators, and optional for primary and secondary concentrators. For primary concentrators, a thesis is required for departmental (English) honors. Students interested in doing a thesis should begin discussions with potential thesis advisors no later than the end of their junior year. (The summer prior to their senior year is usually spent conducting thesis research.) Students must complete at least one term of EPS 99 which must be taken for a letter grade. A mid-year poster presentation and a final oral presentation of the thesis is required.

Pre-Med Cheat Sheet for EPS Concentrators A/Y 1-20

Courses Required for Admission to Most Medical Schools

• General or inorganic chemistry with lab (one year)

• Organic chemistry with lab (one year)

• General physics with lab (one year)

• Biology with lab (one year)

• English (one year)

Taken from https://ocs.fas.harvard.edu/premedical-health-careers-advising

**Harvard Courses That Satisfy Most Medical School Admissions Requirements**

**GENERAL OR INORGANIC CHEMISTRY WITH LAB (ONE YEAR):**

**Two** of the following courses. Preferably both should contain labs.

• Life Sciences 1a OR Life & Physical Sciences A OR Life Sciences 50a

• Physical Sciences 10 or Physical Sciences 1 or Physical Sciences 11 **EPS credit**

• Advanced inorganic, or physical chemistry. For example, Chemistry 40, Chemistry 60, or Chemistry 160 **EPS credit**

**ORGANIC CHEMISTRY WITH LAB (ONE YEAR):**

• Chem 17 & 27 OR Chem 20 & 30 OR ChemS 17 & Chem 27 ORChem S-20ab (Harvard Summer School) **EPS credit**

**BIOLOGY WITH LAB (ONE YEAR): Case by case for EPS credit**

**Two** of the following courses. Preferably both should contain labs. Most medical schools recommend that these courses cover the cellular and molecular aspects as well as the structure and function of living organ­isms.

• Life Sciences 1b • Life Sciences 2 • Life Sciences 50a/b • MCB 60 • MCB 68 • OEB 10 • HEB 1420

**BIOCHEMISTRY (ONE SEMESTER) : Case by case for EPS credit**

Options for students who need to meet a biochemistry requirement include the following:

Most medical schools who require biochemistry will accept a combination of Chem 17 and Chem 27 **EPS credit** as fully meeting both the organic and biochemistry requirements *OR* • MCB 63 *OR* • MCB 65 *OR*• BCMP 234 • *OR* • BIOS S-10 (Harvard Summer School) *OR* • Advanced courses such as Chemistry 170 or 171.

**PHYSICS WITH LAB (ONE YEAR):**

• Physical Sciences 2 & 3\* *OR* • Physical Sciences 12a & 12b *OR* • Physics 15a OR Physics 16 & Physics 50b *OR* • Applied Physics 50a & 50b **EPS credit** *OR* • Phys-S1a & 1b (Harvard Summer School)

\*by petition

**MATHEMATICS (ONE SEMESTER OF CALCULUS AND ONE SEMESTER OF STATISTICS)**

• Math Ma & Mb *OR* • Math 1a or Math 1b *OR* • Math 19a *OR* •Math 18 *OR* •Math21a or 21b *OR* •Applied Math 21a or 21b **EPS credit** *OR* • Life Sciences 50b *OR* •Any more advanced Math or Applied Math course

PLUS • Any statistics course (e.g. Stats Dept courses or Psychology 1900 or OEB 153 or Math 19b).

**ENGLISH (ONE YEAR):**

• One semester of the English requirement is met with Expos. Students who take two semesters of Expos have met the full requirement of two semesters of English. For many schools, the second semester can be met with English or Literature courses or with many of the Aesthetic and Interpretive Understanding and Culture and Belief courses.