

Statistics Concentration Requirements

For all tracks

1. Stat 110, Stat 111, and Stat 139.
2. *One additional Statistics course* numbered between 100 and 299 (inclusive). Stat 98 or CS 181 may also be used to fulfill this requirement.
3. *One multivariable calculus, differential equations, optimization, or real analysis course*: Math 18A, 19A, 21A, 22B, 23B, 23C, 25B, 55B, 112, 114, 116, or Applied Math 22B, 105, 121.
4. *One linear algebra course*: Math 18B/19B, 21B, 22A, 23A, 25A, 55A, 121, or Applied Math 22A, 120.
5. *One Computer Science course*: CS 32, 50, 51, or 61.
6. *One additional related course* (see list of related courses below).

Additional requirements specific to each track

General Track

1. *Three more additional Statistics courses* numbered between 100 and 299 (inclusive). Stat 98 and CS 181 may also be counted toward this requirement.
2. *One more additional related course* (see list of related courses below).

Data Science Track

1. CS/Stat 109A.
2. *One more additional Statistics course*, chosen from Stat 98, 108, 109B, 115, 117, 120, 131, 140, 141, 143, 149, 160, 171, 175, 184, 185, 186, 195, 210, 211, 212, 213, 220, 221, 230, 234, 244, 288.
3. *Two additional Computer Science courses*, chosen from CS 51, 61, 79, 105, 107, 108, 109B, 120, 121, 124, 125, 126, 134, 136, 143, 145, 161, 165, 171, 179, 181, 182, 187, 197, 205, 207, 222, 223, 224, 226R, 229BR, 229R, 242, 249R, 262, 263, 265, 271, 281, 282BR, 282R, 286, 287, 288.

Bioinformatics and Computational Biology (BCB) Track

1. Two of the courses Stat 115, 117, 171, and MCB 112.
2. Two Life Sciences courses: LS 1 (or LPS A or LS 50A), LS 1B (or LS 50B).

Quantitative Finance Track

1. Two of the courses Stat 123, 131, 170, 171, 212.
2. Two Economics courses: Either Econ 1010A or 1011A, and one of the courses Econ 980Z, 1723, or 1745.

Related Courses

Applied Computation 209A, 209B, 211, 215, 221, 295.

Applied Math 21A, 21B, 22B, 22A, 104, 105, 106, 107, 108, 111, 115, 120, 121, 126, 201, 202, 203, 205, 207, 216, 221, 222, 225, 226, 231.

Applied Physics 286.

Astronomy 100, 193.

Biostatistics 232, 233, 234, 235, 238, 244, 245, 249, 250, 251.

Computer Science 20, 32, 50, 51, 61, 79, 96, 105, 108, 109A, 109B, 120, 121, 124, 125, 126, 127, 134, 136, 143, 145, 161, 165, 171, 181, 182, 187, 197, 205, 207, 208, 222, 223, 224, 226R, 227R, 228, 229BR, 229R, 238, 242, 249R, 262, 265, 271, 281, 282BR, 282R, 286, 287R, 288.

Earth and Planetary Sciences 139, 168.

Economics 50, 980Z, 1011A, 1011B, 1030, 1034, 1036, 1042, 1051, 1052, 1057, 1078, 1080, 1123, 1126, 1152, 1460, 1820, 2030, 2057, 2070, 2110, 2120, 2140, 2142, 2144, 2146, 2150, 2355, 2723, 2725, 2728.

Engineering Sciences 155, 157, 201, 202, 203, 250.

Government 52, 1002, 1003, 1005, 1006, 1010, 1016, 1347, 1430, 2000, 2001, 2002, 2003, 2018, 2430.

Math 18, 19A, 19B, 21A, 21B, 22A, 22B, 23A, 23B, 23C, 25A, 25B, 55A, 55B, 101, 106, 110, 112, 113, 114, 115, 116, 119, 121, 122, 123, 124, 136, 155R, 212A, 212BR, 213, 259Y, 271, 278Y.

MCB 111, 112, 131, 198, 199.

Neuroscience 140.

OEB 152, 242.

Philosophy 150.

Physics 131, 81, 262.

Psychology 1019, 1950, 1952, 2030, 2080.

HGSE EDU A164.

MIT 6.036/6.390 (as a substitute for CS 181), 6.441, 6.867, 15.097, 15.501/15.516.

Statistics 91R (may be taken at most once for concentration credit; graded SAT/UNSAT), 98, any 100-level or 200-level Statistics courses.

Additional Notes

1. Stat 110 and 111 must be completed by the end of junior year. The graduate-level courses Stat 210, 211, and 244 can substitute for Stat 110, 111, and 139, respectively.
2. MIT 6.0001+6.0002 (if both of these half-courses are taken) can substitute for CS 50, and MIT 6.036/6.390 can substitute for CS 181.
3. Applied Computation 209A can substitute for CS/Stat 109A. Applied Computation 209B can substitute for CS/Stat 109B.
4. Stat 110, 111, and 139 must be taken letter-graded for concentration credit. One course other than Stat 110, 111, and 139 may be taken pass/fail or SAT/UNSAT and counted for concentration credit. Additionally, Stat 99R is graded SAT/UNSAT and does not use up the one pass/fail or SAT/UNSAT course allowed for concentration credit. Note that Stat 91R is graded SAT/UNSAT and, if taken for concentration credit, would be the one pass/fail or SAT/UNSAT course allowed for concentration credit.
5. Only one Statistics course numbered between 100 and 107 (inclusive) can be counted for concentration credit.

Additional Requirements for Honors Eligibility (except for Joint Concentrations)

1. *Two additional related courses.* For students writing a senior thesis, Stat 99R can count as one of the two additional courses for honors eligibility.
2. *Writing a senior thesis, or following the advanced course option.*
 - (i) *Senior thesis:* See https://statistics.fas.harvard.edu/files/statistics-2/files/senior_thesis_guidelines_2022.pdf?m=1660741502 for senior thesis guidelines. Thesis writers must have an adviser or co-adviser from the Statistics Department, unless approved otherwise by the Directors of Undergraduate Study or the Stat 99R instructor.
 - (ii) *Advanced course option:* Statistics coursework that includes a set of at least 7 letter-graded Statistics courses numbered between 110 and 299 (inclusive), with Stat 110 (or 210), Stat 111 (or 211), and Stat 139 (or 244) in this set. At least one of Stat 210, 211, 212, 213, 220, 230, or 244 must be in the set, and a GPA of at least 3.5 in the set is required.

Requirements for Joint Concentrations

1. *Course requirements:* Follow the course requirements for any of the tracks, except that if Statistics is the allied field rather than the primary field, then the "additional related courses" are not required.
2. *Senior thesis:* See https://statistics.fas.harvard.edu/files/statistics-2/files/senior_thesis_guidelines_2022.pdf?m=1660741502 for senior thesis guidelines. The senior thesis must strongly relate to both fields. Thesis writers must have an adviser, co-adviser, or secondary adviser from the Statistics Department, unless approved otherwise by the Directors of Undergraduate Study or the Stat 99R instructor.