# Statistical & Data Sciences Major Requirements

*(updated Spr21)*

**SDS core courses** (5.0 credits)
- DATA 102: Intro to Statistics
- DATA 106: Intro to Data Science
- DATA 201: Data Visualization [102 or 106]
- DATA 231: Applied Statistical Methods (W) [102]
- DATA 325: Applied Data Science [106 & 23x] (or CS 310)

**Mathematics** (2.5 credits)
- MATH 110: Applied Differential Calculus ^ [105/placement]
- MATH 115: Theory of Differential Calculus ^ [110]
- MATH 120: Applied Integral Calculus ^ [110]
- MATH 211: Linear Algebra [120]

**Computer Science** (4.25 credits)
- CSCI 100: Scientific Computing (or CSCI 102)
- CSCI 110: Imperative Problem Solving [100 or 102]
- CSCI 120: Data Structures & Algorithms + lab (1.25 cr.)[110]
- CSCI 232: Software Engineering – Databases [120]

**Application & Research** (2.25 credits)
- Required minor or 2nd major (not MATH or CS)
- DATA 410 or IDPT 415: Internship (0.25+ cr.) [see p. 2]
- DATA 451: Senior I.S. [D231, M120, & CS110]
- DATA 452: Senior I.S. [D451]

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## Statistical & Data Sciences Minor (6 credits)
- DATA 102^, DATA 106, CSCI 100 (or 102), CSCI 110, DATA 201, DATA 230 or 231

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### Offered EVERY semester
- MATH 110: Applied Differential Calculus ^
- MATH 115: Theory of Differential Calculus ^
- MATH 120: Applied Integral Calculus ^
- MATH 211: Linear Algebra
- CSCI 100: Scientific Computing (or CSCI 102, fall only)
- CSCI 110: Imperative Problem Solving
- CSCI 120: Data Structures & Algorithms

**FALL only**
- DATA 106: Intro to Data Science
- DATA 230: Applied Statistics (for minors & non-majors)
- DATA 231: Applied Statistical Methods (W)

**SPRING only**
- DATA 102: Intro to Statistics
- DATA 201: Data Visualization
- DATA 325: Applied Data Science @
- CSCI 232: Software Engineering – Databases
- CSCI 310: Machine Intelligence **

**^**Spring of odd years only (Spr23, Spr25) **@**Intended primarily for juniors

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- **The SDS major requires a minor or second major outside the department (not in math or CS).**
- **The SDS major requires an approved internship,** for 0.25-1.00 credits via DATA 410 or IDPT 415. Internship credit possibilities include a private internship, a relevant APEX Fellowship, AMRE, etc.
- SDS majors may not double major or minor in Computer Science.
- SDS majors may not double major in Mathematics, but may minor (extra math courses are required).
- Students majoring in Computer Science or Mathematics may minor in Statistical & Data Sciences.
- Other recommended math courses include 125, 212, 229, 329, and 215 (or 130).
- The main software packages emphasized in the major/minor are R, Python, SQL, and C++.

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### Advanced Placement credit info
- DATA 102 for AP Stat (4+); CSCI 100 for AP Computer Science A (4+); see math info for AP Calculus (3+)
- Students with calculus experience but no AP/IB scores can place out via a departmental exam.
**Statistical & Data Sciences core faculty**

Dr. Marian Frazier, Statistics*
Dr. Jillian Morrison, Statistics
Dr. Christina Horr, Statistics
Dr. Drew Pasteur, Mathematics^  
Dr. Colby Long, Mathematics  
Dr. Sofia Visa, Computer Science
Dr. Moses Luri, Business Economics and Statistics

* SDS associate chair  
^ MCS department chair

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### Sample Course Planning Timelines

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