

THE UNIVERSITY OF NORTH CAROLINA ASHEVILLE  
FACULTY SENATE

Senate Document Number 3120S  
Date of Senate Approval 04/09/20

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Statement of Faculty Senate Action:

**APC Document 28 (MATH):                    Adjust the required hours in majors that require MATH 191  
due to adding MATH 167 or placement as a prerequisite**

**Effective Date: Fall 2020**

**In the following departmental listings, adjust the required hours as indicated:**

**1.        Atmospheric Sciences:**

**a.    Page 83, item II under Concentration in Broadcast Meteorology**

II. Required courses outside the major—34-38 hours distributed as follows: CHEM 132; DRAM 213; MATH 191 (requires completion of MATH 167 or placement), 192, 291; MCOM 201; PHYS 221, 222; VMP 205. Recommended electives: Broadcast Journalism courses.

**b.    Page 83, item II under Concentration in Climatology**

II. Required courses outside the major—26-30 hours distributed as follows: CHEM 132; MATH 191 (requires completion of MATH 167 or placement), 192, 291, 394; PHYS 221, 222. Additional courses in Statistics and Mathematics are recommended.

**c.    Page 83, item II under Concentration in Weather Forecasting**

II. Required courses outside the major—26-30 hours distributed as follows: CHEM 132; MATH 191 (requires completion of MATH 167 or placement), 192, 291, 394; PHYS 221, 222. Additional courses in Statistics and Mathematics are recommended.

**2.        Biology:**

**a.    Page 88, item III under Major in Biology**

III. Required courses outside the major—19-23 hours including: CHEM 111, 132 145, 231, and either 232 or 233; MATH 191 (requires completion of MATH 167 or placement); PHYS 131.

**3.        Chemistry:**

**a.    Page 94, item II under Bachelor of Science Degree:**

II. Required courses outside the major—16-20 hours, including MATH 191 (requires completion of MATH 167 or placement), 192; PHYS 221 and either PHYS 222 or 231.

**b. Page 95, item II under Bachelor of Arts Degree:**

- II. Required courses outside the major—16-20 hours, including MATH 191 (requires completion of MATH 167 or placement), 192; PHYS 221 and either PHYS 222 or 231.

**4. Computer Science:**

**a. Page 106, item II under Concentration in Computer Systems**

- II. Required courses outside the major—23-27 hours: MATH 191 (requires completion of MATH 167 or placement), 251 and at least 8 hours from MATH 192, 291, 365, 441 (if not selected above), STAT 185 or 225; PHYS 221, and either PHYS 222 or 231.

**b. Page 106, item II under Concentration in Information Systems**

- II. Required courses outside the major—11-15 hours: MATH 191 (requires completion of MATH 167 or placement), 251, and STAT 185 or 225.

**5. Engineering:**

**a. Page 133, item II under Requirements for Engineering with a Mechatronics Concentration**

- II. Required courses outside the major—31-35 hours, including: CHEM 111, 132; ECON 102; MATH 191 (requires completion of MATH 167 or placement), 192, 291; PHYS 221, 222; STAT 225.

**6. Mathematics:**

**a. Page 233, item I under Concentration in Pure (Theoretical) Mathematics**

- I. Required courses in the major—39-44 hours, including: MATH 191 (requires completion of MATH 167 or placement), 192, 280, 291, 365, 381, 394, 461, 480, 491; and an additional 9-10 hours chosen from STAT 225 and Mathematics or Statistics at the 300-400 level. These latter hours must include either: one from MATH 366, 462, 492; or the sequence STAT 425-426.

**b. Page 233, item I under Concentration in Applied Mathematics**

- I. Required courses in the major—39-44 hours, including: MATH 191 (requires completion of MATH 167 or placement), 192, 280, 291, 365, 381, 394, 480, 491; STAT 225 or 425; one course from MATH 366, 395, 441, 452 or STAT 426; and 6 additional hours in Mathematics or Statistics at the 300-400 level.

**c. Page 234, item I under Concentration in Statistics**

- I. Required courses in the major—40-44 hours, including: MATH 191 (requires completion of MATH 167 or placement), 192, 280, 291, 365, 381, 480; STAT 185 or 225; 325, 326, 425, 426; and an additional 3-hour Mathematics or Statistics course numbered above 300. Students intending to pursue graduate study are strongly advised to take MATH 491.

**d. Page 234, item I under Mathematics with Teacher Licensure**

- I. Required courses in the major—40-44 hours, including: MATH 191 (requires completion of MATH 167 or placement), 192, 280, 291, 332, 365, 381, 461, 480; STAT 225; and an additional 9 hours chosen from MATH 251 and Mathematics or Statistics courses numbered at or above the 300-level.

**e. Page 234, under Minor in Mathematics**

- 21-25 hours in Mathematics or Statistics, including: MATH 191 (requires completion of MATH 167 or placement), 192, 291 and 9 hours chosen from 300-400 level MATH or STAT courses.

**7. Physics:**

**a. Page 260, item II under Concentration in Preparation for Graduate School**

- II. Required courses outside the major—22-26 hours, including: CHEM 111, 132; MATH 191 (requires completion of MATH 167 or placement), 192, 291, 365, 394; MATH 391 and 395 are recommended.

**b. Page 261, item II under Concentration in Applied Physics**

- II. Required courses outside the major—24-28 hours, including: CHEM 111, 132; CSCI 182 or 183; MATH 191 (requires completion of MATH 167 or placement), 192, 291; the selection of 5 additional semester hours coordinated work in Computer Science, Engineering or another area of science. The selected program of courses must be approved by the department chair prior to initiation of the sequence.

**c. Page 261, item II under Physics with Teacher Licensure**

- II. Required courses outside the major—23-27 hours, including CHEM 111, 132; ENVR 130; MATH 191 (requires completion of MATH 167 or placement), 192, 291; PSYC 319 and those additional course requirements indicated in the Education section of the catalog.

**d. Page 261, item II under Physics with Comprehensive Science Teacher Licensure**

- II. Required courses outside the major—35-39 hours, including BIOL 125, 126; CHEM 111, 132, 145, 233; ENVR 105, 130; MATH 191 (requires completion of MATH 167 or placement), 192, 291; PSYC 319 and those additional course requirements indicated in the Education section of the catalog.

**Impact:** Every year a number of students who had intended to major in a STEM discipline change their plans partly as a result of making a bad grade in Calculus I or II. By offering new supports for struggling students and updating our placement procedures, the Math department hopes to make it possible for some of these students to succeed in Calculus class and remain in their original major. The Math department does not intend to implement a strict placement process that would require students who already have the math background necessary to succeed in Calculus I to take MATH 167 first.

Before the start of each academic year, the Office of the Registrar identifies the departments whose combination of major hours (including all concentrations except Teacher Licensure) and LAC

hours exceeds 100 credit hours. For the purposes of this identification, the lower limit of credit ranges is used in the calculation, so adding 4 additional hours to the credit ranges will not automatically result in a department being added to the list of those who will need to petition the credit cap limit. [See SD2015F](#).

**Rationale:** The Math department strives to ensure that the D, F, W rates in our gateway math classes are below 25%. The only course in which we have not been able to meet this goal in recent years is Calculus I. Our D, F, W rate in Calculus I from Fall 2017 through the Fall semester of 2018 was 35%. Adding an official prerequisite for MATH 191 will help ensure that Calculus I students have the background necessary to be successful in the course. All other UNC system schools have a prerequisite or placement required for enrollment in Calculus I (see Appendix A), so this addition will put us in line with the other institutions.