

# MATHEMATICS B.S./ STATISTICS AND DATA SCIENCE M.S.

## Admission Requirements

Complete the following admission requirements:

- Current admission into a baccalaureate degree program
- At least a 3.0 cumulative GPA
- Completion of 24 credits in the undergraduate major program requirements
- Junior standing

## Program Requirements

< Back to Department (<http://catalog.uaf.edu/academic-departments/mathematics-statistics/>)

## Minimum Requirements for Mathematics B.S./Statistics and Data Science M.S.: 138 credits

Students must earn a C- grade or better in each course.

Code	Title	Credits
<b>General University Requirements</b>		
Complete the general university requirements. ( <a href="http://catalog.uaf.edu/bachelors/#gurbachelorsdegreestext">http://catalog.uaf.edu/bachelors/#gurbachelorsdegreestext</a> )		
<b>General Education Requirements</b>		
Complete the general education requirements. ( <a href="http://catalog.uaf.edu/bachelors/#generaleducationrequirementstext">http://catalog.uaf.edu/bachelors/#generaleducationrequirementstext</a> )		36-40
As part of the general education requirements, complete the following:		
MATH F252X	Calculus II	
<b>B.S. Degree Requirements</b>		
Complete the B.S. degree requirements. ( <a href="http://catalog.uaf.edu/bachelors/#bachelorofsciencetext">http://catalog.uaf.edu/bachelors/#bachelorofsciencetext</a> )		16
As part of the B.S. requirements, complete the following:		
MATH F253X	Calculus III	
PHYS F123X and PHYS F124X	College Physics I and College Physics II	
or PHYS F211X and PHYS F212X	General Physics I and General Physics II	
<b>Undergraduate Mathematics Program Requirements</b>		
Complete the following:		
CS F201 or NRM F338	Computer Science I Introduction to Geographic Information Systems	3
ENGL F314 or ENGL F414	Technical Writing Research Writing	3
MATH F265	Introduction to Mathematical Proofs	3
MATH F314	Linear Algebra	3
MATH F371	Probability	3
MATH F401	Introduction to Real Analysis	3

or MATH F405	Abstract Algebra	
MATH F408	Mathematical Statistics	3
STAT F300	Statistics	3
STAT F401	Regression and Analysis of Variance	4
STAT F454	Statistical Consulting Seminar <sup>1</sup>	1
Upper-division mathematics or statistics electives <sup>2</sup>		3

### General University Requirements

Complete the graduate general university requirements. (<http://catalog.uaf.edu/masters/#gurmastersdegreestext>)

### Master's Degree Requirements

Complete the master's degree requirements. (<http://catalog.uaf.edu/masters/#masterofscienceproject>)

As part of the master's degree requirements, complete the following:

STAT F698	Non-thesis Research/Project	6
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### Graduate Statistics and Data Science Program Requirements

Complete the following:

STAT F402	Scientific Sampling	3
STAT F651	Statistical Theory I	3
STAT F652	Statistical Theory II	3
STAT F653	Statistical Theory III: Linear Models	3
STAT F654	Statistical Consulting Seminar	1

Complete two of the following:

STAT F461	Applied Multivariate Statistics	
STAT F602	Experimental Design	
STAT F605	Spatial Statistics	
STAT F611	Time Series	
STAT F621	Nonparametric Statistics and Machine Learning	
STAT F631	Categorical Data Analysis	
STAT F641	Bayesian Statistics	
STAT F661	Sampling Theory	

Complete the following:

Graduate Statistics Electives <sup>3</sup>		6
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**Total Credits** **115-119**

<sup>1</sup> Fulfills the baccalaureate capstone requirement.

<sup>2</sup> Acceptable elective courses include any mathematics or statistics course at the F300 level or above. In some cases, courses with strong statistical content from other disciplines may be used as electives. Such an elective must be approved by an advisor in the Department of Mathematics and Statistics.

<sup>3</sup> Acceptable elective courses include any statistics course at the F600 level or above. In some cases, courses with strong statistical content from other disciplines may be used as electives. Such an elective must be approved by an advisor in the Department of Mathematics and Statistics.

**Note:** All mathematics majors must have an advisor from the Department of Mathematics and Statistics.

**Note:** At least 12 approved mathematics or statistics credits at the F300 level or above must be taken while in residence on the Fairbanks campus.

## Road Maps

< Back to Department (<http://catalog.uaf.edu/academic-departments/mathematics-statistics/>)

Road Maps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Some courses and milestones must be completed in the semester listed to ensure timely graduation. Transfer credit may change the road map.

This road map should be used in conjunction with regular academic advising appointments. All students are encouraged to meet with their advisor or mentor each semester. Requirements, course availability and sequencing are subject to change.

### MATHEMATICS B.S./STATISTICS AND DATA SCIENCE M.S. - ODD YEAR START

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
LS F101X	Library Information and Research	1
MATH F252X	Calculus II	4
GER (Art)		3
GER (Lab Science I)		3
GER (WRTG)		3
<b>Credits</b>		<b>14</b>
<b>Spring</b>		
MATH F253X	Calculus III	4
MATH F265	Introduction to Mathematical Proofs	3
GER (Social Science I)		3
GER (WRTG)		3
Elective (CS F103)		3
<b>Credits</b>		<b>16</b>
<b>Second Year</b>		
<b>Fall</b>		
CS F201	Computer Science I	3
MATH F314	Linear Algebra	3
PHYS F211X	General Physics I	4
GER (Humanities)		3
Elective		3
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
PHYS F212X	General Physics II	4
STAT F300	Statistics	3
GER (COM)		3
Elective		3
Elective		3
<b>Credits</b>		<b>16</b>
<b>Third Year</b>		
<b>Fall</b>		
MATH F371	Probability	3
MATH F401	Introduction to Real Analysis	3
GER (Social Science I)		3
ANT Course		3

Elective		3
<b>Credits</b>		<b>15</b>
<b>Spring</b>		
MATH F408	Mathematical Statistics	3
STAT F401	Regression and Analysis of Variance	4
Math or Stat Elective (F400 level)		3
GER (Art/Social Science/Humanities)		3
Ethics Course		3
<b>Credits</b>		<b>16</b>
<b>Fourth Year</b>		
<b>Fall</b>		
STAT F402	Scientific Sampling	3
STAT F651	Statistical Theory I	3
GER (Lab Science II)		4
Elective		3
Elective		3
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
STAT F454	Statistical Consulting Seminar	1
STAT F652	Statistical Theory II	3
Stat Elective (F600 level)		3
Elective		3
Elective		3
<b>Credits</b>		<b>13</b>
<b>Fifth Year</b>		
<b>Fall</b>		
MATH F698	Non-thesis Research/Project	3
Stat Elective (F600 level)		3
Stat Elective (F600 level)		3
<b>Credits</b>		<b>9</b>
<b>Spring</b>		
STAT F653	Statistical Theory III: Linear Models	3
STAT F654	Statistical Consulting Seminar	1
STAT F698	Non-thesis Research/Project	3
Stat Elective (F600 level)		3
<b>Credits</b>		<b>10</b>
<b>Total Credits</b>		<b>141</b>

### MATHEMATICS B.S./STATISTICS AND DATA SCIENCE M.S. - EVEN YEAR START

Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
LS F101X	Library Information and Research	1
MATH F252X	Calculus II	4
GER (Art)		3
GER (Lab Science I)		3
GER (WRTG)		3
<b>Credits</b>		<b>14</b>
<b>Spring</b>		
MATH F253X	Calculus III	4
MATH F265	Introduction to Mathematical Proofs	3

GER (Social Science I)	3
GER (WR TG)	3
Elective (CS F103)	3

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**Credits** **16**

**Second Year**
**Fall**

CS F201	Computer Science I	3
MATH F314	Linear Algebra	3
MATH F371	Probability	3
PHYS F211X	General Physics I	4
GER (Humanities)		3

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**Credits** **16**

**Spring**

MATH F408	Mathematical Statistics	3
PHYS F212X	General Physics II	4
STAT F300	Statistics	3
GER (COM)		3
Elective		3

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**Credits** **16**

**Third Year**
**Fall**

MATH F401	Introduction to Real Analysis	3
Math or Stat Elective (F400 level)		3
GER (Social Science I)		3
ANT Course		3
Elective		3

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**Credits** **15**

**Spring**

STAT F401	Regression and Analysis of Variance	4
GER (Art/Social Science/Humanities)		3
Ethics Course		3
Elective		3
Elective		3

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**Credits** **16**

**Fourth Year**
**Fall**

STAT F402	Scientific Sampling	3
STAT F651	Statistical Theory I	3
GER (Lab Science II)		4
Elective		3
Elective		3

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**Credits** **16**

**Spring**

STAT F454	Statistical Consulting Seminar	1
STAT F653	Statistical Theory III: Linear Models	3
Stat Elective (F600 level)		3
Elective		3
Elective		3

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**Credits** **13**

**Fifth Year**
**Fall**

MATH F698	Non-thesis Research/Project	3
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Stat Elective (F600 level)	3
Stat Elective (F600 level)	3

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**Credits** **9**

**Spring**

STAT F652	Statistical Theory II	3
STAT F654	Statistical Consulting Seminar	1
STAT F698	Non-thesis Research/Project	3
Stat Elective (F600 level)		3

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**Credits** **10**

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**Total Credits** **141**