<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Attributes</th>
<th>Lecture + Lab + Other</th>
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<tbody>
<tr>
<td>STAT F200X</td>
<td>Elementary Probability and Statistics</td>
<td>3</td>
<td>MATH F151X; or MATH F122X; or MATH F156X; or placement; or permission of instructor.</td>
<td>UAF GER Mathematics Req</td>
<td>3 + 0 + 0</td>
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<tr>
<td>STAT F300</td>
<td>Statistics</td>
<td>3</td>
<td>Offered Spring; Fall Odd-numbered Years</td>
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<td>3 + 0 + 0</td>
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<tr>
<td>STAT F401</td>
<td>Regression and Analysis of Variance</td>
<td>4</td>
<td>STAT F200X [STAT S273-J] or STAT F300 or permission of instructor.</td>
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<td>STAT F402</td>
<td>Scientific Sampling</td>
<td>3</td>
<td>Offered Fall</td>
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<td>STAT F454</td>
<td>Statistical Consulting Seminar</td>
<td>1</td>
<td>STAT F200X or STAT F300; STAT F401; and completion or concurrent enrollment in MATH F408, or permission of instructor.</td>
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<td>1 + 0 + 0</td>
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<td>STAT F461</td>
<td>Applied Multivariate Statistics</td>
<td>3</td>
<td>Offered Spring Even-numbered Years</td>
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<tr>
<td>STAT F602</td>
<td>Experimental Design</td>
<td>3</td>
<td>STAT F401 or permission of instructor.</td>
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<td>3 + 0 + 0</td>
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<td>STAT F605</td>
<td>Spatial Statistics</td>
<td>3</td>
<td>Offered Spring Even-numbered Years</td>
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<td>3 + 0 + 0</td>
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<td>STAT F611</td>
<td>Time Series</td>
<td>3</td>
<td>Offered Spring Odd-numbered Years</td>
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<td>3 + 0 + 0</td>
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STAT F621  Distribution-Free Statistics
3 Credits
Offered Fall Odd-numbered Years
Methods for distribution-free (nonparametric) statistical estimation and testing. These methods apply to many practical situations including small samples and non-Gaussian error structures. Univariate, bivariate, and multivariate tests will be presented and illustrated using a variety of applications and data sets.
Prerequisites: STAT F200X [STAT S273-J].
Lecture + Lab + Other: 3 + 0 + 0

STAT F631  Categorical Data Analysis
3 Credits
Offered Fall Odd-numbered Years
Prerequisites: STAT F401; or permission of instructor.
Lecture + Lab + Other: 3 + 0 + 0

STAT F641  Bayesian Statistics
3 Credits
Offered Fall Even-numbered Years
Bayes' Rule, univariate Bayesian models, conjugate models and nonininformative priors. Multiparameter models. Hierarchical models, general linear model and mixed models. Study of posterior simulation techniques including Markov Chain Monte Carlo and the Gibbs Sampler. Will involve analysis of data sets using WinBUGs and R. Prerequisites: MATH F252X; MATH F371-F408 or STAT F651; or permission of instructor.
Lecture + Lab + Other: 3 + 0 + 0

STAT F642  Bayesian Decision Theory for Resource Management
4 Credits
Offered Spring Even-numbered Years
Application of decision theory to problems in natural resources management. Students will learn to perform Bayesian calculations and uncomplicated decision analysis themselves.
Prerequisites: FISH F621 or FISH F630; or permission of instructor.
Cross-listed with FISH F642.
Lecture + Lab + Other: 2 + 2 + 0

STAT F651  Statistical Theory I
3 Credits
Offered Fall
Probability and distribution of random variables. Conditional probability and stochastic independence. Distributions of functions of random variables. Expected values. Limiting distributions. Distributions derived from the normal distribution. Designed to combine mathematical statistics with applications from a variety of fields. Students from any field of study with strong quantitative skills are encouraged to enroll.
Prerequisites: MATH F253X; MATH F314; previous statistics course; or permission of instructor.
Lecture + Lab + Other: 3 + 0 + 0

STAT F652  Statistical Theory II
4 Credits
Offered Spring Odd-numbered Years
Prerequisites: STAT F651.
Lecture + Lab + Other: 4 + 0 + 0

STAT F653  Statistical Theory III: Linear Models
3 Credits
Offered Spring Even-numbered Years
Best linear unbiased estimation, Gauss-Markov theory and applications, maximum likelihood estimation for linear models, multivariate normal distributions, linear regression and analysis of variance, weighted regression, robust and nonlinear regression, logistic regression, Poisson regression, autoregressive models and the General Linear Model. Designed to combine mathematical statistics with applications from a variety of fields. Students from any field of study with strong quantitative skills are encouraged to enroll. Student must take 651 or all the other courses listed.
Prerequisites: STAT F651 or STAT F401; MATH F251X; MATH F252X; MATH F253X; MATH F314.
Lecture + Lab + Other: 3 + 0 + 0

STAT F654  Statistical Consulting Seminar
1 Credit
Offered Spring
Introduction to statistical consulting and data analysis. Emphasis on interaction with researchers and identification of scientific and statistical issues relevant to the research problem. Includes regular class meetings as well as supervised meetings with researchers. Designed to combine mathematical statistics with applications from a variety of fields. Students from any field of study with strong quantitative skills are encouraged to enroll. May be repeated for a total of three credits.
Prerequisites: STAT F200X or STAT F300; STAT F401; and completion or concurrent enrollment in MATH F408; or permission of instructor.
Stacked with STAT F454.
Lecture + Lab + Other: 1 + 0 + 0

STAT F661  Sampling Theory
3 Credits
Offered Juneau As Demand Warrants
Prerequisites: STAT F200X [STAT S273-J]; STAT F401; or permission of instructor.
Lecture + Lab + Other: 3 + 0 + 0

STAT F692  Seminar
1-6 Credits
Lecture + Lab + Other: 0 + 0 + 0

STAT F692A  Seminar
1-6 Credits
Lecture + Lab + Other: 0 + 0 + 0
STAT F692P  Seminar
1-6 Credits
Lecture + Lab + Other: 0 + 0 + 0

STAT F698  Non-Thesis Research/Project
1-6 Credits
Lecture + Lab + Other: 0 + 0 + 0