

Statistics

Statistics Major

The Department of Statistics offers a major leading to a B.S., B.A., M.S., or Ph.D. degree, as well as minors in Statistics for both undergraduate and graduate students. The program is flexible enough to be individually planned around prior experience and in accord with professional goals. The program emphasis is on applied statistics, consulting, and computational methods.

Statistics Minors

Two different tracks within the Statistics minor are offered. A Department of Statistics (Morrill 221 (<http://www.ndsu.edu/bulletin/buildings/morrill>)) adviser for minors must approve the program.

Major Requirements

Major: Statistics

Degree Type: B.A. or B.S.

Required Degree Credits to Graduate: 122

General Education Requirements

First Year Experience (F):

| | | |
|----------|---|---|
| UNIV 189 | Skills For Academic Success (Students transferring in 24 or more credits do not need to take UNIV 189.) | 1 |
|----------|---|---|

Communication (C):

| | | |
|---|---------------------------------|---|
| ENGL 110 | College Composition I | 3 |
| ENGL 120 | College Composition II | 3 |
| One Course in Upper Level Writing: Select from current general education list | | 3 |
| COMM 110 | Fundamentals of Public Speaking | 3 |

Quantitative Reasoning (R):

| | | |
|----------|------------|---|
| MATH 165 | Calculus I | 4 |
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Science & Technology (S):

A one-credit lab must be taken as a co-requisite with a general education science/technology course unless the course includes an embedded lab experience equivalent to a one-credit course. Select from current general education list

Humanities & Fine Arts (A): Select from current general education list 6

Social & Behavioral Sciences (B): Select from current general education list 6

Wellness (W): Select from current general education list 2

Cultural Diversity (D): Select from current general education list

Global Perspectives (G): Select from current general education list

Total Credits 41

College Requirements

Bachelor of Science (BS) Degree – An additional 6 credits in Humanities or Social Sciences*

Bachelor of Arts (BA) Degree – An additional 12 credits Humanities and Social Sciences* and proficiency at the second year level in a modern foreign language.

* Humanities and Social Sciences may be fulfilled by any course having the following prefix: ADHM, ANTH, ARCH, ART, CJ, CLAS, COMM, ECON, ENGL, FREN, GEOG, GERM, HDFS, HIST, LA, LANG, MUSC, PHIL, POLS, PSYC, RELS, SOC, SPAN, THEA, WGS, or any course from the approved list of general education courses in humanities and social sciences (general education categories A and B). These credits must come from outside the department of the student's major.

Major Requirements

A grade of 'C' or better is required in ALL courses used toward the major.

| | | |
|---|--|---|
| General Education Requirements | 40 | |
| College of Science and Mathematics Requirements | 6-12 | |
| Statistics Major Requirements | | |
| MATH 129 | Basic Linear Algebra | 2 |
| MATH 166 | Calculus II | 4 |
| MATH 265 | Calculus III | 4 |
| STAT 367 | Probability | 3 |
| STAT 368 | Statistics | 3 |
| STAT 461 | Applied Regression Models | 3 |
| STAT 462 | Introduction to Experimental Design | 3 |
| STAT 476 | Actuary Exam Study II | 1 |
| or STAT 491 | Seminar | |
| Electives: Select 15 credits from the following (Can choose only one CSCI course): | 15 | |
| CSCI 161 | Computer Science II | |
| CSCI 228 | Computing Fundamentals II | |
| CSCI 418 | Simulation Models | |
| MATH 429 | Linear Algebra | |
| STAT 451 | | |
| STAT 460 | Applied Survey Sampling | |
| STAT 463 | Nonparametric Statistics | |
| STAT 464 | Discrete Data Analysis | |
| STAT 467 | Probability and Mathematical Statistics I | |
| STAT 468 | Probability and Mathematical Statistics II | |
| STAT 469 | Introduction to Biostatistics | |
| STAT 470 | Statistical SAS Programming | |
| STAT 471 | Introduction to the R Language | |
| STAT 472 | Time Series | |
| STAT 473 | Actuarial Statistical Risk Analysis | |
| STAT 477 | Introductory Survival and Risk Analysis I | |
| STAT 478 | Introductory Survival & Risk Analysis II | |
| Related Required Courses | | |
| Select one of the following: | 3-4 | |
| CSCI 126 | Beginning FORTRAN | |
| CSCI 160 | Computer Science I | |
| CSCI 227 | Computing Fundamentals I | |
| Select one of the following: | 3 | |
| CSCI 222 | Discrete Mathematics | |
| MATH 270 | Introduction to Abstract Mathematics | |

Minor Requirement: A minor is required in one of the following disciplines: Social Science, Physical Science, Biological Science, Business, Mathematics, or Computer Science. 16

Degree Requirements: Potential of 15 credits to reach 122 15

Total Credits 122-129

Program Notes

- Except for courses offered only as pass/fail grading, no course may be taken Pass/Fail.

Two tracks are available:

Statistical (Standard) Track (p.)

Applied Statistics Track (p.)

Minor Requirements

Statistics (Standard) Track

Required Credits: 22

Required Courses

| | | |
|---------------|-------------------------------------|----|
| MATH 165 | Calculus I | 4 |
| MATH 166 | Calculus II | 4 |
| STAT 331 | Regression Analysis | 2 |
| or STAT 461 | Applied Regression Models | |
| STAT 367 | Probability | 3 |
| STAT 368 | Statistics | 3 |
| STAT 462 | Introduction to Experimental Design | 3 |
| STAT Elective | 400 Level | 3 |
| Total Credits | | 22 |

Minor Requirements

Applied Statistics Track

Required Credits: 17

Required Courses

| | | |
|----------------|--|----|
| STAT 330 | Introductory Statistics | 3 |
| STAT 331 | Regression Analysis | 2 |
| STAT Electives | Select 4 department approved 400-level, 3 credit statistics courses. | 12 |
| Total Credits | | 17 |

Minor Requirements and Notes

- A minimum of 8 credits must be taken at NDSU.