This transfer guide is designed as an advising tool to facilitate a smooth transition between institutions by identifying relevant course work recommended to be completed prior to transfer.

### Courses Needed Prior to Transfer (if student is transferring in as a junior)
- MATH 229 - Calculus I Credits: 4
- MATH 230 - Calculus II Credits: 4
- MATH 232 - Calculus III Credits: 4

### Courses to be Completed at NIU
- MATH 240 - Linear Algebra and Applications Credits: 4
- MATH 360 - Model Building in Applied Mathematics Credits: 3
- MATH 430 - Advanced Calculus I Credits: 3
- STAT 350 - Introduction to Probability and Statistics Credits: 3
- STAT 470 - Introduction to Probability Theory Credits: 3
- STAT 472 - Introduction to Mathematical Statistics Credits: 3

Two of the following (6-8)
- STAT 473 - Statistical Methods and Models I Credits: 3
- AND STAT 473A - Statistical Computing Packages Credits: 1
- STAT 474 - Statistical Methods and Models II Credits: 3
- STAT 478 - Statistical Methods of Forecasting Credits: 3
- STAT 479 - Practice of Bayesian Statistics Credits: 3
- STAT 483 - Stochastic Processes I Credits: 4
- STAT 491 - Programming and Computing in Statistics Credits: 3

At least 3 additional semester hours from among the following courses (3-4)
- MATH 420 - Algebra I Credits: 3
- MATH 423 - Linear and Multilinear Algebra Credits: 3
- MATH 431 - Advanced Calculus II Credits: 3
- MATH 434 - Numerical Linear Algebra Credits: 3
MATH 435 - Numerical Analysis Credits: 3
MATH 440 - Elements of Complex Analysis Credits: 3
MATH 444 - Linear Programming and Network Flows Credits: 3
MATH 450 - Introduction to Topology Credits: 3
STAT 382 - Theory of Interest and Financial Derivatives Credits: 4
STAT 473 - Statistical Methods and Models I Credits: 3
AND STAT 473A - Statistical Computing Packages Credits: 1
STAT 474 - Statistical Methods and Models II Credits: 3
STAT 478 - Statistical Methods of Forecasting Credits: 3
STAT 479 - Practice of Bayesian Statistics Credits: 3
STAT 481 - Probabilistic Foundations in Actuarial Science Credits: 3
STAT 483 - Stochastic Processes I Credits: 4
STAT 491 - Programming and Computing in Statistics Credits: 3
STAT 493 - Special Topics in Statistics Credits: 1-3

Requirement outside Department (4)
- CSCI 230 - Computer Programming in FORTRAN Credits: 4
  OR CSCI 240 - Computer Programming in C++ Credits: 4

Community college students are encouraged to do the following:
- Complete an A.A. or A.S. degree prior to transferring to NIU
- Utilize the NIU Articulation Handbook for information regarding the transferability of courses.
  [http://www.niu.edu/admissions/transfer/transfercenter/handbook/tables.shtml](http://www.niu.edu/admissions/transfer/transfercenter/handbook/tables.shtml)
- Review “Limited Admissions Programs transfer Course Equivalents” (if appropriate) proved by the NIU Transfer Center
  [http://www.admissions.niu.edu/admissions/transfer/credits/limited/index.shtml](http://www.admissions.niu.edu/admissions/transfer/credits/limited/index.shtml)
- Consult with the College of Liberal Arts & Science and/or review the websites for your intended major for detailed information about special requirements, program admission requirements, and course requirements.

A major in Probability and Statistics uses statistical methods to collect and analyze data and to help solve real-world problems in business, engineering, healthcare, or other fields.
Statisticians typically do the following:

• Decide what data are needed to answer specific questions or problems
• Determine methods for finding or collecting data
• Design surveys, experiments, or opinion polls to collect data
• Collect data or train others to do so
• Analyze and interpret data
• Report conclusions from their analyses

NIU Probability and Statistics majors will use specialized statistical software to analyze data. In their analyses, statisticians identify trends and relationships within the data. They also conduct tests to find out the data’s validity and to account for high survey nonresponse rates or sampling error. Some statisticians may help create new software to analyze data more accurately and efficiently.

Statisticians present the findings from their analyses and discuss the data’s limitations to prevent inaccurate conclusions from being drawn. They may present written reports, tables, charts, and graphs to other team members and to clients. Statisticians also recommend how to improve the design of future surveys or experiments.

Students with an undergraduate degree in probability and statistics often go on to study probability and statistics at the graduate level. Other graduates have obtained employment in many various fields such as education, marketing, psychology, sports, or any other field that requires the collection and analysis of data. In particular, insurance, government, healthcare, and research and development companies employ many statisticians.

Internship opportunities in statistics are available with many employers, including pharmaceutical companies, insurance companies, manufacturing companies, and government agencies.

For more information contact:
Carrie Helmig, MS, Recruiting and Advising Assistant
Division of Statistics, DuSable Hall 366, Northern Illinois University
815-753-6778 chelmig@niu.edu
http://www.niu.edu.stat