Students who have completed the required courses for admission to this major and have a 3.2 UM-TC technical GPA at the end of the fall semester will be guaranteed admission. All other students who have completed the required courses will be considered for admission on a space-available basis. Admission following the spring semester is only based on space availability. The major application database is available at z.umn.edu/csemajorapp.

Liberal Education course or Writ 1301

Lab Science †

Liberal Education course or Writ 1301

Liberal Education course

CSE 1001: 1st Yr Experience 1

Junior Year

Fall Semester
Math 4242 Applied Lin Alg (2373)

Stat 5101 Theory of Stat I ♠ (Math 2374)

Technical Elective

Liberal Education course

Spring Semester
Stat 5102 Theory of Stat II ♠ (5101 or Math 5651)

Statistics Elective ◊

Statistics Elective ◊

Liberal Education course 3/4

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Liberal Education course 3/4

About This Plan
- This plan is not a contract. Curriculum can change.
- Beginning fall 2015, CSE Statistics students cannot use credit for both Stat 3011 and 3021 for their major.
- Shaded courses are only offered in the indicated semester.
- Course pre-requisites and co-requisites (designated by &) are listed below the course number and title.
- Students can take either the CSE-only or University-wide versions of the math course (Math 1371/1271, 1372/1272, 2373/2243, 2374/2263).
- Double boxed courses, along with one of two courses with a dashed outline, are required for application to this major.
- Liberal Education and Writing requirements with an (*) will be fulfilled by taking courses required for this major at UM-TC.

Applying to your Major
Students who have completed the required courses for admission to this major and have a 3.2 UM-TC technical GPA at the end of the fall semester will be guaranteed admission. All other students who have completed the required courses will be considered for admission on a space-available basis. Admission following the spring semester is only based on space availability. The major application database is available at z.umn.edu/csemajorapp.

Writing Requirements:
- University Writing: Writ 1301/1401 or equivalent
- Writing Intensive (WI):
  - Two: 1xxx or 2xxx level
  - One: 3/4/5xxx level (in major)*
  - One: 3/4/5xxx level (any dept.)

Total Credits Needed for Degree: 120
Statistics

ACTIVITIES STATISTICS MAJORS DO:

Statistics is the science and art of enhancing knowledge in the face of uncertainty through modeling, predictions, and decisions. It is central to solutions of problems in the environment, medicine, law, industry, technology, finance, business, public policy, computing, and science in general. The need for statistics applies to almost every area of our lives.

Statisticians contribute to scientific inquiry by applying their mathematical and statistical knowledge to the design of surveys and experiments; the collection, processing, and analysis of data; and the interpretation of the results. Statisticians may apply their knowledge of statistical methods to a variety of subject areas, such as biology, economics, engineering, medicine, public health, psychology, marketing, education, and sports. Many economic, social, political, and military decisions cannot be made without statistical techniques, such as the design of experiments to gain federal approval of a newly manufactured drug. Statistical procedures based on scientific sampling have become basic tools in diverse fields such as weather forecasting, opinion polling, biological and agricultural estimation, and business trend prediction. Statisticians are in demand wherever quantitative studies are conducted.

While some jobs related to statistics require a bachelor’s degree, many research-oriented statisticians pursue advanced degrees.

INDUSTRIES STATISTICS MAJORS WORK IN (SAMPLE LISTING):

Agriculture  
Consulting  
Financial services  
Biostatistics  
Higher education  
Environmental research  
Epidemiology  
Government  
Manufacturing  
Environmental consulting  
Quality improvement  
Computer information technology  
Management  
Banking  
Public health  
Research  
Marketing  
Pharmaceuticals  
Law  
Product reliability  
Clinical trials  
Insurance  
Sports  
Database marketing

EMPLOYERS WHO HIRE STATISTICS MAJORS (SAMPLE LISTING):

Cetero Research  
Towers Watson  
OptiMetrics Inc.  
Polar Semiconductor, LLC  
Stat-Ease  
DCM  
Intel Corporation  
Accenture  
Pearson VUE  
Travelers Insurance  
Express Scripts  
Xcel Energy  
MN Department of Revenue  
Questar Assessment Inc.  
Allianz Life  
Nonin Medical Inc.  
PricewaterhouseCoopers  
Nash Finch Company  
Sanford Health  
Epic Systems  
U.S. Bank  
Northwestern Mutual  
Ameriprise Financial

TYPES OF POSITIONS FOR STATISTICS MAJORS (SAMPLE LISTING):

- **Statistician**: Applies mathematical and statistical knowledge to the design of surveys and experiments.
- **Actuary**: Deals with the financial impact of risk and uncertainty. Actuaries mathematically evaluate the likelihood of events and quantify the contingent outcomes in order to minimize losses.
- **Budget analyst**: Develops, analyzes, and executes budgets, as well as estimates future financial needs for private businesses, nonprofit organizations, and government agencies.
- **Insurance underwriter**: Decides whether insurance is provided and, if so, under what terms. Insurance underwriters identify and calculate the risk of loss from policyholders, establish who receives a policy, determine the appropriate premium, and write policies that cover this risk.
- **Statistical consultant**: Works with companies and organizations to analyze research and data.
- **Management analysis**: Studies and analyzes business-related problems, synthesizing information from many sources to recommend solutions.
- **Survey researcher**: Gathers information and statistical data to help companies understand what types of products people want, who will buy them, and at what price.

**Some of these positions may require an advanced degree.**