BACHELOR OF SCIENCE IN INFORMATICS (DATA SCIENCE MINOR)

Web Site: https://twu.edu/math-computer-science/undergraduate-programs/

The B.S. in Informatics with Data Science Minor begins with a comprehensive computer science core and combines academic components from the computer science and mathematics programs. This hybrid interdisciplinary and interprofessional program prepares students for diverse careers available to those with in-demand science and mathematics-oriented degrees. The program teaches key components of informatics and data science such as data analysis, visualization, machine learning, and big data. At TWU, small class sizes provide quality learning environments and active engagement with an outstanding, caring, and eager faculty.

Marketable Skills
Defined by the Texas Higher Education Coordinating Board's 60x30 Strategic Plan (http://www.60x30tx.com/) as, "Those skills valued by employers that can be applied in a variety of work settings, including interpersonal, cognitive, and applied skills areas. These skills can be either primary or complementary to a major and are acquired by students through education, including curricular, co-curricular, and extracurricular activities."

1. In consult with customers or other departments on project status, proposals, or technical issues, such as software system design or maintenance, software testing, and validation procedures, adapt to new hardware, or to upgrade interfaces and improve performance.
2. Work effectively as a member of an interdisciplinary project team to coordinate database and project development, determine project scope and limitations, critically analyze issues, and solve problems.
3. Develop and implement procedures for data management, data storage and retrieval, evaluating data quality, data security, data transfer, data analysis, modeling, and visualization.
4. Plan, coordinate, and implement security measures to safeguard information in computer files against accidental or unauthorized damage, modification, or disclosure.
5. Prepare reports or correspondence concerning project specifications, activities, or status.
6. Demonstrate personal accountability and work habits, integrity, and ethical behavior.
7. Proficient in the software tools to achieve the skills listed, including but not limited to Java, Python, Perl, SQL, NoSQL, R, Microsoft Project, Microsoft Visio, Tableau, SAS, SPSS, modeling software.

Admissions
All applicants must meet the general undergraduate admission requirements (http://catalog.twu.edu/undergraduate/admission-information/).

Degree Requirements
Total Semester Credit Hours (SCH): 120
## Bachelor of Science in Informatics (Data Science Minor)

### Total SCHs: 120

#### Departmental Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>SCHs</th>
</tr>
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<tbody>
<tr>
<td>MATH 1703</td>
<td>Elementary Statistics I (may be applied from core)</td>
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**Elective (Global Perspectives course)**: 15

Total SCHs: 18

### Recommended Plan of Study

#### First Year

**Fall**
- CSCI 1421 Programming Fundamentals I - Laboratory (1)
- CSCI 1423 Programming Fundamentals I (3)
- CSCI 1513 Introduction to Informatics (3)
- ENG 1013 Composition I (3)
- HIST 1013 History of the United States, 1492-1865 (3)
- MATH 1703 Elementary Statistics I (Recommended Core) (3)
- UNIV 1231 Learning Frameworks: The First Year Experience (1)

**Spring**
- CSCI 2493 Programming Fundamentals II (3)
- ENG 1023 Composition II (3)
- HIST 1023 History of the United States, 1865 to the Present (3)
- MATH 1703 Elementary Statistics II (3)

**Total SCHs**: 15

#### Second Year

**Fall**
- CSCI 3053 Data Structures (3)
- MATH 1013 Financial and Quantitative Literacy (Recommended Core CAO) (3)
- NURS 2213 Introduction to Health Informatics (3)
- POLS 2013 U.S. National Government (3)

**Spring**
- CSCI 3013 Applied Computational Thinking (3)
- CSCI 3513 Information Systems Project Management (3)
- POLS 2023 Texas Government (3)

**Total SCHs**: 15

#### Third Year

**Fall**
- CSCI 3423 Database Management (3)
- LS 3053 Interdisciplinary Information Retrieval (3)
- Multicultural Women's Studies (CAO Core) (3)
- Social & Behavioral Science Core (3)
- Minor Course (3)

**Spring**
- CSCI 3703 Interface Design and Development (3)
- Elective (Upper-Level Major Discipline) (3)
- Minor Course (3)
- Elective (Upper Level) (3)

**Total SCHs**: 15

#### Fourth Year

**Fall**
- CSCI 4313 Networking and Data Communication (3)
- HS 3383 Legal and Ethical Issues in Health Informatics (3)
- Minor Course (3)
- Minor Course (Upper Level) (3)
- Elective (Global Perspectives course) (3)

**Spring**
- CSCI 4923 Capstone in Interprofessional Informatics (3)
- Minor Course (Upper Level) (3)
- Elective (Upper Level) (3)
- Elective (3)
- Elective (1)

**Total SCHs**: 13

**Total SCHs**: 120