ACCELERATED B.S. IN DATA SCIENCE & INFORMATICS (DATA SCIENCE) / M.S. IN INFORMATICS (DATA SCIENCE)

Web Site: https://twu.edu/informatics/undergraduate-programs/

The Accelerated 4+1 Bachelor of Science in Data Science and Informatics with Data Science Minor / Master of Science in Informatics with Application Area: Data Science begins with a comprehensive computer science core and combines academic components from the computer science and mathematics programs. This hybrid interdisciplinary 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 (https://reportcenter.highered.texas.gov/agency-publication/miscellaneous/thecb-60x30-strategic-plan/) 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."

a. 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.
b. 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.
c. Develop and implement procedures for data management, data storage and retrieval while evaluating data quality, data security, data transfer, data analysis, modeling, and visualization.
d. Plan, coordinate, and implement security measures to safeguard information in computer files against accidental or unauthorized damage, modification, or disclosure.
e. Prepare reports or correspondence concerning project specifications, activities, or status.
f. Demonstrate personal accountability and work habits, integrity, and ethical behavior.
g. Demonstrate proficiency 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

Application Deadlines

- Fall - June 1st
- No Spring admissions
- No summer admissions

Admission Requirements

To apply to the Accelerated B.S. in Informatics with Data Science minor / M.S. in Informatics with Application Area: Data Science program, students must:

- Be currently enrolled in the B.S. in informatics with Data Science minor program at TWU.
- Have a minimum grade point average of 3.5 in all upper-division coursework.
- Have successfully completed a minimum of 72 but no more than 90 semester credit hours of coursework toward the B.S.

How to Apply to the Accelerated Program

Students interested in applying to this accelerated program are encouraged to contact your advisor prior to applying preferably in the Spring semester of your sophomore year to ensure that you are advised to correct plan of study in preparation for the accelerated program.

- Be currently enrolled in the B.S. in informatics with Data Science Minor program at TWU.
- Notify the TWU Division of Computer Science Undergraduate Advisor of your interest in the accelerated program. The email must contain your last Name and TWU ID and Accelerated Program in the subject line.
- Notification of interest in the BS/MS in Informatics should be done after a successful completion of 72 SCH and prior to 90 SCH in the program.
- Students accepted to the accelerated BS/MS in Informatics program should apply to Master's in Informatics with Application Area: Data Science during their final undergraduate semester. Students must apply for graduate admission by March 1 if graduating in May or August, or October 1 if graduating in December.

Accelerated Graduate Program Policy Guidelines

Students may apply to the accelerated graduate degree program once they have attained advanced junior standing with at least 72 undergraduate semester credit hours (SCH). Upon admission to an accelerated program, students with senior standing (90 earned SCH) may enroll in graduate courses for credit. Approved courses will apply to both an undergraduate and a graduate degree.

Conditions

- Undergraduate students may enroll in no more than 6 SCH of graduate coursework in each semester or term.
- Minimal criteria for admission will include a cumulative undergraduate GPA of at least 3.0. The program may set higher GPA requirements as outlined on their TWU graduate program website at the time of graduate application.
- Once admitted to an accelerated program, students must maintain a 3.0 GPA throughout the remainder of their baccalaureate degree, or their admission to the accelerated graduate program may be revoked. Academic components may set additional requirements for their programs.

Graduate Application Process

All students must meet the University requirements as outlined in the Admission to the TWU Graduate School (http://catalog.twu.edu/graduate/graduate-school/admission-graduate-school/) section of the catalog.

This academic program may have additional graduate admission criteria that must also be completed as outlined on the graduate program's website.

Degree Requirements

Total Semester Credit Hours (SCH): 120

Major: 49 SCH **Minor**: 18 SCH

Program Code: INFO.BS.DATASCI.ACC; **CIP Code:** 11.0104.00

Students must maintain an overall GPA of 3.5 or higher while in the Accelerated B.S./M.S. program.

Texas Core Curriculum

Code	Title	SCHs
ENG 1013	Composition I	3
ENG 1023	Composition II	3
Mathematics		3
Life & Physical Sciences		6
Language, Philosophy, & Culture		3
Creative Arts		3
HIST 1013	History of the United States, 1492-1865	3
HIST 1023	History of the United States, 1865 to the Present	3
POLS 2013	U.S. National Government	3
POLS 2023	Texas Government	3
Social & Behavioral Sciences		3
CAO: Women's Studies		3
CAO: First Year Seminar, Wellness or Mathematics		3
Total SCHs		**42**

Courses Required for Major

Code	Title	SCHs
CSCI 1423 & CSCI 1421	Programming Fundamentals I and Programming Fundamentals I - Laboratory	4
CSCI 1513	Introduction to Informatics	3
CSCI 2493	Programming Fundamentals II	3
CSCI 2513	Information Security and Ethics	3
CSCI 3053	Data Structures	3
CSCI 3513	Information Systems Project Management	3
CSCI 3703	Interface Design and Development	3
CSCI 4513	Data Warehousing	3
CSCI 4723	Machine Learning	3
HS 3383	Legal and Ethical Issues in Health Informatics	3
LS 3053	Interdisciplinary Information Retrieval	3
MATH 1713	Elementary Statistics II	3
NURS 2213	Introduction to Health Informatics	3
Graduate Courses		
CSCI 5103	Fundamentals of Informatics	3
CSCI 5203	Database Systems	3
CSCI 5413	Data Communication Networks	3
Total SCHs		**49**

Courses Required for Minor

Code	Title	SCHs
CSCI 3113	Fundamentals of SAS Programming	3
CSCI 3423	Database Management	3
CSCI 3603	Foundations of Data Science	3
CSCI 4303	Advanced Modeling and Visualization	3
CSCI 4823	Principles of Data Mining	3
Graduate Courses		
CSCI 5673	Big Data: Management, Access, and Use (replaces CSCI 4623)	3
Total SCHs		**18**

Departmental Requirements

Code	Title	SCHs
MATH 1703	Elementary Statistics I (May be applied from core.)	3
Electives		
Upper-level CSCI (3000-4000 level) (With advisor's approval.)		6
Global Perspectives		3
Total SCHs		**12**

Recommended Plan of Study

First Year			
Fall		**TCCN**	**SCHs**
CSCI 1423 & CSCI 1421	Programming Fundamentals I and Programming Fundamentals I - Laboratory		4
CSCI 1513	Introduction to Informatics		3
MATH 1703	Elementary Statistics I	MATH 1342	3
ENG 1013	Composition I	ENGL 1301	3
HIST 1013	History of the United States, 1492-1865	HIST 1301	3
UNIV 1231	Learning Frameworks: First-Year Seminar	EDUC 1100, EDUC 1200, EDUC 1300	1
	SCHs		**17**
Spring		**TCCN**	
CSCI 2493	Programming Fundamentals II	COSC 1437	3
ENG 1023	Composition II	ENGL 1302	3
HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
MATH 1713	Elementary Statistics II		3
Creative Arts Core			3
	SCHs		**15**
Second Year			
Fall		**TCCN**	
CSCI 3053	Data Structures		3
MATH 1013	Financial and Quantitative Literacy	MATH 1332	3

NURS 2213	Introduction to Health Informatics		3
CSCI 3423	Database Management		3
Life/Physical Sciences Core			3
	SCHs		**15**
Spring		**TCCN**	
CSCI 2513	Information Security and Ethics		3
CSCI 3513	Information Systems Project Management		3
POLS 2023	Texas Government	GOVT 2306	3
Life/Physical Sciences Core			3
Language, Philosophy, & Culture Core			3
	SCHs		**15**
Third Year			
Fall		**TCCN**	
CSCI 3603	Foundations of Data Science		3
CSCI 4723	Machine Learning		3
POLS 2013	U.S. National Government	GOVT 2305	3
LS 3053	Interdisciplinary Information Retrieval		3
Social & Behavioral Science Core			3
	SCHs		**15**
Spring		**TCCN**	
CSCI 3113	Fundamentals of SAS Programming		3
CSCI 3703	Interface Design and Development		3
CSCI 4303	Advanced Modeling and Visualization		3
CSCI 4513	Data Warehousing		3
Multiculture Women's Studies (CAO) Core			3
	SCHs		**15**
Fourth Year			
Fall		**TCCN**	
CSCI 5103	Fundamentals of Informatics		3
CSCI 5203	Database Systems		3
HS 3383	Legal and Ethical Issues in Health Informatics		3
CSCI 4823	Principles of Data Mining		3
Elective (Global Perspective course)			3
	SCHs		**15**
Spring		**TCCN**	
CSCI 5413	Data Communication Networks		3
CSCI 5673	Big Data: Management, Access, and Use		3
Elective (3000-4000 CSCI)			3
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General Elective			1
	SCHs		**13**
	Total SCHs:		**120**