

(For all students in the Program)

Undergraduate Minor Program in Smart City

The Minor Program in Smart City is designed mainly for engineering students, but also open to students in other majors. Any undergraduate students with an overall CGA of 2.7 or above may enroll in this Minor Program.

Students must declare their intention to enroll in the Minor Program no earlier than the first regular term of their second year of study, but no later than the last day of the add/drop period in the first regular term of their final year of study. Students who wish to withdraw from the Minor Program should apply before the last day of the add/drop period in the first regular term of their final year of study.

Minor Requirements

To graduate with a minor in Smart City, students must be enrolled in the minor program and complete a minimum total of 18 credits and all of its requirements, as well as all the requirements of their major program of study. Students must attain an average grade point of at least 2.5 in courses taken within the minor program.

For credit transfer, students can transfer a maximum total of 6 credits to the Minor Program. Out of the total credits required by the minor program, at least 9 credits should be single-counted within the minor and are not used to fulfill any other requirements for graduation except the 120-credit degree requirement.

Students may use no more than 6 credits earned from courses offered in self-paced online delivery mode to satisfy the graduation requirements of a degree program. This 6-credit limit does not apply to credits obtained through the credit transfer procedures of the University.

Some courses in the curriculum have been previously coded with CORE-prefix where the special CORE-prefix has been replaced by the domain code of courses starting from Fall 2023-24. Students who have registered with these CORE-coded courses may look up their latest course codes by consulting the conversion table published on the Common Core website.

Required Course(s)

			Credit(s) attained
CIVL		Note: CIVL 1210 <u>OR</u> CIVL 4240	3
CIVL	1210	Fundamental of Green Buildings	3
CIVL	4240	Smart Infrastructure Sensing and Data Analytics	3

Elective(s)

			Minimum credit(s) required
SENG/SSCI/ AIS/SBM		Smart City Electives (5 courses in at least 2 fields from the specified elective list. At least 2 courses at 4000-level. Course(s) taken as required course(s) of the major program may not be counted towards this elective requirement.)	15
Building/Construction Automation			
CIVL	4210	Advanced Construction with AI and Robotics	3
MECH	4360	Introduction to Intelligent Building Systems	3

Economy/System Engineering

CIVL	4640	Introduction to Smart City Economics	3
ISOM	3360	Data Mining for Business Analytics	3
ISOM	3370	Big Data Technologies	3

Energy

CIVL	4310	Energy System Modeling for Buildings and Cities	3
PPOL	3210	Energy Policy	3

Environment

CIVL	4560	Urban Hydroclimate and the Built Environment	3
MECH	4350	Indoor Air Quality in Buildings	3
ENVR	2020	Urban Air Pollution	3
ENVR	4330	Environmental Geographical Information System	3

Internet of Things/Big Data

CIVL	1220	Big Data for Smarter Cities	3
CIVL	4220	Scientific Machine Learning for Infrastructure Systems	3
COMP	3311	Database Management Systems	3
COMP	4211	Machine Learning	3
COMP	4331	Data Mining	3
ISDN	2602	Internet of Things: Integrative System Design	3
EMIA	4500A	Exploring Design Thinking and AI in Smart City Development	3

Sustainability

CIVL	4450	Carbon Footprint Analysis and Reduction	3
ENVR	3110	Life Cycle Assessment for Sustainable Development	3
PPOL	2110	Science, Technology and Society in China	3

Transportation

CIVL	4610	Introduction to Data Analytics for Smart Transportation Systems	3
CIVL	4650	Multi-agent Decision Making in Smart Cities	3