



South Central College
Program Design

AAS 3405 Civil Engineering Technology

Program Information

Instructional Level Associate Degree

Career Cluster Engineering, Manufacturing & Technology

Description

Learners in the Civil Engineering Technology program will learn surveying techniques along with design and construction practices dealing with sewer, water, streets, roads and land surveying. Learners will be introduced to the newest surveying equipment, receive two materials testing certifications, and learn four different drafting and mapping softwares.. The ability to work independently and make decisions, along with accuracy and neatness are very important qualities for technicians. Technicians must be able to deal with professional people as well as the general public on a daily basis. The A.A.S. degree provides students with the necessary technical skills plus the Liberal Arts and Sciences base to broaden their horizons and aid them in seeing employment advancement.

Program Admission Dates (Fall and/or Spring)

Fall and Spring Semester

Program Location (North Mankato and/or Faribault)

North Mankato

Program Student Learning Outcomes

- 1 Apply surveying techniques with state of the art surveying equipment.
- 2 Execute design and construction practices dealing with sewer, water, streets, roads and land surveying.
- 3 Prepare neat and accurate working drawings and other construction and contract documents.
- 4 Use computer aided drafting and surveying systems competently.
- 5 Communicate with professional people as well as the general public.

Program Configurations

Fall Start

Credits

Technical Course	45
Arts & Sciences	15

Semester 1 - Year 1

Course #	Course Title	Credits	Function
CTLS 1110	Basic AutoCAD	3	Technical Course
CTLS 1810	Introduction to Surveying	4	Technical Course
GIS 2840	Introduction to Geographic Information Systems (GIS)	4	Technical Course
MATH 120	College Algebra	4	Arts & Sciences

Semester 2 - Year 1

Course #	Course Title	Credits	Function
CTLS 1815	Surveying 2	4	Technical Course
CTLS 1820	Materials Technology	4	Technical Course
ENGL 100	Composition	4	Arts & Sciences
MATH 125	Trigonometry	3	Arts & Sciences

Summer

Course #	Course Title	Credits	Function
CTLS 2851	Internship	3	Technical Course

Semester 3 - Year 2

Course #	Course Title	Credits	Function
CTLS 1800	Construction Contract Documents	3	Technical Course
CTLS 1805	Civil CAD	3	Technical Course
CTLS 2846	Hydrology and Hydraulics	3	Technical Course
CTLS 2830	Construction Estimating and Inspection	4	Technical Course

Semester 4 - Year 2

Course #	Course Title	Credits	Function
MNTC Elective	4-7 credits from MnTC Goal Area outside of 1 & 4 (4 credits req'd with Math 120 and 125, 7 credits req'd with Math 130)	4	Arts & Sciences
CTLS 2110	Statics and Strengths of Materials	3	Technical Course
CTLS 2825	Civil Design	4	Technical Course
CTLS 2835	Introduction to Land Surveying	3	Technical Course

Program Course List

Number	Title	Credits	Pre/Corequisites
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CTLS 1110	Basic AutoCAD	3	
CTLS 1800	Construction Contract Documents	3	ENGL 100
CTLS 1805	Civil CAD	3	CTLS 1110
CTLS 1810	Introduction to Surveying	4	Successful completion of MATH 0075 with a grade of C or above, or an Accuplacer Arithmetic score of 56 or above.
CTLS 1815	Surveying 2	4	CTLS 1810
CTLS 1820	Materials Technology	4	Successful completion of MATH 0075 with a grade of C or above, or an Accuplacer Arithmetic score of 56 or above.
CTLS 2110	Statics and Strengths of Materials	3	Math 125
CTLS 2825	Civil Design	4	CTLS 1110 and CTLS 1815
CTLS 2830	Construction Estimating and Inspection	4	CTLS 1110
CTLS 2835	Introduction to Land Surveying	3	CTLS 1110 and CTLS 1810
CTLS 2846	Hydrology and Hydraulics	3	CTLS 1110 and MATH 120
CTLS 2851	Internship	3	None
ENGL 100	Composition	4	Next-Generation Accuplacer Reading minimum score of 250 (Classic Accuplacer, minimum of 75) or completion of READ 0090 or EAP 0095 with a C (2.0) or higher.
GIS 2840	Introduction to Geographic Information Systems (GIS)	4	None
MATH 120	College Algebra	4	Completion of MATH 0085 with a grade of C or higher, or an Accuplacer test score of 56 in Elementary Algebra and a score of 50 in College Level Mathematics. MNTC 4: Mathematical/Logical Reasoning
MATH 125	Trigonometry	3	MATH 120 with a grade of C or better or a score of 63 or above on the College Level Mathematics portion of the Accuplacer test.