

## CTE Course Description and Standards Crosswalk

Course Information	
Course Name	Spatial Environmental Model Development
Course Number	81120
Number of High School Credits	.5
Sequence or CTEPS (You must first have the Sequence or CTEPS entered into the EED-CTE system.)	Geospatial Technology
Date of district Course Revision	November 2014
Career & Technical Student Organization (CTSO)	
CTSO embedded in this sequence	SkillsUSA and FFA
Occupational Standards	
Source of Occupational Standards	States Career Cluster Initiative (SCCI) 2008;
Names/Numbers of Occupational Standards	AGC, AGPE
Registration Information	
Course Description (brief paragraph – as shown in your student handbook or course list)	In this class, students will reach beyond their GIS foundation by learning and incorporating the skills of a spatial and 3D analyst. By learning the spatial and 3D analyst software, students will learn to model surfaces three dimensionally, which will give them a different perspective on their local environment. They will also get to use GPS and other remote sensing technology to collect real-time data in order to accurately survey their community. This is an intensive project-oriented class and is an invaluable tool for future GIS operators and innovators.
Instructional Topic Headings (please separate each heading by a semi-colon)	Applications in Remote Sensing; Applications in Surface Analysis; Application and Visualization of Geospatial Data; Applications in Geospatial Networks and Routing (Bloom's Taxonomy: Application, Analysis, Synthesis, Evaluation)
Summative Assessments and Standards	
Technical Skills Assessment (TSA)	No
Course addresses:	
New Alaska ELA and Math Standards	Yes
Alaska Cultural Standards	Yes
All Aspects of Industry (AAI)	Yes
Core Technical Standards	Yes
Employability Standards	Yes
Employability Standards	
Source of Employability Standards	State of Alaska
Tech Prep	
Current Tech Prep Articulation Agreement? (Y/N)	N
Date of Current Agreement	
Postsecondary Institution Name	

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Postsecondary Course Name	
Postsecondary Course Number	
# of Postsecondary Credits	

### Additional CTE Course Information

Author	
Course developed by	David Ralph, Dr. Stephen Brown; Revised by Don Berberich
Course adapted from	
Date of previous course revision	2008
Course Delivery Model	
Is the course brokered through another institution or agency? (Y/N)	N

Standards Alignment
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Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Students will be able to explain the importance of aerial and satellite photography.	AGC04.01.01	AG 1,2,6 AG-NR 1,2	SL.11-12.1,2, 4, 5 L.11-12.6 RST.11-2.3,4,7	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Presentation
Students will learn how remotely sensed data can be distorted in scale.	AGC10.02.01	AG 1,2,6 AG-NR 1,2	L.11-12.6	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Demonstration
Students will apply their knowledge of remote sensing to extract data from aerial and satellite photography.	AGC10.02.04	AG 1,2,6 AG-NR 1,2	SL.11-12.1,2, 4, 5 L.11-12.6 RST.11-2.3,4,7	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Project
Students will be able to explain the importance of orthorectification.	AGC10.02.04 AGPE01.01.02	AG 1,2,6 AG-NR 1,2	SL.11-12.1,2, 4, 5 L.11-12.6 RST.11-	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Presentation

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Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
			2.3,4,7					
Students will understand the importance of choosing the correct surface interpretation analysis.	AGC01.02.01,02	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Presentation
Students will apply their knowledge of scale to correctly measure map distances.	AGC10.02.04	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4, 10	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Demonstration
Students will understand the importance of 3D visualization.	AGC10.02.04	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4, 10	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Presentation
Students will create their own 3D visualization that uses Digital Elevation Model (DEM) data.	AGPE01.01.02	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Project
Students will use GIS to calculate the most efficient route through a network.	AGPE01.01.01,02	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4, 10	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Demonstration
Students will demonstrate the ability to use a GIS to explore geospatial networks.	AGPE01.02.01,02	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4, 10	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Demonstration
Students will create a network project and create a service area for a hypothetical business.	AGPE01.02.01	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4, 10	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology Planning	Project
Students will become knowledgeable of the importance of scale in remotely sensed data.	AGPE01.02.02	AG 1,2,6 AG-NR 1,2	L.11-12.6 RST.11-12.4, 10	Math Practices 4,5,6	B2,4	A2,5	Technical Skills Technology	Presentation

**Instructional Resources**

**List the major instructional resources used for this course: (websites, textbooks, essential equipment, reference materials, supplies)**

- Teacher Resource Pack
- ArcView 9.1 Spatial Analysis Schools and Library program School Building Lic (High Schools)
- ArcView 9.1 Network Analysis School and Library program School Building Lic (High Schools)
- ArcView 9.1 3D Analysis Schools and Library program School Building Lic (High Schools)

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Alaska Department of Education and Early Development

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Series 3 Book 1 - Introduction to Essential Tools in Surface Analysis  
Series 3 Book 2 - Introduction to Essential Tools in Visualization  
Series 3 Book 3 - Introduction to Essential Tools Geospatial Routing