PLANNING AND DESIGN TECHNOLOGIES, GRADUATE/ PROFESSIONAL CERTIFICATE

REQUIREMENTS

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- Total credits required: 12
- Include coursework from Introductory and Applications category (at least 6 credits) and from Quantitative and Scripting category (at least 6 credits)
- Complete at least 6 credits from the Introductory and Applications category and at least 6 credits from the Quantitative and Scripting category.
- At least 6 credits must be graduate-level coursework (i.e., courses numbered 700 or above, or 300 or above with the Grad 50% attribute)
- All courses must be taken for a letter grade (no pass/fail courses) and a B or better must be earned in order for the course to count towards the certificate requirements.

Code	Title	Credits
Introductory and Applications		**At least 6 credits**
CIV ENGR 392	Building Information Modeling (BIM)	3
DS/COMP SCI 579	Virtual Reality	3
ENVIR ST/ F&W ECOL/G L E/ GEOG/GEOSCI/ LAND ARC 371	Introduction to Environmental Remote Sensing	3
GEOG 370	Introduction to Cartography	4
GEOG/CIV ENGR/ ENVIR ST 377	An Introduction to Geographic Information Systems	4
GEOG 379	Geospatial Technologies: Drones, Sensors, and Applications	3
GEOG/ENVIR ST/ LAND ARC/ URB R PL 532	Applications of Geographic Information Systems in Planning	3
GEOG 578	GIS Applications	4
GEOG 579	GIS and Spatial Analysis	4
LAND ARC 311	Introduction to Design Frameworks and Spatial Technologies	2
LAND ARC 511	Geodesign Methods and Applications	3
LAND ARC/ CIV ENGR/ ENVIR ST 556	Remote Sensing Digital Image Processing	3
LAND ARC/ ENVIR ST/ SOIL SCI 695	Applications of Geographic Information Systems in Natural Resources	3
URB R PL 841	Urban Functions, Spatial Organization and Environmental Form (Will be renamed and numbered 533)	2-3
Quantitative and Scripting		**At least 6 credits**
COMP SCI 320	Data Science Programming II	4
GEOG 378	Introduction to Geocomputing	4
GEOG 560	Advanced Quantitative Methods	3
GEOG 573	Advanced Geocomputing and Geospatial Big Data Analytics	4
GEOG 574	Geospatial Database Design and Development	4
GEOG 575	Interactive Cartography & Geovisualization	4
GEOG 576	Geospatial Web and Mobile Programming	4
SOIL SCI 585	Using R for Soil and Environmental Sciences	3
STAT 303	R for Statistics I	1
STAT 304	R for Statistics II	1
STAT 305	R for Statistics III	1