

**TEXAS A&M UNIVERSITY-KINGSVILLE**  
**INSTITUTE FOR SUSTAINABLE ENERGY AND THE ENVIRONMENT**  
in partnership with the  
**LRGV TPDES STORMWATER TASK FORCE**

**LOW IMPACT DEVELOPMENT OUTREACH, EDUCATION, AND  
DEMONSTRATION PROGRAM**

**Announce REGISTRATION for a Three (3) Part, Short Course Series  
Geographic Information Systems (GIS) in Water Resources  
Continuing Education - Year 2014**

**Geographic Information Systems in Water Resources Short Course Series**

The three (3) part short course series will provide a student with the ability to input, manage, manipulate and output georeferenced information using digital computers, learn methods of layering geologic, geographic, meteorology, electromagnetic, biologic and political knowledge, and examine computer data structures including relational databases.

**Specific Student Learning Outcomes (SLOs)**

1. To learn the fundamental concepts of Geographic Information System (GIS)
2. To learn the practical applications of GIS using ArcGIS<sup>®</sup> software
3. To understand the vector and raster data models
4. To learn an apply geometric transformation and data manipulations using different datum and coordinate systems
5. To learn spatial data editing and analysis in 2D and 3D
6. Learn and apply the concepts of geocoding and dynamic segmentation
7. Learn how to write effectively a research paper applied to at least one of the disciplines in geosciences and/or environmental geosciences
8. Develop presentation skills to communicate scientific research results in geosciences and/or environmental geosciences
9. Evaluate the usefulness of available GIS data in geosciences and/or environmental geosciences to provide recommendations on how to improve and use the research data for the common good of society.

This short course series introduces the fundamental principles of GIS and the practical use of ArcGIS<sup>®</sup> software. The format of the course will include online notes, lecture presentations and practical tasks which will help the student to gain understanding of the theoretical concepts and the fundamentals skills of the ArcGIS<sup>®</sup> software.

**Part I: Introduction to Geographic Information Systems in Water Resources (\$895)**

Introduction to GIS is a 6 week short course that concentrates on the fundamentals of GIS and ArcGIS. The student will learn about coordinate systems, shape files, vector data, raster data, GIS data acquisition and geometric transformation techniques. The courses will be offered during three (3) time schedules:

Class 1: Meets for six (6) weeks on Mondays & Tuesdays, starting January 5, 2014. The last class meeting will be February 17, 2014. Class time is 530 pm – 900 pm.

Class 2: Meets for six (6) weeks on Thursday & Fridays, starting January 8, 2014. The last class meeting will be February 20, 2014. Class time is 830 am – 1200 pm.

**Part II: Geographic Information Systems in Water Resources - Data Management (\$795)**

GIS Data Management is a 6 week short course where a student learns about spatial data accuracy and quality, attribute data management, data display and cartography, data exploration, vector data analysis, and geocoding and dynamic segmentation. The courses will be offered during three (3) time schedules:

Class 1: Meets for six (6) weeks on Wednesdays & Fridays, starting December 17, 2014. The last class meeting will be January 30, 2015. Class time is 1230 pm – 4:30 pm.

Class 2: Meets for six (6) weeks on Mondays & Wednesdays, starting December 15, 2014. The last class meeting will be January 21, 2015. Class time is 8:30 pm – 12:00 pm.

Class 3: Meets for six (6) weeks on Wednesdays & Thursdays, starting December 17, 2014. The last class meeting will be February 5, 2015. Class time is 530-930 pm Thursdays and 830 am -1230 Saturdays.

### **Part III: Geographic Information Systems in Water Resources - Advance Topics (\$795)**

GIS Advance Topics is a 6 week short course where a student learns skills to perform Raster Data Analysis, Terrain Mapping and Analysis, viewshed and watershed analysis, spatial interpolation, least-cost path analysis and network analysis, and GIS models and modeling. The courses will be offered during three (3) time schedules:

Class 1: Meets for six (6) weeks on Wednesdays & Fridays, starting February 11, 2015. The last class meeting will be March 20, 2015. Class time is 1230 pm – 4:30 pm.

Class 2: Meets for six (6) weeks on Mondays & Wednesdays, starting February 2, 2015. The last class meeting will be March 11, 2015. Class time is 8:30 am – 12:30 pm.

Class 3: Meets for six (6) weeks on Wednesdays & Thursdays, starting February 18, 2015. The last class meeting will be March 26, 2015. Class time is 5:30 pm – 9 pm.

TAMU-Kingsville Citrus Research Center  
Rio Red Research, Technology, and Engineering Center (R<sup>3</sup>TEC)  
312 N. International Blvd.  
Weslaco, TX. 78599

Task Force members contact TAMU-Kingsville for special accommodations if needed. Students will receive a certificate of completion from the Institute of Sustainable Energy & the Environment, TAMU-Kingsville. For information please email us at [kujg2004@tamuk.edu](mailto:kujg2004@tamuk.edu).

#### Rates:

Part I: \$895.00

Part II: \$795.00

Part III: \$795.00

Task Force members and TAMUK EVEN: No Charge.

ASCE, TPWA, discounts are available.

Student Rates available.

Special Discount: Part I, and II: \$1450.00

Special Discount: Part I, II and III: \$1950.00

No group rates.

Lunch and Dinner on your own.

Course book will be provided during class and is available for purchase at additional cost.

Student manual will be provided.

No makeup sessions are provided.

Seating is limited and is on a first come first serve (paid) basis.

Registration will begin in July 7, 2014. Please go to on-line

[https://moneyconnect.tamuk.edu/C20209\\_ustores/web/store\\_main.jsp?STOREID=146](https://moneyconnect.tamuk.edu/C20209_ustores/web/store_main.jsp?STOREID=146) to register.

Please provide payment 10 calendar days prior to start date to avoid late registration fees, add \$75 after these dates. **Cancellation Policy:** Refunds must be requested in writing and the request must be received by TAMU-K no later than ten (10) calendar days prior to the event. No refunds after this date. No on-site registration. Please confirm availability, seating limited. No Group rates.