The Northwest Environmental Training Center presents:

# Introduction to ArcHydro - Managing and Mapping Hydrologic Data with ArcGIS

Course I.D. GIS-405
August 26 - 27, 2008, 8:30 A.M. to 5:00 P.M. (2 Days)
The Evergreen State College
Library Building - Computer Center (LIB-2429)
2700 Evergreen Parkway NW
Olympia, WA 98505

***Instructor:*** *Seshu Vaddey, Hydraulic Engineer, U.S. Army Corps of Engineers*

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**Description:** This two-day course provides an introduction to the ArcHydro data model and tools for managing water resources with ArcGIS. The course provides a brief introduction to relational database concepts and quickly transitions into using the ArcHydro data model to build a sample model of a river basin. In the process of building up the sample model participants will learn the basic principles of the ArcHydro data model and how the ArcHydro tools can be used to manage and work with hydrologic data. This course is intended for experienced ArcGIS users seeking an improved understanding of ArcHydro and modeling with water resource data.

ArcHydro is a geospatial and temporal data model for water resources that operates within ArcGIS. This new 'framework' allows water resources professionals to do a multitude of water resource modeling. At the heart of this framework is a relational database model that provides both flexibility and power to adapt the data model to the wide array of water resources challenges and issues. ArcHydro is a data structure that supports hydrologic simulation models, but it is not itself a simulation model. ArcHydro comes with a set of tools to develop your database.

**Course Topics:**

**Introduction**

**Overview of Relational Databases & Geodatabases**
- Relational Database Types
- Geodatabase Structure and Function
- Review of Data Formats

**Constructing Basin-Scale Models**
- Acquiring Hydrologic Data
- Developing and Populating a Geodatabase
- Building Geodatabase Relations
- Creating New Data Layers
- Understanding Spatial Reference in a Geodatabase

**Working with Hydrography Data Sets and Networks**
- National Hydrography Data Sets
- Building Geometric Networks
- Generating an ArcHydro Data Model

**Watershed and Stream Network Delineation**
- Terrain Modeling
- Watershed Delineation

**Time Series in ArcHydro**
- Retrieving and Displaying NWIS Data
- Viewing Time Series in GIS
- Working with NEXRAD Data

Class will begin each day at 8:30 A.M. and end at 5 P.M. Attendees will be given the opportunity to apply course concepts through numerous hands-on exercises.

**After completing this course, participants will be able to:**

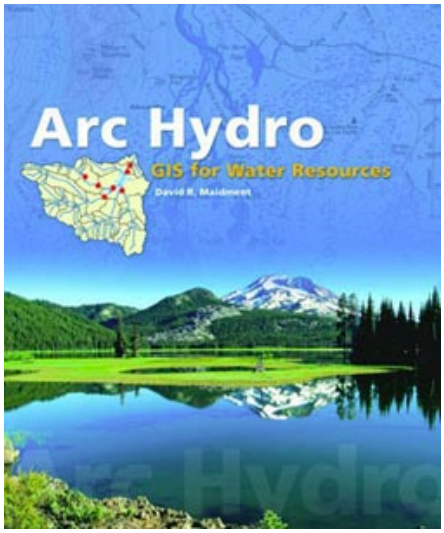
-Build stream network models with ArcHydro
-Manage hydrologic data with the ArcHydro tools
-Understand Core ArcHydro functionality
-Combine ArcHydro data structure and tools to address water resource issues

-Acquire hydrologic data from numerous public sources and import data into ArcHydro

**Prerequisites:** An existing knowledge of ArcGIS (Version 8 or higher). Experience or a working knowledge of spatial analyst and relational databases is helpful though not required for the class. The ArcEditor or ArcInfo license of ArcGIS is necessary to take full advantage ArcHydro's functionality.

**Education Level:** Introductory (some prerequisites required - see above.)

**Course Materials:** All participants will receive the 220 page text *ArcHydro: ArcGIS for Water Resources* by D. R. Maidment and a binder containing course proceedings, references, and resources.




This text presents ArcHydro concepts, components, and applications. It describes how to:
- Create hydro networks of rivers and streams
- Define drainage areas linked via relationships to a hydro network
- Represent channel shape using three-dimensional models
- Connect geospatial features to time series measurements recorded at gauging sites

The CD-ROM included with this book contains instructions to help you start using ArcHydro, plus a set of tools that populate the attributes of the features in the data framework, interconnect features in different data layers, support hydrologic analysis, and more.

**Continuing Education Units:** 1.3

**What to Bring:** Pen or pencil, coffee mug and water bottle (to reduce waste).

**Registration:** $595 ($495 reduced tuition available for Native American tribes; government employees; nonprofits; students; and NAEP, NEBC, NWAEP members). You may register via the link below or by calling the Northwest Environmental Training Center at 206-762-1976.

***Cancellation Policy:*** *Registration fees are fully refundable up to 30 days prior to the event and 50 percent refundable (or 100% credit) thereafter up to 3 business days prior to the event. No refunds are issued for cancellations occurring less than 3 business days before the start day. Course registration fees and cancellation policy are subject to change without notice.*

***Disability Accommodations:*** *To request disability accommodations, please contact us at info@nwetc.org or (206) 762-1976 at least 30 days prior to the event.*

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**Northwest Environmental Training Center**
A nonprofit 501(c)(3) program of the Northwest Environmental Education Council
650 S. Orcas Street, Suite 220, Seattle, Washington 98108
Phone: (206)762-1976, Fax: (206)762-1979
www.nwetc.org

**Olympia, Washington | ACCOMMODATIONS near The Evergreen State College**

## The Evergreen State College

(workshop location)
Library Building - Computer Center (LIB-2429)
2700 Evergreen Parkway NW
Olympia, Washington
(360) 867-6000
www.evergreen.edu

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|---|---|---|---|
| Phoenix Inn Suites - Olympia<br>415 Capitol Way N<br>Olympia, WA<br><br>www.phoenixinnsuites.com | (360) 570-0555 | Red Lion Hotel - Olympia<br>2300 Evergreen Park Dr SW<br>Olympia, WA<br><br>www.redlion.com | (360) 943-4000 |
| Lighthouse Bungalow<br>1215 E Bay Dr NE<br>Olympia, WA<br><br>www.lighthousebungalow.com | (360) 754-0389 | Quality Inn<br>1211 Quince Street SE<br>Olympia, WA<br><br>www.qualityinn.com | (360) 943-4710 |
| Ameritel Inn - Olympia<br>4520 Martin Way E<br>Olympia, WA<br><br>www.ameritelinns.com | (360) 459-8866 | Clarion Olympia Hotel<br>900 Capitol Way South<br>Olympia, WA<br><br>www.clarionolympia.com | (360) 352-7200 |
| Quality Inn & Suites<br>120 College Street SE<br>Lacey, WA<br><br>www.qualityinn.com | (360) 493-1991 | Comfort Inn of Lacey<br>4700 Park Center Ave NE<br>Lacey, WA<br><br>www.comfortinn.choicehotels.com | (360) 456-6300 |

**Note:** There are no hotels within walking distance of The Evergreen State College, however, there is a good public transportation system from downtown to campus that leaves every 15 minutes on week days. The Governor Hotel, the Clarion, and the Phoenix Inn are all located within walking distance of the downtown transit center, and a full day bus pass costs $1.50. For more information on Intercity Transit,visit **http://www.intercitytransit.com.**

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**Directions to:**

## The Evergreen State College

Library Building - Computer Center (LIB-2429)
2700 Evergreen Parkway NW
Olympia, WA 98505
(360) 867-6298
www.evergreen.edu

### From Points North, South and East:

1. Take Interstate 5 to Olympia.
2. Turn onto Highway 101 at Exit 104.
3. Go west on 101 North for three miles.
4. Take The Evergreen State College exit (on the right).
5. Go two miles north on the Evergreen Parkway to the main campus entrance (at the roundabout).

### From Points West:

1. Go east on 101 North toward Olympia.
2. Take the Aberdeen/Shelton exit (on the right).
3. Turn left at the stop sign onto 2nd Ave SW, which becomes Mud Bay Road.
4. Follow the road's curve to the right and continue up the hill.
5. At the hill's top, just beyond the overpass, turn left at The Evergreen State College exit.
6. Merge onto Evergreen Parkway.
7. Go two miles north to the main campus entrance (at the roundabout).

### The Evergreen State College Campus

Visit **http://www.evergreen.edu/tour/gethere.htm** for more visitor information on The Evergreen State College's website.

### Mass Transit in Olympia

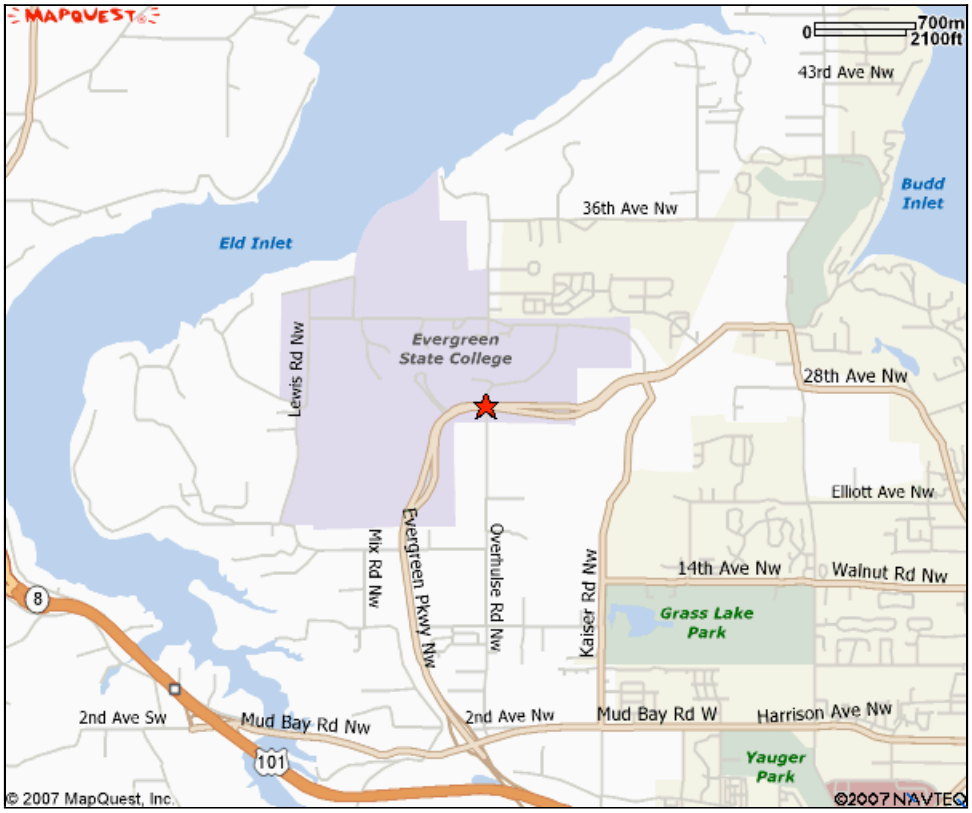
Intercity Transit : **http://www.intercitytransit.com**

### Parking at Evergreen

A parking pass is needed for each day you attend. The course is in the Computer Center which is located in the Library Building in the main campus core. It is the building with the tall clock tower in front of it.You may park in either B or C lots (C is slightly closer). The passes cost $1.25 for each day and are not valid in the metered spaces, registered carpool spaces, nor in timed areas for longer than the posted time limit. Passes may be obtained at the Parking Booth at the main entrance to campus. The booth is open from 7 a.m. to 9 p.m. Monday through Friday.You may purchase your passes all at one time if you be sure to inform the booth attendant what dates you'd like to have stamped on the predated passes or even purchase the first two, and wait until the third day to purchase the last one in case you don't attend that day. The Parking Booth accepts cash and checks as methods of payment. Be sure to place the correctly dated parking pass on your vehicle's dash so that it can be seen from outside the car.

**REGIONAL MAP:**

**CITY MAP:**



**STREET MAP:**

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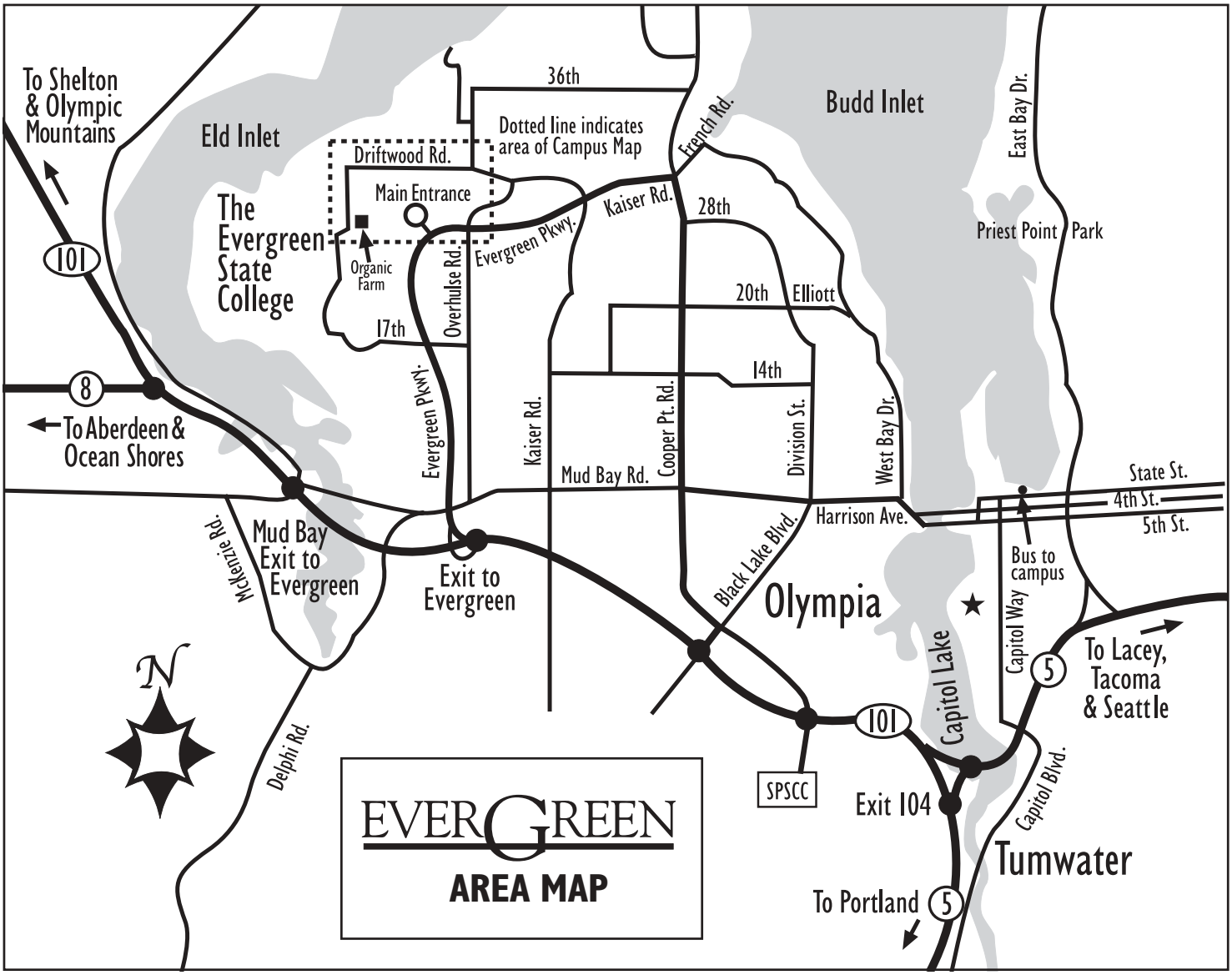


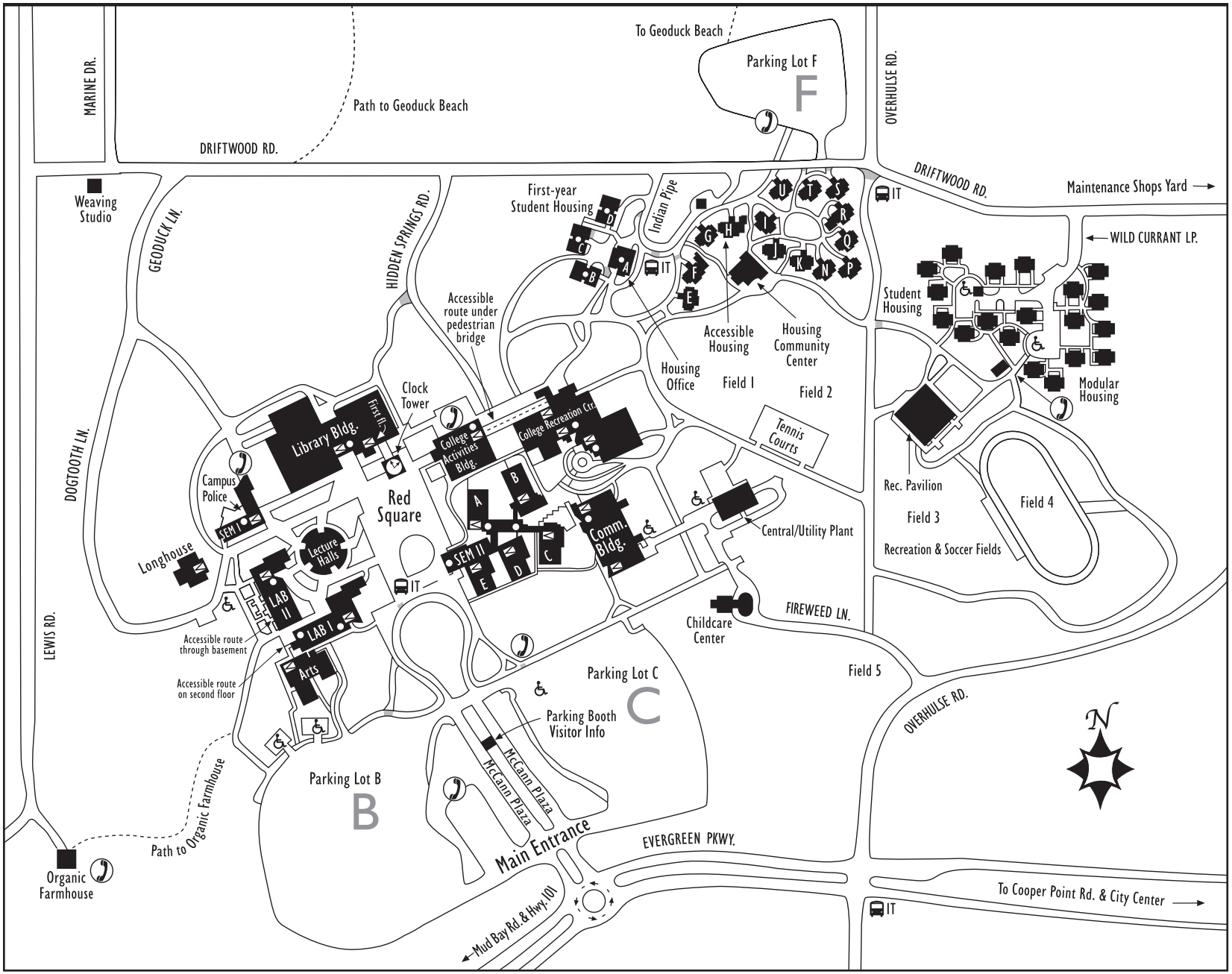

# The Evergreen State College

## How to Get Here

Whether you are coming from the north (Seattle, SeaTac Airport) or south (Portland): Take I-5 to Exit 104, and follow Highway 101 to the third exit (The Evergreen State College). Travel two miles on the Evergreen Parkway to the main campus entrance on your left. Please be sure to stop by the parking booth for a permit. We recommend that you use Parking Lot C.

## Campus and Vicinity

The Evergreen State College in Olympia is an hour's drive from the Seattle-Tacoma (SeaTac) airport. The area is served by the Capital Aeroporter, and the Greyhound Bus Company stops in Olympia near the state capital. Many Washington scenic areas and urban points of interest are easily accessible from here.




EVERGREEN

## CAMPUS MAP KEY

Arts . . . . Arts Annex
CAB . . . . College Activities Bldg.
COM. . . . Communications
CRC . . . . Recreation Center
IT. . . . . IT Bus Stop
LAB I . . . Arts and Sciences
LAB II . . Arts and Sciences
LC . . . . . Longhouse
LH . . . . . Lecture Halls
LIB . . . . Library
SEM I. . . Seminar I
SEM II . . Seminar II

- Automatic Door
- Emergency Phone
- Accessible Parking
- IT Bus Stop
- Elevator
- Curb Cuts

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2700 Evergreen Parkway, NW
Olympia, WA 98505
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[ref: 05admissmap3.indd]

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Ph: (206)762-1976, Fax: (206)762-1979
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## REGISTRATION FORM

**Name:**_____ **Today's Date:** _____

**Agency/Organization:**_____

**Street Address:**_____

**Street Address (cont'd):**_____

**City:**_____ **State:**_____ **Zip:**_____

**Phone:**_____ **Fax:**_____

**Email:**_____ **Title:**_____

**Introduction to ArcHydro** **$**_____

Course ID: GIS-405, August 26 - 27, 2008
The Evergreen State College, Computer Center – Library Building (LIB-2429)
2700 Evergreen Parkway NW, Olympia, WA
**Registration: $595 ($495*)**

*Reduced rates for Native American Tribes; nonprofits; government; students; and NEBC, NAEP and NWAEP members.

**Payment Method: Check ☐ PO ☐ Credit Card (Visa/Mastercard) ☐ Total: $**_____

**Credit Card or PO #:**_____ **Exp:**_____

**Notes:** Please make checks payable to Northwest Environmental Training Center.

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