

# Water Resources Concentration

## Bachelor of Science Degree with a major in Geography Effective Fall 2017

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**Major Faculty:** Dr. Richard Dixon, Dr. Richard Earl, Dr. Jason Julian, Dr. Kimberly Meitzen

For all faculty office locations, phone numbers, e-mail addresses, and office hours, as well as information about Geography Department people, programs, courses and activities, check the Texas State Geography Web Site at [www.geo.txstate.edu](http://www.geo.txstate.edu) and bulletin boards on ELA 1<sup>st</sup> and 3<sup>rd</sup> floors.

**Major Concentration Description:** The Water Resources concentration provides a focused study of the physical, chemical, social, political, and economic factors of water resources from the geographic perspective. As water resources become ever more critical to the nation, and in particular Texas and the Southwest Borderlands, this degree program addresses the increasing need for professionals in this crucial field. Graduates are highly sought after by government agencies, from local, state to federal, industries that have large water demands, agricultural interests and private consulting firms that specialize in water resource issues. The Lower Colorado River Authority, the Guadalupe-Blanco River Authority, the Edwards Aquifer Authority, and the San Antonio Water System all employ graduates of the program. Check <http://www.geo.txstate.edu> for more information.

### Degree/Major Requirements

1. Students majoring in Water Studies complete the Bachelor of Science (B.S.) degree.
2. The B.S. degree requires a minimum of 37 semester hours of geography.
3. The B.S. degree requires at least a 2.5 GPA for geography courses attempted at Texas State University and at least a 2.25 GPA for all courses taken at Texas State University.
4. Students must make a grade of "C" or better in all Geography courses that are to be counted for credit toward their major.
5. The degree requires a minor area of study with a minimum of 18 semester hours.
6. Texas State requires a minimum of 120 semester hours of coursework to graduate including: a) General Education Core requirements; b) major requirements; c) minor requirements; and d) additional elective courses selected from disciplines other than major or minor.
7. At least 36 semester hours must be advanced (3000 – 4000) level courses.
8. At least 9 semester hours must be writing intensive (WI).

**Minor Requirements:** Minor may be any approved Texas State minor. Biology, Chemistry, Geology, Political Science, Anthropology, Business Administration, Plant and Soil Science or Nature and Heritage Tourism minors are highly recommended to complement your Geography Major in Water Studies. Other minors may be appropriate depending upon your interests and career goals. Discuss possible options with your advisor.

**Optional Certificates:** Certificates are designed to enhance your employability and offer you a firm foundation in a particular discipline that is complementary to your major field of study. The courses that you complete for a certificate may count toward your major or minor depending on your field of study. If you are interested in pursuing a certificate, please see the Undergraduate Program Staff Administrator in ELA room 130.

GIS - Geographic Information Science – 20 hours  
Environmental Interpretation - 16 hours  
Location Analysis - 16 to 18 hours

# Water Resources Course Checklist

**Bachelor of Science: 37 Semester Hours Minimum**

**STUDENTS MUST MAKE A GRADE OF "C" OR BETTER IN ALL GEOGRAPHY COURSES  
TO RECEIVE CREDIT TOWARD THEIR MAJOR.**

**REQUIRED** of all Geography majors: **(14 hours):**

- \_\_\_\_\_ 1309 Introduction to Cultural Geography **or** 1310 World Geography
- \_\_\_\_\_ 2410 Introduction to Physical Geography (Prerequisite: MATH 1315 or above [excluding MATH 1316] with a grade of "C" or higher.)
- \_\_\_\_\_ 2426 Fundamentals of GIS (Prerequisite: MATH 1315 or above [excluding MATH 1316] with a grade of "C" or higher.)
- \_\_\_\_\_ 3301 Research Methods in Geography (Prerequisite: MATH 1315 or above [excluding MATH 1316] with a grade of "C" or higher.)

**CORE:** The following courses are required **(16 hours):**

- \_\_\_\_\_ 3305 Climatology (Prerequisite: GEO 1305 or GEO 2410 with a minimum grade of "C" or higher.)
- \_\_\_\_\_ 3434 Water Resources (Prerequisite: GEO 2410 or CHEM 1141 & 1341 with a grade of "C" or higher.)
- \_\_\_\_\_ 4325 Fluvial Processes - **Fall Only** (Prerequisite: GEO 3425 or GEO 3434 with a grade of "C" or higher.)
- \_\_\_\_\_ 4334 Groundwater Resources – **Fall Only** (Prerequisite: GEO 3434 with a grade of "C" or higher.)
- \_\_\_\_\_ **OR** GEOL 4421 Hydrogeology – **Spring Only (WI)** (Prerequisite: GEOL 1420 and MATH 1317, 2321, or 2417 with a grade of "C" or higher.)
- \_\_\_\_\_ 4341 Water Policy – **Fall Only** (Prerequisite: GEO 3434 with a grade of "C" or higher.)

**CAPSTONE:** Required in final semester **(3 hours)**

- \_\_\_\_\_ 4314 River Basin Management – **Spring Only (WI)** (Prerequisite: GEO 3434 or GEO 4325 with a grade of "C" or higher.)

**TECHNIQUES:** You must select at **least one** of the following courses **(4 hours)** (more are recommended):

- \_\_\_\_\_ 3416 Principles of Remote Sensing (Prerequisite: GEO 2410 with a grade of "C" or higher.)
- \_\_\_\_\_ 3411 Maps and Mapmaking (Prerequisite: GEO 2426 with a grade of "C" or higher.)
- \_\_\_\_\_ 3426 Advanced GIS (Prerequisite: GEO 2426 and GEO 3301 with a grade of "C" or higher.)
- \_\_\_\_\_ 4430 Field Methods **(WI)**. (Prerequisites: GEO 2410 and GEO 3301 with a grade of "C" or higher.)

**OPTIONAL SUGGESTED GEOGRAPHY ELECTIVES:**

- \_\_\_\_\_ 1305 Meteorology
- \_\_\_\_\_ 2310 Introduction to Environmental Geography
- \_\_\_\_\_ 3303 Economic Geography
- \_\_\_\_\_ 3313 Natural Resource Use and Management (Prerequisite: GEO 2410 with a grade of "C" or higher.)
- \_\_\_\_\_ 3425 Geomorphology (Prerequisite: GEO 2410 or GEOL 1410 with a grade of "C" or higher.)
- \_\_\_\_\_ 4310 Regional Field Studies **(WI)**. (check with advisor)
- \_\_\_\_\_ 4316 Landscape Biogeography – **Spring Only** (Prerequisite: GEO 2410 with a grade of "C" or higher.)
- \_\_\_\_\_ 4339 Environmental Hazards and Land Management (Prerequisite: GEO 2410 with a grade of "C" or higher.)
- \_\_\_\_\_ 4380 Internship in Geography
- \_\_\_\_\_ Regional Geography Electives **(One course may be selected as an approved elective):**
  - GEO 3307 Europe, GEO 3308 Latin America, GEO 3309 US & Canada **(WI)**, GEO 3328 N. Africa & Middle East, GEO 3329 Texas, GEO 3332 S & SE Asia **(WI)**, GEO 3333 China and Japan **(WI)**, GEO 4306 Southwest US, GEO 4328 Russian Realm **(WI)**.

**Consider joining one of Texas State Geography's Student Organizations.  
Check bulletin board across the hall from ELA 139 for more information.**