

**UNDERGRADUATE PREREQUISITE COURSES**

Complete all by the end of Year 1

- |  |  |   |  |
|--|--|---|--|
| <input type="checkbox"/> Physical Geology            | <input type="checkbox"/> College Chemistry 1 Inorganic | <input type="checkbox"/> Calculus 2                   | <input type="checkbox"/> Fluid Mechanics/Hydraulics                          |
| <input type="checkbox"/> College Physics 1 Mechanics | <input type="checkbox"/> College Chemistry 2 Inorganic | <input type="checkbox"/> Vector Calculus              | <input type="checkbox"/> Statistics for Phys Sci/ Engr or Probability Theory |
| <input type="checkbox"/> College Physics 2 Other     | <input type="checkbox"/> Calculus 1                    | <input type="checkbox"/> Intro Differential Equations |  |

CODING: All graduate students are expected to have or to acquire capability for basic coding/computer programming (e.g. Python, MATLAB, Fortran, C++). Semester courses or short courses offered by various departments and the University Information Technology center are available. No graduate credit is granted for this work.

**MASTER'S CORE COURSES**

Complete 12 units

Semester of Offering: *f* Fall, *s* Spring, *sum* Summer, *?* as needed

- |   |  |  |  |
|---|--|--|--|
| <input type="checkbox"/> HWRS 518 <i>f</i> Fundamentals of Subsurface Hydrology <b>Required</b> | <input type="checkbox"/> HWRS 519 <i>s</i> Fundamentals of Surface Hydrology <b>Required</b> | <input type="checkbox"/> HWRS 517A <i>f</i> Fundamentals of Water Quality* | <input type="checkbox"/> HWRS 528 <i>s</i> Fundamentals: A Systems Approach Water Res* |
|---|--|--|--|

\*Optional: You may complete **one** of these Non-Primary Faculty Courses in lieu of 517A or 528 (but not both):

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> AREC/HWRS 575 <i>f</i> Economics Water, Environmental Markets/Policies <b>OR</b> | <input type="checkbox"/> AREC/HWRS 576 <i>s</i> Natural Res Law+Economics <b>OR</b> | <input type="checkbox"/> LAW/HWRS 641 <i>s</i> Water Law |
|---|---|--|

**PRIMARY FACULTY ADVANCED ELECTIVE COURSES**

**THESIS OPTION** Complete 12 units (minimum 9 Primary\*\*) |

**NON-THESIS OPTION** Complete 15 units (minimum 12 Primary\*\*) |

- |  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> HWRS 503 <i>f</i> Subsurf Fluid Dyna  | <input type="checkbox"/> HWRS 531 <i>f</i> Hydrogeology       | <input type="checkbox"/> HWRS 555 <i>s</i> Intro Remote Sens   | <input type="checkbox"/> HWRS 501 <i>f</i> Tools for Data Ha. |
| <input type="checkbox"/> HWRS 504 <i>s</i> Num Meth Subsurf    | <input type="checkbox"/> HWRS 532 <i>s</i> Envir Hydrogeo Lab | <input type="checkbox"/> HWRS 573 <i>f</i> Hydr WR Mgmt        | <input type="checkbox"/> HWRS 630 <i>f</i> Adv Catchment Hyd  |
| <input type="checkbox"/> HWRS 505 <i>f</i> Vadose Zone Hydr    | <input type="checkbox"/> HWRS 535 <i>s</i> Adv Subsurface Hyd | <input type="checkbox"/> HWRS 580 <i>s</i> Isotope Tracers Hyd | <input type="checkbox"/> HWRS 642 <i>s</i> Anlys Hydr Systems |
| <input type="checkbox"/> HWRS 516 <i>f</i> Hydr Transport Proc | <input type="checkbox"/> HWRS 543A <i>f</i> Risk Assessment   | <input type="checkbox"/> HWRS 582 <i>s</i> Groundwater Mod     | <input type="checkbox"/> HWRS 645 <i>s</i> Stochastic MthSubs |
| <input type="checkbox"/> HWRS 524 <i>s</i> Hydroclimatology    | <input type="checkbox"/> HWRS 549 <i>f</i> Statistical Hydro  | <input type="checkbox"/> HWRS 596G <i>f</i> Water-Rock-Micro   |   |
|  | <input type="checkbox"/> GEOS 553 <i>s</i> Glacial Quat Geol  |  |   |

\*\*Optional: You may complete **one** course from the list of Non-Primary Faculty Courses below (pre-approved, no petition required)

- |  |   |   |  |
|--|---|---|--|
| <input type="checkbox"/> AREC 577            | <input type="checkbox"/> ENV5 566, 596B, 696M   | <input type="checkbox"/> PA 581         | If a course number is not on this list, it's not pre-approved! |
| <input type="checkbox"/> ATMO 529, 558, 595C | <input type="checkbox"/> LAW 596B, LAW 606, 641 | <input type="checkbox"/> WSM 696M, 696Q |  |

**FIELD METHODS/FIELD SYNTHESIS**

Complete 3 units total in the same calendar year

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|---|---|
| <input type="checkbox"/> HWRS 513A <i>s</i> Field Methods/2     | <input type="checkbox"/> Prior experience or education may be used to satisfy this requirement, but you must file a petition for approval; however, <b>no academic credit</b> can be awarded. See the <a href="#">Master of Science HWRS Program Guide</a> for details. |
| <input type="checkbox"/> HWRS 513B <i>sum</i> Field Synthesis/1 |   |

**THESIS OPTION: HWRS 910**

**NON-THESIS OPTION: HWRS 909**

- |   |   |
|---|---|
| <input type="checkbox"/> HWRS 910 THESIS (4 units) <b>include only 4 units</b> in Plan of Study | <input type="checkbox"/> HWRS 909 REPORT (1 unit) <b>include only 1 unit</b> in Plan of Study |
|---|---|

**PROFESSIONAL DEVELOPMENT**

HWRS 595A *Current Topics in Hydrology & Atmospheric Sciences*, the Weekly Colloquium - All Graduate Students (MS & PHD) must enroll for at least one semester (1-unit maximum per semester) but **do not include** in Plan of Study

Presentation Requirement - **Make an oral or poster presentation** of Master's Thesis research or Master's Report project at an approved conference (e.g. El Día, AGU, AHS, AMS) – Submit email with details to DGS-H (see [Master's HWRS Program Guide](#))

## ACADEMIC PROGRESS BENCHMARKS + FORMAL EXAM

See [Master of Science HWRS Program Guide](#) for details

### Year 1

Before/Beginning of Year 1:

- Meet with Director of Graduate Studies-Hydrology (DGS) to discuss undergraduate course deficiencies (if any)
- Make a plan to complete specific courses for the first two semesters
- Submit the **Responsible Conduct of Research Form** in GradPath
- (optional) Discuss potential transfer course work with the DGS and submit the **Transfer Course Form** in GradPath

End of Year 1 (end of second semester in residence):

- Complete undergraduate course deficiencies by end of Year 1
- Meet with the DGS and make a plan to complete degree requirements
- Submit the **Master's Plan of Study Form** in GradPath

### Year 2

Before/Beginning of Year 2:

- Meet with faculty advisor to discuss the topic selected for the Master's Thesis or Master's Report
- Make a plan that includes a timeframe for completion: 1) define topic and scope of work by \*date\*, 2) write abstract and outline by \*date\*, 3) do the work—field, lab, computer programming, etc.—with specific start and end dates in mind \*dates\*, and 4) start writing about the work by \*date\*

Beginning of *Final* Semester:

- Meet with faculty advisor to discuss timing of the final exam
- Define committee membership and reserve a room for the exam
- Submit the **Master's Committee Appointment Form** in GradPath

End of *Final* Semester:

- Complete your work and writing
- Submit your abstract to the program coordinator and ask her to announce the date/time/location of your public presentation (if any) for the exam
- Ask the program coordinator to prepare an Exam Worksheet and Change of Grade form for your faculty advisor to complete at the exam
- Ask the graduate coordinator to submit the **Master's Completion Confirmation Form** on your behalf
- Contact the DGS about **Exit Interview** (may be able to do online)
- Return your **KEYS** (see Santander) and tidy office space!

## MASTER OF SCIENCE GRAD PATH FORMS

Once matriculated into a degree program, **Continuous Enrollment** is required during the Academic Year, Fall Semester and Spring Semester. Summer enrollment is *not* required except when enrolled for a course. Degree requirements should be completed within **6 years** (from earliest course) to ensure currency of knowledge. See Master of Science HWRS Program Guide for details.

### Required Forms

*Login to **Student Access** to complete GradPath forms*

### Responsible Conduct of Research (RCR) Statement

- All students must complete this form. Additionally, an RCR Workshop is required for any student funded by an NSF, NIH, or NIFA grant

### Master's Plan of Study (minimum 31 units)

- Submit Master's Plan of Study after second semester in residence
- **Thesis** students: Include **27** course units, **4** 910-thesis units
  - **Do not include** HWRS 595A Weekly Colloquium
- **Non-Thesis** students: Include **30** course units, **1** 909-report unit
  - **Do not include** HWRS 595A Weekly Colloquium
- After completing all required course work, you are expected to complete the Master's Thesis or Report within 1 year

### Master's Committee Appointment

- Get approval from department first; request special member, if any, with Program Coordinator

### Master's Completion Confirmation

- Department will submit form on your behalf after you have passed the Master's Final Oral Exam
  - **Thesis Students Only:** Form processed after your thesis manuscript has been submitted for digital archive by ProQuest/UMI

### Other Forms

#### Transfer Credit

- A maximum of 6 graduate units (if approved by DGS) may be transferred from another university for use in the Plan of Study

#### Petition (use for a variety of reasons)

- Examples: Petition to take a leave of absence (temporarily suspends continuous enrollment) or extend time to complete a course