

**THE GRADUATE CERTIFICATE IN  
ENVIRONMENTAL HAZARD MANAGEMENT**

**Offered by**

**The College of Architecture  
and  
The Hazard Reduction and Recovery Center  
Texas A&M University**



# **THE GRADUATE CERTIFICATE IN ENVIRONMENTAL HAZARD MANAGEMENT**

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## **PART I: Program Description**

### **Purpose**

Environmental Hazard Management (EHM) is a cross-disciplinary program that has been designed to provide students with an understanding of the interrelationship between the built environment, social systems, and extreme environmental events. These events may be natural, technological, or even terror related events. The EHM Program consists of a series of courses that are open to students from any graduate degree program at Texas A&M University. The EHM Certificate has four tracks from which a student may choose to specialize. These tracks include: Hazard Mitigation Planning, Emergency Management Planning, Environmental Hazards Management Planning, and Disaster Health Systems Planning.

### **The EHM Certificate Council**

The EHM Certificate Council is comprised of at least three (3) faculty who are expert in the field and are appointed by the Dean of the College of Architecture to advise on all matters relating to the program.

The Graduate Advisory Committee for each student, with the oversight of degree coordinators, department heads, and the Office of Graduate Studies, is responsible for the academic program of the student. However, the EHM Certificate Council is charged with ensuring that students recommended for the certificate have met content standards.

The program can be accomplished within the minimum number of hours required for any of the graduate degrees offered within the College of Architecture. However, the fit with programs in other colleges will need to be assessed on a case-by-case basis. Moreover, the student's Graduate Advisory Committee might require, or the student may choose to take, additional hours not on the degree plan in order to meet the requirements for the certificate.

### **The EHM Certificate**

The EHM Certificate Program is to be awarded after completion of a prescribed program of study, and must be signed by the head of the student's academic department and the dean of the college. The certificate contains the seal of the university and appropriate text. It will normally be presented at college ceremonies prior to the official university graduation exercises.

## **PART II: Criteria and Course Requirements**

The College of Architecture will award the EHM Certificate to students meeting the criteria listed below:

1. All students should declare an intent to seek the EHM Certificate at the time of filing a Degree Plan, but in any event must submit an application as soon as possible after filing a Degree Plan. Application forms are available from the EHM Program Office, which is located in the Hazard Reduction & Recovery Center, and also are available in the Graduate Programs Office of the COA.
2. The student must complete a minimum of fifteen (15) credit hours of course work in EHM. The courses must be applicable toward a graduate degree in the College of Architecture, but may not necessarily be included on the student's degree plan. Courses may be taken from the following four tracks:

#### *Hazard mitigation planning*

- PLAN 649: *Organizational and Community Response to Crises and Disasters*,
- ARCH 622: *Sustainable Building Design Technology*,
- PLAN 647: *Disaster Recovery and Hazard Mitigation*, and
- PLAN 656: *Housing and Community Facilities*.

#### *Emergency Management Planning*

- PLAN 649: *Organizational and Community Response to Crises and Disasters*,
- PLAN 650: *Disaster Response Planning*,
- PLAN 647: *Disaster Recovery and Hazard Mitigation*, and
- PLAN 616: *Analyzing Risk/Hazard and Public Policy*.

#### *Environmental Hazards Management Planning*

- PLAN 647: *Disaster Recovery and Hazard Mitigation*, and
- PLAN 616: *Analyzing Risk/Hazard and Public Policy*

- PLAN 641: *Environmental Planning*
- PLAN 651: Coastal and Marine Protected Areas

#### *Disaster Health Systems Planning*

- PLAN 649: *Organizational and Community Response to Crises and Disasters*,
- PLAN 650: *Disaster Response Planning*,
- PLAN 631: Health Systems Planning and Policy
- PLAN 634: Environmental Health Policy and Planning

At least three (3) credit hours of course work with EHM content must be from outside the student's major department.

3. The student must complete a professional study, thesis, or dissertation with an EHM focus approved by the EHM Certificate Advisory Council if this is required by the student's major program. Up to three credits taken in support of the professional study, thesis, or dissertation can count toward the 15 hour requirement in EHM course work.
4. On completion of all the requirements for the graduate degree, the student will receive an EHM Certificate signed by the Dean and the appropriate Department Head.

The student's Graduate Advisory Committee remains the primary body for recommending the degree plan content. Courses required or intended for the EHM Certificate may be used in the degree plan with the concurrence of the Graduate Advisory Committee. Students also may add courses beyond their normal degree requirements in order to fulfill the EHM Certificate requirements. Students are encouraged to consult with their Graduate Advisory Committee *and* a member of the EHM Certificate Council as they develop their degree plans.

### **PART III-A: Approved Courses for the Certificate**

The EHM Certificate Council lists pre-approved courses, inside and outside the COA, that meet the requirements for EHM content. The list, together with associated syllabi and names of instructors, will be on file in the EHM Program Office, which is located in the Hazard Reduction & Recovery Center.

Students who identify a course not on the list of pre-approved courses, or who wish to transfer courses from another institution, must submit a written statement that clearly describes how a course lacking prior approval is related to the student's EHM course of study. This written statement, supported by a copy of the course syllabus, will be reviewed by the EHM Certificate Council. Where a course has a generic topic (for example a design studio in architecture, or a capstone studio course in land development or planning), the written statement of the EHM content and the student's specific role in working with that content must be co-signed by the course instructor. Courses not acceptable for use toward a graduate degree at Texas A&M University will not be approved under any circumstances. The EHM Certificate Council may seek input from faculty concerning course content and/or the specific contribution of a student in a course with team activity.

Where the EHM Certificate Council makes a negative finding as to applicability of a course, or a final project, the finding will be made in writing with copies to the student, student file, and chair of the student's Graduate Advisory Committee. Appeals against findings of the EHM Certificate Council will be made to the academic dean of the College of Architecture.

### **PART III-B: Program Faculty**

The following Faculty Fellows and staff of the Hazard Reduction & Recovery Center have special expertise appropriate to Environmental Hazard Management and should be considered for inclusion on Guidance Committees:

- Sherry Bame, Landscape Architecture & Urban Planning
- David Bilbo, Construction Science
- Samuel Brody, Landscape Architecture & Urban Planning
- John Giardino, Geography
- Charles Graham, Construction Science
- Michael Lindell, Landscape Architecture & Urban Planning

John M. Nichols, Construction Science•

- Carla Prater, Landscape Architecture & Urban Planning
- Walter Gillis Peacock, Landscape Architecture & Urban Planning
- Jon Rodiek, Landscape Architecture & Urban Planning
- George Rogers, Landscape Architecture & Urban Planning
- Norris Stubbs, Civil Engineering
- Dan Sui, Geography
- Dennis Wenger, Landscape Architecture & Urban Planning
- Douglas Wunneburger, Landscape Architecture & Urban Planning

### **PART III-C: Other Approved Courses in the College of Architecture**

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PLAN 614	<i>Planning and Technological Change</i>
PLAN 625:	<i>Geographical Information Systems in Landscape and Urban Planning</i>
PLAN 626:	<i>Advanced GIS in Landscape Architecture and Urban Planning</i>
PLAN 641	<i>Problems of Environmental Planning Administration</i>

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### **PART III-D: Approved Courses Outside the College of Architecture**

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FRSC 651	<i>Geographic Information Systems</i>
FRSC 652	<i>Advanced Topics in Geographic Information Systems</i>
GEOG 619	<i>Human Impact on the Environment</i>
GEOG 660	<i>GIS-Based Spatial Analysis and Modeling</i>
GEOG 665	<i>GIS-Based Spatial Analysis and Modeling</i>
GEOG 676	<i>Natural Hazards</i>
GEOG 696	<i>Geomorphology and Remote Sensing</i>
RENK 664	<i>Coastal Zone Management</i>
SOC I 620	<i>Human Ecology</i>
CHEN 655	<i>Process Safety Engineering</i>
CHEN 657	<i>Environmental Risk Analysis</i>
CVEN 603	<i>Environmental Management</i>
CVEN 682	<i>Environmental Remediation of Contaminated Sites</i>
JOUR 634	<i>Risk and Crisis Reporting</i>
JOUR 640	<i>Science and Technology Broadcasting</i>
LDEV 673	<i>International Development Planning</i>
RLEM 616	<i>Fire and Natural Resources Management</i>
SENG 672	<i>Safety Engineering in Facilities Design</i>
SENG 674	<i>System Safety Engineering</i>
SENG 677	<i>Fire Protection Engineering</i>
VAPH 632	<i>Public Health Concepts</i>

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Note: Other courses may be identified over time. In all cases, their inclusion in the EHM program will be based on an assessment of the EHM content. Students are encouraged to seek advice and approval *before* adding such courses onto a degree plan with the intent of using them for the EHM Certificate.

### PART III-E: Model Degree Plan for Master of Urban Planning Students

Fall Semester I	PLAN 640	Law & Legislation Related to Planning	3
	PLAN 661	Information & Communication	3
	PLAN 665	Plan Making	3
	<i>PLAN 649</i>	<i>Community &amp; Organizational Response to Hazards</i>	<u>3</u>
			12
Spring Semester I	PLAN 613	Planning Methods & Techniques	3
	PLAN 658	Plan Implementation	3
	PLAN 664	Planning Theory & History	3
	<i>PLAN 650</i>	<i>Disaster Response Planning</i>	<u>3</u>
			12
Summer		Professional Internship	2
Fall Semester II	PLAN 662	Applied Planning I	3
	<i>PLAN 647</i>	<i>Disaster Recovery and Hazard Mitigation</i>	3
	PLAN Elective		3
	PLAN Elective		<u>3</u>
			12
Spring Semester II	PLAN 654	Planning Administration and Management	1
	PLAN 685	Problems: Professional Synthesis Paper	2
	PLAN 663	Applied Planning II	3
	PLAN 681	Seminar	1
	PLAN Elective		<u>3</u>
			10
Minimum Hours Standard Degree			<b>48</b>

\* EHM classes in *italics*

### PART III-F: Model Degree Plan for Master of Construction Science Students

Fall Semester I	COSC 681	Seminar	1
	COSC 690	Construction Science Research	3
	STAT 651	Research Statistics I	3
	<i>PLAN 647</i>	<i>Disaster Recovery and Hazard Mitigation</i>	<u>3</u>
			10
Spring Semester I	COSC 630	Systems Approach to Construction Management	3
	COSC 621	Construction Project Scheduling	3
	COSC Elective		<u>3</u>
			9
Fall Semester II	COSC 693	Research Proposal Development	2
	<i>PLAN 656</i>	<i>Housing and Community Facilities</i>	3
	COSC Elective		<u>3</u>
			8
Spring Semester II	<i>ARCH 622</i>	<i>Sustainable Building Design Technology</i>	3
	COSC Elective		3
	COSC Elective		<u>3</u>
			9
Minimum Hours Standard Degree			<b>36</b>

\* EHM classes in *italics*

\* Entrance into the Graduate Program in Construction Management may require some leveling or prerequisite courses before core curriculum courses can be taken. These will be determined on a case-by-case basis depending upon the prior education and experience of applicants and will follow departmental standards.

### PART III-G: Model Degree Plan for Master of Architecture Students

Fall Semester I	ARCH 605	Design I	6
	ARCH 431	Design Structure Elements	3
	ARCH 633	Environmental Systems III	<u>3</u>
			12
Spring Semester I	ARCH 606	Design II	6
	ARCH 631	Structural Systems	3
	ARCH History Elective		<u>3</u>
			12
Summer	EHM Elective		3
Fall Semester II	ARCH 607	Design III	6
	<i>PLAN 689</i>	<i>Disaster Recovery and Hazard Mitigation</i>	3
	<i>PLAN 656</i>	<i>Housing and Community Facilities</i>	3
	ARCH 622	Final Study Prep	<u>1</u>
			13
Spring Semester II	ARCH 693	Professional Study	6
	ARCH 657	Professional Practice	3
	<i>ARCH 622</i>	<i>Sustainable Building Design Technology</i>	<u>3</u>
			12
Minimum hours standard degree			<b>52</b>

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\* EHM classes in *italics*



### **PART III – H: Degree Plan for Students Outside the College of Architecture**

Students seeking an EHM Certificate from graduate programs not listed above should consult with their Degree Coordinators and a member of the EHM Certificate Council.

### **PART IV: Summary of Steps Required to Obtain the EHM Certificate**

Students are strongly encouraged to meet with a member of the EHM Certificate Council prior to filing an application and completing a degree plan.

**Step One:** *Initial Application for the Certificate.* At the time a degree plan is filed, the student will complete an Initial Application for the EHM Certificate and attach to it a copy of the Degree Plan signed by the student's Graduate Advisory Committee and the head of the student's department. The EHM Certificate Council will review the Initial Application for compliance with the requirements for content. Initial Applications for an EHM Certificate submitted after filing a degree plan can usually be expected to require a revision of the degree plan and may delay timely progress toward degree completion.

**Step Two:** *Review of the Final Application.* Master's level students must provide the EHM Certificate Council with an abstract and any supporting justification as may be required to evaluate the topical relevance to EHM of their professional study, professional paper, or thesis, if such a product is required in their degree program. This information must be submitted after the manuscript has been approved by the student's Graduate Advisory Committee. Doctoral students must provide the EHM Certificate Council with an abstract and any supporting justification as may be required to evaluate the topical relevance to EHM of their dissertation. This information must be submitted after the defense of the dissertation proposal. The EHM Certificate Council will review the Final Application for compliance with the requirements for content and forward its recommendation to the COA Graduate Programs Office.

**Step Three:** *Issue of the Certificate.* At the time the student is approved for receipt of a relevant graduate degree, the COA Graduate Programs Office will review the approved certificate courses and advise the Dean of the COA of successful completion. The Dean of the COA will then authorize the granting of the EHM Certificate.

### **PART V: Policy for Maintaining Student Records**

Official EHM Certificate Program records consist of the *Application*, a copy of the approved *Degree Plan* (and any subsequent *Petitions* that may impact the previously approved program), an *Abstract* of the final project topic, and any official correspondence. These records will be kept in the official student folders in the COA Graduate Programs Office. For reference purposes the COA Graduate Programs Office will create and maintain a database showing all students who have received, or are currently enrolled in, the EHM Certificate Program.

*Name*

*Degree Program*

*Date Of Application*

*Date Of Actions For Each Step Above*

*Title Of Project, Paper, Thesis, Or Dissertation*

*Name Of Chair Of Graduate Advisory Committee*

*Date Of Degree/Certificate Awarded*

*Permanent/Current Address/E-Mail*

*Employment Data*

This database will be accessible by the EHM Program Office, which also maintains hardcopy files for developing data on the career histories, addresses, email address, etc. of certificate holders and current students. Student grades will not be available outside the COA Graduate Programs Office, and personal data will not be released, except in accordance with state law and university guidelines.

**APPLICATION FOR ADMISSION TO THE  
ENVIRONMENTAL HAZARD MANAGEMENT PROGRAM**

**Student Information:**

Name: \_\_\_\_\_ Student ID Number: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone(s): \_\_\_\_\_ Email: \_\_\_\_\_

Date of application: \_\_\_\_\_

**Degree Information:**

Department: \_\_\_\_\_

Degree Program: (please circle)

*Doctoral Degree*

Ph.D. (ARCH)                  Ph.D. (URSC)                  Ph.D. (Other) \_\_\_\_\_

*Master's Degree*

M.ARCH    MS(Arch)    MLA    MUP    MSLD    MS(COMG)    MS(VIZA)

MA/MS (Other) \_\_\_\_\_

Chair of Graduate Advisory Committee: \_\_\_\_\_

Expected completion date: \_\_\_\_\_

Please attach a preliminary description or final abstract of dissertation, final study, thesis, or professional report or paper:

## STUDENT DEGREE PLAN FOR THE ENVIRONMENTAL HAZARD MANAGEMENT CERTIFICATE

List the courses you propose to meet the Environmental Hazard Management Certificate requirements.

Department Abbreviation	Course Number	Course Title	Credit Hours

\_\_\_\_\_

Signature of Student

\_\_\_\_\_

Date

**Approval Recommended:**

\_\_\_\_\_

Environmental Hazard Management Certificate Council

\_\_\_\_\_

Date

<u>Graduate Programs Office</u>	<u>EHM Program Office</u>	<u>Student</u>	Chair, Student's Graduate <u>Advisory Committee</u>
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