# Urban Informatics Certificate Requirements

Name: __________________________
ID#: ____________________________
Uniqname: _______________________
Graduate Program: __________________

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Term Taken</th>
<th>Modification/ Approval by</th>
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<tbody>
<tr>
<td>1. Core Course: Intro. to Urban Informatics (3 credits)</td>
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<td>2. Urban Context Elective (3 credits)</td>
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<td>3. Analytical Methods Elective (3 credits)</td>
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<td>4. Additional Course: Programming, Design, or Entrepreneurship Elective (3 credits)</td>
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<td>5. Integrative Experience course or project (3 credits)</td>
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Urban Informatics Certificate Approval ________________________________
Courses

1. Core Course: Introduction to Urban Informatics (3 cr)

   URP 535/SI XXX  Introduction to Urban Informatics  3

2. Urban Context Elective (3 cr)

   EAS 537  Urban Sustainability (3)
   EAS 554  Urban Agriculture (3)
   EAS 578  Urban Stormwater (3)
   EAS 787  Metropolitan Dynamics Studio (module 1) (2)
   URP 580  Metropolitan Structure (3)
   URP 671  Transportation and Public Policy (3)
   URP 560  Transportation and Land Use Planning (3)
   URP 540  Land Use and Development Management Planning (3)
   URP 582/SSW 655 Neighborhood Revitalization Policy and Planning (3)

3. Analytical Methods Elective (3 cr)

   *Student may pick from three areas.*

   **Spatial Analysis**
   
   URP 520  Introduction to GIS (3)
   EAS 531  Principles of GIS (4)

   *Or, for students with previous GIS coursework:*
   
   URP 521  Intermediate GIS (3)
   EAS 534  GIS and Landscape Modeling (even years) (3)
   EAS 543  Environmental Spatial Data Analysis (odd years) (3)
   EAS 540  GIS Applications (2)

   **Data Analysis**
   
   SI 618  Data Manipulation and Analysis
   SI 671  Data Mining
   EECS 453  Applied Data Analysis
   STATS 415  Data Mining and Statistical Learning
   PP 567  Data Analysis
   CEE 575  Sensors and Data
   CEE 573  Data Analysis in CEE
   IOE 691  Data Analysis

   **Databases**
   
   SI 664  Database Application Design
   EECS 584  Advanced Database Management Systems
4. Programming, Design or Entrepreneurship Elective (3 cr)
Students whose home discipline does not require programming must take a programming course. Students whose home disciplines requires programming, may take either an additional programming course, OR a course in technology design, or entrepreneurship and leadership.

Programming Courses (one required if not satisfied in home discipline)
SI 502 Networked Computing (3)
SI 506 Programming I (3)
SI 539 Design of Complex Websites (web) (3)

Technology Design Courses
SI 622 Needs Assessment and Usability Evaluation (4)
SI 582 Intro. to Interaction Design (3)

Entrepreneurship and Leadership
URP 522: Collaborative Planning (3)
MO 617 Social Entrepreneurship
ES 250: Introduction to Entrepreneurship
ES 325: New Product and Innovation Management
SI 663 Entrepreneurship in the Information Industry (3)
Any ENTR 500-level course offered by the Center for Entrepreneurship

5. Integrative experience qualifying course or project (3 cr)
The integrative experience allows students to integrate the knowledge obtained from other coursework, and can be satisfied 1) by taking a course from a list of approved electives or 2) by completing a project-based course. Students choosing the project option will need to demonstrate that the project integrates appropriate analytical methods, a consideration of technology context, and an appropriate practice model. Projects completed to satisfy the requirements of the student’s primary degree program or another certificate will not be allowed. Students interested in completing this requirement through an independent project completed within a project course or independent study should submit a 2-page proposal to the program Director, who will approve the proposals after consulting with the Faculty Advisory Committee. Students will be strongly encouraged to present the results of their integrative experience at an annual conference.

Courses
SI 538 Citizen Interaction Design (4)
URP 526 Scenario Planning (3)
ARCH 531 American Space

OR An applied project completed independently or within a project course (such as CEE 679 (Infrastructure Systems Project), SI 612 (Pervasive Interaction Design), or URP 602 (Professional Project))