**Course C16**
**The Design of Spatial Application**
2 units

*Instructo*r:
Matthew Hockenberry - The Media Laboratory, MIT

*Benefits:*
The course offers a practical, focused but detailed overview of traditional approaches to spatial representation. The course provides a review of the state of the art regarding technologies and designs for presenting spatial information and the user goals which necessitate this support. It provides a detailed set of resources for further exploration into each of these areas. The course additionally offers applied practical experience in formulating successful design goals and approaches that produce efficient, effective, and novel spatial applications that satisfy practical user needs. Inspiration, something we always need more of, also comes included.

*Origins*:
The Design of Spatial Applications was designed as a course offering for MIT's Independent Activity Period (IAP). In this capacity it was offered in January of 2006 during IAP for course credit over a period of four weeks. Previous to this material for the course was presented in informal discussions and lectures.

*Features*:
- Introduce the idea of a "spatial application" an application that makes use of spatial knowledge, awareness, or presentation in order to achieve some part of its goals.
- Present the tradition of spatial representations from cartography, to geographic information systems, to urban planning and art.
- Understand the psychology of spatial decision-making, and how our cognitive maps and geographic common sense are different individually.
- Consider the social necessity of sharing spatial information and the impact this has on our communication and the design of applications that share this information.
- Formulate design goals and approaches that can be employed successfully to further tasks that rely on spatial knowledge, and demonstrate these in a group design project.
- Review the state of the art technology that can allow these applications to be constructed efficiently, powerfully, and with attention to interoperability and communication.
- Approach new representations and uses of spatial knowledge and representation that go beyond the norm and active exploration into the possible impact of these approaches and representations.

*Intended Audience*:

The most important qualifications for this course are an interest in the role of spatial information in application development, an appreciation for interdisciplinary discussion, and critical approach to design and problem solving. With that in mind this course is appropriate for: user interface designers and users, software developers, managers of human-computer interface projects, human factors practitioners, researchers in human-computer interaction, geographic information systems developers, and other outside professionals.

*Presentation Style*:
The course is presented as two framing lectures that introduce and conclude the material. A group design exercise, itself framed by two case studies, and organized as a breakout session, forms the middle section of the course.

*Instructor's Background*:
Matthew is a graduate of MIT's Media Lab as a M.S. in Media Arts and Science. He received his B.S. from Carnegie Mellon where he majored in Logic & Computation and Human-Computer Interaction. He has been involved in Academic Research for the past six years, and supervised projects for the past four. He has significant experience in Computer Science, Design, Psychology, and Experimental Design.

As part of his work at MIT he has developed location-based mapping applications that focus on adding community and user-centricity to web-based maps by utilizing artificial intelligence and data mining techniques. He directs the PlaceMap Project, which is building place-based applications for the MIT community. The PlaceMap project was started as the result of a $40,000 award distributed as part of the iCampus Initiative between MIT and Microsoft Research. Matthew served as the principle investigator and primary recipient of the award. Matthew has been published in such conferences as CHI (Computer Human Interaction) ITSC (Intelligent Tutoring Systems Conference) Interact, and ICSC (The International Conference on Spatial Cognition). Matthew has also led seminars at MIT in Locative Technology and the Design of Spatial Applications.

For more information see: [www.spatialapp.com](www.spatialapp.com)