

Link Your Coursework to Your Identity

[Get Started](#)

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## Read Me First

[Help](#)

### Welcome!

Welcome to the University of Minnesota's massive open online course "From GPS and Google Maps to Spatial Computing", taught by Dr. Shashi Shekhar and Dr. Brent Hecht. In the past decade, spatial computing technologies such as online and mobile maps, GPS, and location-based services have become integral parts of our daily lives. In addition, scientists and engineers in a huge array of disciplines are using spatial computing technologies to study the changing climate, improve agriculture productivity, help prevent damage due to disasters, and much more. This course will cover some of the core theory and practice behind these world-changing spatial computing technologies.

We want you to succeed in this course. This is a "quick start" document to provide you with essential information about how the course works. Additional information is in the [Course Syllabus](#).

Be sure to read this document and all other course documents carefully. You are responsible for understanding how the course works, and its policies.

1. [Three tracks](#)
2. [Prerequisites](#)
3. [Course Structure](#)
4. [Workload](#)
5. [System Requirements](#)
6. [Due Dates](#)
7. [Assignments](#)
8. [Weekly Readings](#)
9. [Grading and Statements of Accomplishment](#)
10. [Communicating with the instructors and other students](#)
11. [Getting help](#)
12. [Acknowledgments](#)

### Three Tracks For Different Types of Students

The descriptions below are general. Be sure to review assignments, prerequisites and system requirements for more information.

- **Curiosity Track:** Most of us interact with spatial technologies every day. This track is for students who wish to learn about spatial computing topics, but not commit to an entire course or to doing assignments. **Curiosity track** students do not receive a certificate of accomplishment.
- **Concepts Track:** This track is for students who want to learn about spatial computing concepts in order to make informed choices, but who are not programmers and do not have extensive experience with statistical methods. For example, Concepts Track students will learn about Tobler's

First Law of geography and map projections, but will not delve into the quantifications of either. Students in the Concepts Track complete Concepts Track problem sets, and students who complete the this track with sufficiently high scores will receive a Statement of Accomplishment.

- **Technical Track:** This track builds on the Concepts Track and adds math and programming. In addition to completing viewing lectures, doing the reading, and completing problem sets, Technical Track students complete programming assignments. Technical Track students must have access to a compatible computer and the required software. Students who complete the technical track with sufficiently high scores will receive a Distinguished Statement of Accomplishment.

Please read this document and the syllabus carefully for additional information about the three tracks. Keep in mind that you will not be able to change to a track with greater requirements after the first week, as deadlines for required work will have passed and the assignments will no longer be available.

## Prerequisites

- **Curiosity Track:** no prerequisites
- **Concepts Track:** basic familiarity with spatial computing technologies such as online and mobile maps.
- **Technical Track:** experience with the Java programming language, a little web development experience, knowledge of basic data structures, pre-calculus level math (e.g. geometry), basic statistics, and -- importantly -- the ability to install and managed sophisticated development tools and libraries (see the [“System Requirements”](#) section below for more information).

## Course Structure and Activities

This course is organized around a set of weekly modules. Each module includes:

- video lectures
- readings
- problem sets
- programming assignments (for Technical Track students)
- discussion forums

We strongly encourage you to spend the beginning of each week on the presented material (lectures and readings), leaving a good amount of time to complete the problem sets. *Technical Track* students should be sure to leave extra time for assignments on weeks when there is an assignment.

For more information about course structure and activities, and for a course schedule, see the [Syllabus](#).

## Workload

- **Curiosity Track:** Workload will vary depending on interest in the module topic. During a typical week it will take 2-4 hours to review all videos and reading material, although some weeks will be more and others less.
- **Concepts Track:** average about 2-4 hours per week.
- **Technical Track** students can expect to spend up to an additional 2-3 hours per week, for a total of 4-7 hours per week. The time required will vary from week to week.

Time required for this course also will vary based on your technical skills, English proficiency, and general speed of working.

## System Requirements

For the **Curiosity Track** and the **Concepts Track**, students simply must be able to run the Coursera platform. **There are no additional requirements.**

For the **Technical Track**, students must have access to a computer on which they can install and develop software that meets the requirements listed below. We have designed our assignments to work well across a number of platforms. However -- and this is critical -- **it is the student's responsibility to ensure that they have access to a compatible computer. Students who do not should take the concepts track. Unfortunately, we are unable to offer alternative assignments or extra time due to system requirements issues. We also cannot provide individual technical support on the forum or other platforms.**

Specifically, to successfully complete the programming track, students must have access to a machine that can run the following software:

- TileMill (<https://www.mapbox.com/tilemill/>)
  - Windows requirements: <https://www.mapbox.com/tilemill/docs/win-install/>
  - Mac requirements: <https://www.mapbox.com/tilemill/docs/mac-install/>
  - Ubuntu requirements: <https://www.mapbox.com/tilemill/docs/linux-install/>
- WikiBrain (<http://www.wikibrainapi.org>)
  - Requires Java 6, PostGIS, and others
  - See <http://shilad.github.io/wikibrain/tutorial/installation.html> for more details
- Other basic development software

## Due Dates

Due dates for all assigned work will be on **Mondays, 11:59 p.m. Central USA Time. No late work will be accepted.** If you are in a different time zone, be sure to plan accordingly.

Plan your week, and do not wait until the last minute to submit your assignments. Keep in mind that you are only allowed one submission per assignment.

If you have signed up for the course after the September 23 start date, it is your responsibility to complete all assignments on time. Unfortunately, we cannot make any exceptions.

## Assignments

**Problem sets:** at the end of each module, students will be evaluated through a problem set consisting of multiple choice or short answer questions. Questions are based on video lectures and course readings.

- **Curiosity Track** students are not required to complete problem sets.
- **Concepts Track** students complete only Concepts Track problem sets.
- **Technical Track** Students complete both Concepts Track problem sets and Technical Track problem sets.

Students will only be able submit each problem set once and no late problem sets will be accepted.

Having been students ourselves at one time, we know that life can sometimes intervene in a student's most ardent educational efforts. As such, in order to allow for unexpected events, we will drop each student's lowest problem set grade.

**Programming assignments:** Only **Technical Track** students are required to complete programming assignments. These assignments will have hard due dates, and no late assignments will be accepted. Additionally, we are unable to make accommodations for students who are unable to run required software due to individual technical issues.

## Weekly Readings

All course readings are available online: <http://www-users.cs.umn.edu/~bhecht/spatcompmooc/>.

## Grading and Statements of Accomplishment

Students in the **Concepts Track** are required to earn 50% of possible Concepts Track points to receive a Statement of Accomplishment. All of these points will come from the completion of problem sets.

Students in the **Technical Track** are required to earn 50% of possible Technical Track points to receive a Distinguished Statement of Accomplishment. Technical Track points consist of points from problem sets and programming assignments. Technical Track students must complete **both** Concepts and Technical Track problem sets. If you do not get 50% of points in the Technical Track, don't worry: you will earn the Concepts Track Statement of Accomplishment, given that you meet the requirements.

Of course, for those of you in the **Curiosity Track**, there is no grading involved. Feel free to pop in and pop out of the modules you find the most interesting!

## Communicating with the instructors and with other students

We've set up class discussion forums for each course module. The class forums serve two main purposes:

**Communicating with instructors and teaching assistants: do not email or otherwise contact us directly.** Unfortunately, because there are so many students enrolled in this class, we will not be able to communicate with you on an individual basis. Read on for more information about how to ask questions and get help.

We will monitor the forums each week for questions, reports of bugs, areas of concern, and any other issues that seem to be a priority for the class. Before you post, review the forum to see if others have posted on same issue or topic. If someone else has already posted, vote up and/or reply rather than creating a new thread. The more votes and replies, the more likely you'll get our attention.

**Communicating with other students:** Use the module forums to communicate with other students and to help each other. Please use common sense and courtesy here. Do not ask for (or post) answers to assignment questions. But feel free to ask questions about concepts covered, technical questions about getting tools to work, etc. Also, please make use of the forums as a way to meet other students, as a way to find a study partner, and as a way to exchange useful resources, examples, and more.

## Getting Help

[Coursera Help](#) provides general information about issues such as enrollment, passwords, and Statements of Accomplishment.

[Technical feedback forum](#): Use this forum to report bugs in the platform, e.g., can't play videos, submit buttons not working, 404 errors, etc. Before you report an issue, check to see if someone else has reported it as well. If someone else has reported the issue, vote it up instead of adding a new entry or replying. Voting up calls attention to issues more quickly.

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