# CSCI 100: Information and Intelligence Syllabus

Link: [Schedule and Assignments for Fall 2012](2012_09)

## Notes for Fall, 2012

During the Fall 2012 semester, the course is scheduled as CSCI 903 rather than as CSCI 100, but it really is CSCI 100, and as such may be used to satisfy the Queens College Natural Science General Education requirement. (903 was the course number when the course was offered on an experimental basis during the Spring 2012 semester.)

Also, this semester the course is being offered as part of the Freshman Year Initiative (FYI) program’s “Digital Revolutions” learning community. Everyone taking this course with Dr. Vickery this semester is also registered for the section of English 110 being taught by Jason Nielsen.

Jason and I are in regular contact as we explore ways to make the two courses complement each other. English 110 is a writing course that will draw on some of the material covered in CSCI 100, and CSCI 100 is a computer science course that will draw on some of the discussions and writing you do in English 110. But this is the first time these two courses have been linked in a Learning Community, so be warned: both courses might take some unexpected turns during the semester!

## Course Description

What do information and intelligence have to do with each other? And what do they have to do with computer science?

The short answer is that information theory is one of the key underpinnings of computer science, and artificial intelligence is a key area of computer science that owes its success to careful exploitation of the principles of information theory, among others.

The longer answer is why we have an entire semester devoted to this course!

This is a General Education course, not the first course in any of the [Computer Science majors or minors](http://cs.qc.cuny.edu/index-1.html) offered by the Computer Science Department. General Education courses serve a broader purpose than courses in a major or minor: you will be doing “real computer science," but the aim is to explore the position the discipline of computer science in the liberal arts rather than to start you on a career in computer science. It won’t be a programming course, but you will write some code; it won’t be a mathematics course, but you will work with some mathematical concepts; it won’t be a hardware course, but you will solder your own hardware device; it won’t be a social media course, but the Internet will be a recurrent theme as we discuss the role of computer science in today’s society.

The course will be conducted in seminar form: students will play an active role in the course, and will each be responsible for leading some of the discussions and activities in the course. The goal here is for you to learn to organize and express your understanding of some complex, but interesting, topics.

There are two main readings for the course, the first two items in the [Texts](#texts) section below. As its title suggests, the Gleick book deals with information theory. Don’t let the word “theory” put you off: despite information theory’s basis in mathematics, Gleick presents the material without assuming any particular mathematical spohistication, yet without watering down its essence. The Christian book is written at a level that assumes no more preparation than a willingness to think about and evaluate ideas that might be new to you. Coincidentally, the two books were published within a month of each other early in 2011.

The course requires a regular time committment from you: because of the seminar format, you have to be prepared for each class (especially the ones where you lead part of the discussion!), and you will be required to complete a small (1-2 page) writing assignment each week.

In addition to reading, discussing, and writing about course topics, there is another course component: coding. Writing code is emerging as a valuable skill for artists, social and natural scientists, business people, and professionals of all types. This course does not aim to make you into a programmer, but will use one or more coding exercises as a way to reinforce the principles of information theory and artificial intelligence you will be wrestling with during the semester.

## Course Objectives

Students who complete this course successfully will be able to:

* Explain the relationship between information and information codes.
* Explain the differences among data, information, and knowledge.
* Describe the model underlying the concept of an “intelligent agent.”
* Give examples of artificial intelligence in daily life.
* Discuss the relationships among information, probabilities, and search strategies.
* Write code to implement the algorithm for an elementary intelligent agent.

## Instructor

The instructor for the course is Dr. Christopher Vickery. See [Dr. Vickery’s Contact Information and Office Hours](../../contact_info.xhtml) for that information.

## Course Structure and Assessment

### The following information is not specific to this course. Details to follow ...

There are two 75 minute class meetings per week. Attendance will not be taken (except at the beginning of the semester to verify your registration for the course), but students who often miss class will probably fail the course. The reading assignments for the course are listed below, and will be broken down further in the course schedule page for the semester.

### Assignments

### Grading

Grades are posted on the web as soon as they are available.

Exam and assignment grades become permanent one week after they have been posted, even if there has been a scoring error. Be sure to check that your exam was scored correctly and that the correct grade has been recorded (using the “Check My Grades” form on the course schedule page) as soon as exams are returned.

The College has a standard policy for converting course averages into letter grades, which I follow mechanically, except I compute fractional course averages and round to the nearest integer, which gives you half a point of automatic grade inflation. For example, the college policy specifies a grade of B+ for course averages between 87 and 90: because of rounding, that means that any score between 86.5 and 89.5 is a B+.

## Texts

* James Gleick, The Information. Pantheon, 2011. ISBN-13: 978-0375423727
* Brian Christian, The Most Human Human. Doubleday, 2011. ISBN-13: 978-0385533065
* Edward Tufte, Beautiful Evidence, Graphics Press, 2006. ISBN-13: 978-0961392178

### Notes:

* Both the Gleick and Christian books are available in electronic format. Both are **required**.
* Prof. Tufte has offerred to make copies of Beautiful Evidence available to students in this course for $10 each (below cost).

[Vickery Home](../../)—[XHTML](http://validator.w3.org/check?uri=referer)—[CSS](http://jigsaw.w3.org/css-validator/check/referer)—Last updated 2012-08-21