Fluency With Information Technology
CSE100/IMT100

FIT 100

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FIT 100 CSE 100 and IMT 100

- This class is listed on the UW registration system as both CSE 100 and IMT 100 for the lecture and quiz sections.
- There is just one class – it doesn't matter which one you are registered for.
- Class is currently full. We aren't doing overloads, but there might be a few drops – if you are not registered and want to be, attend class this week and check again with STAR to see if there is space.

FIT 100 Fluency With Information Technology

Goal: Teach you everything you need to know to use information technology effectively throughout your life

… but information technology changes *very* rapidly, so the real goal is to make you a "life long learner" of IT

- There are three kinds of knowledge we will teach
  - Skills, such as how to use email, WWW, word processing etc.
  - Concepts, such as how computers work, how networks work etc.
  - Capabilities, such as logical reasoning, managing complexity etc.
- Projects are the key to this course -- mostly the class is doing stuff … make a web page, solve world hunger

This may be the coolest class you ever take at UW

FIT 100 Fluency

Fluency with information technology is a new concept derived from a National Research Council study on "What everyone should know about information technology"

- The committee abbreviated "fluency with information technology" by FIT, and being fluent as FITness
- FITness replaces "computer literacy" with knowledge that has "staying power" for the rapid changes in information technology

  This class is not what you need to know about IT … it's what you need to know to learn what you need to know about IT

CSE100 in Spring 99 was first-ever try at the NRC's recommendations for fluency

FIT 100 Faster Than a Speeding Bullet

- The rate-of-change in information technology is unprecedented
- To give perspective, a college education has an "expected useful lifetime" of 55 years
  - Electronic computers are 53 years old
  - ARPANet came on-line 30 years ago
  - The term "PC," as in personal computer, is less than 20 years old
  - WWW has been "visible" less than 5 years
- How do you prepare? Learn the fundamentals!

FIT 100 Perspectives on Scale

- On 7 July 1999 Moroccan Hicham El Guerrouj ran a mile in 3 minutes 43.13 seconds, 1.26 seconds better than Noureddine Moreceli
  - El Guerrouj "smashed" "eclipsed" "shattered" record
- Roger Bannister broke the "4 minute mile barrier" in 1954 with 3:59.4
- As a rate this is an astonishing improvement in 45 years from 15.04 mph to 16.13 mph, or 7%

FIT 100 Normal People & The Mile Run

- On average people in their early 20s can run a mile in about 7:30, or about twice the time it takes El Guerrouj
- This factor-of-2 difference between average people and world record holders is typical for physical activities like running, jumping, swimming, etc.
  - No matter how hard we try, we can improve by at most a factor-of-2

FIT 100 Scale of Advancement ...

- The Wright's Flyer 1 flew so slowly that the brother who wasn't piloting ran along side …
  - Suppose that implies a speed of 10 mph
- NASA says the SR-71 Blackbird, a reconnaissance aircraft, flies at least 2200 mph

The Blackbird is faster than Flyer 1 by a factor-of-220 times or so ...

FIT 100 Computer Speeds

- The 1951 UNIVAC I performed 100,000 additions per second
- IBM's Think Pad laptop does 500 million adds per second, a factor-of-5000 over UNIVAC I
- Intel's custom ASCI Red computer built for Sandia National Labs holds the world record at 2.1 trillion (floating point) additions per second
  - ASCI Red is a factor-of-21,000,000 times faster than UNIVAC I

FIT 100 Scale of Advancement ...

- We can comprehend ...
  - El Guerrouj's factor-of-1.07 over Bannister
  - El Guerrouj's factor-of-2 over average 20 year old
  - Possibly Blackbird's factor-of-220 of Flyer 1
- Can we comprehend a factor-of-21,000,000? Or even a factor-of-5000?

Had El Guerrouj improved on Bannister by a factor-of-21,000,000, he would have run the mile in 11.4 *micro*seconds

FIT 100 Keeping Up Through Fluency

- Fluency is designed to teach you the fundamentals, mostly by hands-on practice
  - Skills -- Email with PINE, Web browsing with Netscape, MS Word, MS Excel, MS Access and work with UW databases, Dr. Solomon virus protection ...
  - Concepts -- workings of computer, networks, encryption, digital encoding, programming and algorithmic thinking, effective searching ...
  - Capabilities -- logical reasoning, debugging, testing, thinking abstractly about technology, managing complexity …
- This knowledge should be useful throughout college and throughout life

FIT 100 Is FIT 100 Right For Me?

- Fluency acquisition takes a significant amount of time in the lab
- Students in Spring 1999 thought …
  - FIT100 was very valuable
  - Expanded their thinking
- Options …
  - To learn specific skills like making a Web page, see UWired
  - If you are a "techie" or have significant experience with computers, plan on taking CSE142
  - CSE100/IMT100 will next be offered in Spring 2001

FIT 100 Class Structure

- Three lectures per week
- Two lab sections per week
- Few formal testing situations
  - 4 short in-class quizzes
  - Short (< 1 hour) final
- Projects and assignments are the basis for most grades … use of "ternary system" will be common
  - "0" -- nothing turned in, incomplete, unsatisfactory
  - "1" -- satisfactory completion
  - "2" -- truly extraordinary (rare)

Attendance is essential

FIT 100 Specifics ...

- Text books
  - Lawrence Snyder, Fluency With Information Technology, Professional Copy 'N' Print, 4200 University Ave
  - Kerman & Brown, "Computer Programming Fundamentals with Applications in Visual Basic 6.0", Addison-Wesley
- Instructors:
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FIT 100 Vocabulary

- What is "information technology"?
- Information Technology (IT) is the totality of computers, networks and communication, software, information resources etc.

There will be a huge number of new terms used in this class. They will generally be defined when they are first used, but if not … ask! [Use your whistle!] The surest way to be successful in FIT100 is to understand the terminology

Factoid: "email" is the Czech word for enamel

FIT 100 To Be Successful In FIT100 ...

- Attend classes and labs religiously
- Ask questions when you don't understand something
- Start assignments early … even if you do only a small amount
- Ask questions when you don't understand something
- Look for resources from Web page
  http://www.cs.washington.edu/100/
  email archive, classmates and TAs
- Ask questions when you don't understand something
- Spend some time each day in the lab
- Ask questions when you don't understand something

FIT 100 Assignment 0

Assignment 0 is to help you to familiarize yourself with the basics of email and the web at UW

- For this assignment you can get help from a friend, a lab consultant or President McCormick
- Steps 1-5 of Assignment 0 are due before your first lab meeting
- Steps 6-9 of Assignment 0 is due before class on Wednesday

We ask you to get your UWNetID on your own and to learn to send email on your own because it's really easy to do (follow the instructions on the sheet or ask a friend for help), and once you have done it you will be on your way towards using IT independently

If it seems too daunting, please see me at my office 409 Sieg Hall

FIT 100 Assignment 0 & Class Mailing List

One of the steps in this assignment asks you to subscribe to the class e-mail list

- to subscribe: send mail to cse100-request@cs.washington.edu. The body of your message should consist of the single word subscribe. This message goes to a computer program named majordomo, not a person. (Think of the analogy with telephoning a voicemail system instead of a person.)
- To send a message to everyone in the class: send mail to cse100@cs.washington.edu. These messages are also archived on the class web pages.
- *Please don't send subscription request messages to the whole class.* But if someone messes up, don't send a nasty reply to that person with a copy to everyone in the class!

FIT100 *Gilligan's Island* Rule

- You may work with anyone provided you don't take a written record away from the meeting … including notes, electronic notes, white/black board, etc.
- Indulge in at least 1/2 hour of mindless activity before doing your task … *Gilligan's Island* is a 60s TV show that set the standard for mindlessness

> The goal is to assure that the work you create uses your own brain, unassisted

- Note who you worked with on your assignment

FIT100 Summary

- Welcome to FIT100
- It's a fun class where you learn a lot of things that you can apply immediately, later in college and throughout life
- Don't forget --
  - Homework due for tomorrow's lab