

FIT 100 Welcome to FIT 100!

Fluency with Information Technology

CSE100 = INFO100 = FIT100

Please pick up a syllabus

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FIT 100 Course Staff

Jointly taught by Computer Science and Engineering Department (CSE) and School of Information Science (IS)

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FIT 100 What is the goal of FITness?

- ∇ To make you life-long learners of Information Technology.
- ∇ To give you the ability to adapt to unexpected situations involving technologies you know, and those you don't
- ∇ Fluency:
 - The quality or state of flowing or being fluent
 - A smooth and easy flow
- ∇ More than just computer literacy, fluency involves three kinds of knowledge:
 - Skills
 - Concepts
 - Capabilities

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FIT 100 What is the product life of your education?

- ∇ College education is expected to have a useful lifetime of 55 years
- ∇ What should a graduate of the Class of 1946 have been taught? In 1946:
 - The first electronic computer had just been invented
 - The first computer network wouldn't be around for 25 years
 - The term "personal computer" wouldn't arrive for 35 years
 - The World Wide Web wouldn't be around for essentially 50 years

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FIT 100 Skills

- ▽ FIT 100 is designed to teach you fundamental skills, such as:
 - Email with Pine
 - Web browsing with Netscape or Internet Explorer
 - Web page creation and publication
 - Search and evaluation of information
 - Use of the Visual Basic programming language
 - MS Access and work with databases
- ▽ But technology changes faster than we can all keep up with, so in addition....

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FIT 100 Concepts

- ▽ FIT 100 is designed to teach you fundamental concepts that go beyond individual technologies:
 - How a computer works on the inside
 - Networks and other Information Systems
 - Digital representation of information
 - Programming and algorithmic thinking
 - Effective searching of Information Systems
 - Societal impact of Information and IT
- ▽ But, to bring the concepts and skills together, you will still need to enhance...

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FIT 100 Capabilities

- ▽ FIT 100 is designed to enhance your core capabilities:
 - Engage in logical and sustained reasoning
 - Problem solving
 - Expecting the unexpected
 - Communication to others
 - Anticipation of changing technologies
 - Thinking about IT abstractly

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FIT 100 Fluency with Information Technology

- ▽ Projects are the key to this course.
- ▽ This class is mostly doing stuff, but it requires:
 - Acquiring the skills to use the technology
 - Combined with an understanding of the concepts behind the technology
 - Rounded out by capabilities - - reasoning, problem solving, etc. - - to complete the project successfully

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

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FIT 100 When and Where

- ▽ Lecture and Lab attendance is expected.
 - If you don't attend every day, you will lose some credit opportunities

Lectures:

- M W F 10:30 am – 11:20 am MGH 389
- Led by Martin and Grace
- ▽ Lab Sections AA-AF
 - Tu-Th or W-F
 - Led by TAs
 - Memorize your section ID!
 - Attend the same section always
 - Check STAR for times and for last-minute location changes

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FIT 100 Course Work

- ▽ Lab-related assignments
- ▽ 3-4 Projects (may have multiple parts each)
- ▽ Two midterm exams
- ▽ MiniQuizzes
 - Short, unannounced, covering current reading and assignments
- ▽ Participation and class service
- ▽ Comprehensive Final Exam
 - Monday, March 18, 8:30 a.m.
 - The exam will not be given at any other time. Please don't make travel plans which would prevent you from taking it.

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FIT 100 Homework Policy

- ▽ May be a combination of electronic and paper submissions
 - Each assignment will have instructions for turning it in.
- ▽ You are allowed to turn in ONE project up to 1-day late
 - Once you have used your freebie, no other late projects will be accepted.

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FIT 100 How to be successful in FIT 100

- ▽ Attend all lectures and lab sections
- ▽ Ask questions when you don't understand something.
- ▽ Start assignments early...don't wait until the night before!
- ▽ Ask questions when you don't understand something.
- ▽ Spend some time each day on the computer (there are campus labs open until 10 pm M-F)
- ▽ Ask questions when you don't understand something.

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FIT 100 Class Communication

- ∇ Course web site:
<http://www.cs.washington.edu/education/courses/100/02wi/index.shtml>
- ∇ Communicating with Instructors, TAs and classmates...
 - Bulletin Board
 - Email – List Server
 - Anonymous email
 - Direct mail to a staff member is OK, if it is something only that person can help with.
- ∇ Office Hours
 - Will be posted on the web
 - You can go to any staff person's office hours, not just your own TA.

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FIT 100 Working with Others

- Cooperation is important in many aspects of life
- ∇ A fellow student may be able to help you get unstuck, or explain something better than the instructor
 - ∇ But: if you don't do your own work, you won't learn.
 - ∇ **Using someone else's work, without acknowledging it, is plagiarism and is against the rules.**
 - ∇ **Letting someone help you too much is against the rules.**
 - ∇ **Letting someone copy your work is against the rules.**
 - ∇ CSE100 staff will be alert for and will prosecute cases of inappropriate collaboration

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FIT 100 So, you ask yourself... Is FIT 100 right for me?

- ∇ Fluency acquisition takes a significant amount of time in the lab
 - Not just the scheduled labs sessions, but above and beyond that.
 - ; 7-15 hours per week outside of Lecture and Labs
 - Getting behind is costly
 - Budget your time!
- ∇ However, students in previous classes thought...
 - FIT 100 was very valuable, even though it involved a lot of work
 - FIT 100 expanded their thinking and brought precision to their thinking

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FIT 100 Alternatives to FIT 100

- ∇ If you just want to learn one specific skill
 - UWired and CAC offer classes on Web Pages, Databases, etc.
- ∇ The intro to programming class, CSE142, is very different from FIT100
 - FIT100 is not a prereq for CSE142, but will make you more prepared to take it
- ∇ If you cannot make the time commitment...
 - taking FIT100 is a bad idea

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FIT 100 Course Materials

- ▽ There is one required text:
 - "Fluency with Information Technology" by L. Snyder
 - Available at Professional Copy & Print, 4200 University Way (corner of 42nd and The Ave)
- ▽ There are two optional, but highly recommended, texts. Both will be on reserve in the Engineering Library:
 - "HTML for the World Wide Web" by E. Castro
 - "Learn to Program with Visual Basic 6" by J. Smiley
- ▽ We may also require reading of handouts or web pages
- ▽ You will need some diskettes and a lab notebook

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FIT 100

It seems like just yesterday when typewriters were all the rage.....

And other quaint remembrances of a few years ago

Rates of Change in the IT Age

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FIT 100 Rates of change: A little perspective

- ▽ July 7, 1999 : Moroccan runner Hicham El Guerrouj does a mile in 3:43.13
 - 1.26 seconds better than Noureddine Moreceli, the world record holder at the time
 - The media everywhere reported that El Guerrouj "smashed" "eclipsed" "shattered" the record
- ▽ Roger Bannister was the first to "smash" "break" the 4-minute mile barrier in 1954 at 3:59.4
- ▽ An astonishing improvement in 45 years – from 15.04 mph to 16.13 mph
 - A rate of change of 7%

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FIT 100 Normal People & The Mile Run

- ▽ On average, people in their early 20's can run a mile in about 7:30, in other words, 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

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FIT 100 Scale of Technological Advancement

- ▼ The Wright's Flyer 1 flew so slowly that one brother could run alongside as the other one piloted...a ground speed of 10 mph
- ▼ NASA states that 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...

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FIT 100 Computer Speeds

- ▼ The 1951 UNIVAC 1 performed 100,000 additions per second
 - How fast can you add?
- ▼ IBM's Think Pad laptop does 500 million adds per second, a factor-of-5000 over UNIVAC 1
- ▼ 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 1

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FIT 100 Moore's Law and Human Use of Computers

- ▼ Observed by Gordon Moore in 1965:
 - Microchip processor data storage capacities double every year to 18 months
- ▼ Most computers are underutilized and spend most of their time, even while being used, sitting idle.
- ▼ How fast is fast enough? Do we have the capabilities to sense the difference?

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FIT 100 Comprehension of Advancement

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

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FIT 100 What if....?

- ▽ If El Guerrouj had improved by the same factor over Bannister (factor-of-21,000,000)...
 - He would have run the mile in 11.4 microseconds
- ▽ Human visual perception is so slow that El Guerrouj could run 3000 miles before anyone noticed he moved
- ▽ El Guerrouj would have finished the mile before the sound of the starting gun was heard
 - A feat that is, quite literally, incomprehensible

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FIT 100 Transparency?

- ▽ Predictions
 - Processing speeds will max out within 10 years
 - Information processing with technology will be woven into our everyday lives, embedded into a variety of systems
 - Our reliance on computers will increase
- ▽ Software “tools” to process information will be where our comprehension of computing power takes place
- ▽ Fluency in IT will help us stay aware and ahead of those changes we can comprehend

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FIT 100 Changes that IT brings

- ▽ Nowhere is Remote
 - Or is everywhere remote?
- ▽ World Connectivity
- ▽ Changes in the Human Idea of Relationships
- ▽ English as a Universal Language
- ▽ Freedom of Speech and Assembly

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FIT 100 Le Mot Juste

- ▽ We've talked about Information Technology for a class and a half now – so what does it mean?

Information Technology:

The totality of computers, networks and communication, software, information resources, digital media and other related forms of information and technology, etc.

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FIT
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Precision in Word Use

- ▽ Many terms and acronyms, often with more than one definition.
- ▽ Use the definitions as you come across them in the FIT course pack AND any other technology dictionary that you find useful.
- ▽ Remember, precision in term use means precision in understanding the ideas the term embodies.
- ▽ If we understand the terms and how to use them, people who also understand the terms will understand us.

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100

Homework!!!!

- ▽ If you don't have or don't know how to:
 - UW computer account
 - Use the PINE email system and WebMail
 - Understand an email directory
 - Enable your student web page
 Then you MUST work through the pre-lab Workshop.
 You must have all of these skills *by the time of your first lab section.*
- ▽ Reading for Wednesday
 - The syllabus
 - Course packet chapters – which ones? Find out on the Web
- ▽ Project 0
 - Find it... you know where

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