FIT 100 — Welcome to FIT 100!

Fluency with Information Technology

Please pick up a syllabus

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FIT 100 — What is the goal of FITness?

- ❖ To make you life-long learners of Information Technology. This is no small feat!

- ❖ 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

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 since:
  - ☐ 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

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….

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…

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

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

FIT 100 Expectations

- ❖ Lecture and Lab attendance is required.
- ❖ Lecture Times:
  - ☐ M W F 10:30 am – 11:20 am   MGH 389
- ❖ Lab Times

☐ Section AA	M, W	12:30 – 1:20	MGH 030
☐ Section AB	M, W	1:30 – 2:20	MGH 030
☐ Section AC	T, TH	8:30 – 9:20	OUGL Collab 2
☐ Section AD	T, TH	9:30 – 10:20	OUGL Collab 2
☐ Section AE	T, TH	1:30 – 2:20	MGH 044
☐ Section AF	T, TH	2:30 – 3:20	MGH 044

FIT 100 Course Work

❖ 4 Quizzes
  ❑ Worth 5% each

❖ 4 Assignments
  ❑ Part of lab grade

❖ Lab Work
  ❑ 4% of total grade

❖ 4 Projects (each one has 2 parts)
  ❑ Worth 14% each

❖ Final Exam
  ❑ 20% of total grade

FIT 100 Late Policy

❖ You will submit electronic files as well paper copies for Projects
  ❑ The paper is so we have a way to give you Project feedback

❖ You are allowed to turn in ONE Project, 1-day late
  ❑ Attach and email your project to your TA within 24 hours of the original due date.

❖ Once you have used your freebie, no other late projects will be accepted.

FIT 100 How to be successful in FIT 100

❖ Attend all lectures and labs
  ❑ Labs are offered M, W and T, TH.

❖ 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 in the lab (there are labs open until 10 pm M-F)

❖ Ask questions when you don't understand something.

FIT 100 Bulletin Board and Class Communication

❖ Communicating with Instructors, TAs and classmates…
  ❑ Bulletin Board
  ❑ Email – List Server
  ❑ Anonymous email

❖ Getting Unstuck
  ❑ Debugging
  ❑ Ask a classmate (use the List Server or Bulletin Board)
  ❑ Consult with the Instructor or TA

❖ Cooperation and Collaboration

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

FIT 100

- ❖ 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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Options to FIT 100

FIT 100

- ❖ If you just want to learn one specific skill
  - ☐ UWired and CAC offer classes on Web Pages, Databases, etc.
- ❖ If you are a "techie" or have significant experience with computers, plan on taking CSE 142

- ❖ If you cannot make the time commitment this quarter
  - ☐ FIT 100 (CSE/INFO 100) will be offered every quarter from now on.
  - ☐ You could choose to take in Winter, Spring or Summer quarter

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Course Source Materials

FIT 100

- ❖ There is one required text:
  - ☐ "Fluency with Information Technology"
- ❖ There are two optional, but highly recommended, texts:
  - ☐ "HTML for the World Wide Web" by E. Castro
  - ☐ "Learn to Program with Visual Basic 6" by J. Smiley
- ❖ We will also supply the addresses of Web sites containing supplementary source material

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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

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 Nouredine 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%

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

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…

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

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?

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?

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

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

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

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.

FIT 100 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.

FIT 100 Important!!!!!

- ❖ Reading for Wednesday
  - ◻ Chapters 1, 2 and 4 of Fluency with Information Technology
    - ▪ This is the course pack for FIT 100
    - ▪ Pick up at the course pack at
      - – Professional Copy & Print
      - – 4200 University Way (corner of 42nd and The Ave)

- ❖ 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 attend a pre-lab Workshop
  - ◻ Room 430 Mary Gates Hall
  - ◻ Monday (tonight) from 7:30 – 8:30 PM