CSC407F
(not cross listed this semester)

Software Architecture & Design

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Office hours: M10-11 (??)
(or by appointment)
Mathew Zaleski

- **BASc. / MASc. / ??**
  - Undergrad UofT Engineering Science Computer Option (1983)
  - Doctorate in progress (started 2000)
    - Trace oriented Java Virtual Machine (add into IBM VAJ JVM)

- **Industry Experience**
  - 5 years compiler development at IBM Toronto Labs.
    - Helped write register allocator for TOBEY optimizer.
  - 3 years building interactive C++ apps at Alias/SGI.
    - Tried to create OO graphical apps that were portable, fast.
  - 5 years running own company.
    - Emphasis on OO server side Java driven websites for finance companies.
    - Team >30. About 20 software engineers writing OO code.
    - Sold out 1999 and returned to fall school 2000.
Learning to Design/Architect Software

• Formal (book) knowledge (20%)

• Experience (80%)
  – Characteristics:
    • Large system (> 300 KLoc)
    • Arms-length folk trying to get work done using it
    • Associated revenue stream
    • Maintenance of multiple releases over several years
      – Understand the mistakes that are made and try to fix them
Grades

• Term (60%)
  – Assignment 1 (20%)
    • program from existing UML design
  – Assignment 2 (20%)
    • OOD + OOP (Java) w/ patterns
  – Assignment 3 (20%)
    • Systems architecture
    • Diagrams and written English

• Final Exam (40%)
  – open book (but it won’t help)
Texts

- Design Patterns
  - Gamma, Helm, Johnson, & Vlissides
- Acquire some book on
  - Object Oriented Analysis
  - UML for OOA and OOD
  - See recommendations on course info sheet
- I like Rosenberg’s books.
Exam grade

- **Final Grade**
  - `rawGrade = exam * 0.4 + term * 0.6;`
  - `return (exam < 40% ? min(49%,rawGrade):rawGrade);`

- **ie. if you fail the exam badly your course grade is capped at 49%.**
Resources

• **Home page**
  – Handouts, lecture notes, links

• **Newsgroup**
  – `ut.cdf.csc407h`
  – Do you (collectively) prefer announce webpage?
    – I do!

• **Office hours**
  • How does Monday 10-11 strike you
    • (apart from rather early)
Tutorials

• Each Tuesday, starting Sept 16
  – Assignments to rooms/groups will be posted
• Worked-out examples
• Group discussion
• Discussion of assignments
• Individual TAs will mark your assignments
Computing

• Assignments require
  – Written documentation
  – Printed Java code
  – UML diagrams
  – Other diagrams

• Any computer w/ Java (any jdk)
  – David Penny used Microsoft Visio for UML
    and other diagrams, and Word for docs. Use
    what you want.
  – Poseidon?
  – Enterprise architect?
  – Rose?
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<tr>
<th>week</th>
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<tr>
<td>1-2</td>
<td>Overview and crash course in UML.</td>
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<td>3</td>
<td>OOA/D/P overview, UML for OOA, example</td>
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<td>4</td>
<td>OOP, UML for OOD</td>
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<td>5-10</td>
<td>Design Patterns</td>
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<td>10-13</td>
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