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| |  |  |  | | --- | --- | --- | | **CS 6014 Spring 2013 MWF 12-12:50**  Lecture Room:  Mechanical Engr Bldg 339,  Other rooms: MEC 213, 214, 215 | | | | **Andrew Grimshaw** | **408 Rice Hall** | **grimshaw@virginia.edu** | | **Katherine Holcomb** | **112 Albert Small** | **kholcomb@virginia.edu** | | **Ed Hall** | **112 Albert Small** | **edhall@virginia.edu** | | **Jacalyn Huband** | **112 Albert Small** | **jhuband@virginia.edu** | | **Description**:  The first 10 weeks of the course will provide a foundation in the core abstractions in computational thinking using a programming language chosen by students (from a finite set) to use for the course. The basic programming abstractions will be framed in pseudo-code with weekly, language-specific lecture and lab sessions to demonstrate how these abstractions are implemented in the particular programming language. In the last 4 weeks,students will reassemble into separate "tracks" to cover domain-specific applications of the programming concepts acquired in the first part of the course. | | | |

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|  | **Schedule & Activities (Tentative)** | | |
| **Week** | **Topics** | **Resources** | **Activities** |
| **Jan 14-18** | Course Overview.  Introduction to computation;  Initial introduction to Unix;Variable assignment; Input/Output. |  | Choose language by Friday, 18 Jan.  Have [cluster account](http://its.virginia.edu/research/hpc-account/)by Friday and be able to log in.  Install the [NX client](http://www.uvacse.virginia.edu/the-nx-client/)on your computer. |
| **Jan 23-25**  **(MLK holiday on 21 Jan)** | Logical expressions; Conditional statements; |  |  |
| **Jan 28-Feb 1** | Looping constructs, algorithm complexity |  |  |
| **Feb 4-8** | One dimensional arrays, lists, file IO |  |  |
| **Feb 11-15** | Functions, variable scope, abstraction and encapsulation, modules/packages. |  |  |
| **Feb 18-22** | More about functions |  |  |
| **Feb 25-Mar 1** | Multi-dimensional arrays. Programmer-defined types and structures |  |  |
| **Mar 4-8** | Classes or similar (as appropriate to language) |  |  |
| **Mar 11-15** | Spring Break |  |  |
| **Mar 18-22** | Code validation, debugging |  |  |
| **Mar 25-29** | Code optimization, using a queuing system |  |  |
| **Jan 28-Mar 29** | Using Unix from the command line, bash shell scripting |  |  |
| **Apr 1- 26** | Topical tracks |  |  |