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# Syllabus

This is an approximate sequence of topics for the semester. It loosely follows the order of topics in the textbook, with a few exceptions. There is also material that is not contained in the textbook. Unless otherwise noted, all references to GTK+ are to GTK+ 2, not GTK+ 3.

- Introductory Material
  - UNIX Basics
    - \* Command line development (compiling, linking, debugging, libraries) with GCC
    - \* Using the *make* utility
    - \* C versus C++ in the course
- About GTK+
  - Brief History of GTK+
  - GTK+ 2 versus GTK+ 3
  - The X Window System
  - GTK+ Supporting Libraries
  - Language Bindings
  - Installing GTK on Linux and Windows
- A First GTK+ Application
  - Initializing GTK+
  - The Widget Hierarchy
  - Windows
  - Main Event Loop
  - Compiling a GTK+ program under UNIX: pkg-config
  - Signals, Events, and Callbacks
  - Widget Properties
- Container Widgets
  - GtkContainer
  - Horizontal and Vertical Boxes
  - Horizontal and Vertical Panes
  - Tables
  - Fixed Containers
  - Expanders
  - Notebooks
  - Event Boxes
- Basic Widgets
  - Stock Items



- Toggle Buttons
- Managing Widget Flags
- Text Entries
- Spin Buttons
- Horizontal and Vertical Scales
- Widget Styles
- Additional Buttons (very succinctly)
  
- Dialogs
  - Creating Your Own Dialogs
  - Creating a Message Dialog
  - Nonmodal Message Dialog
  - Dialogs with Multiple Pages
  - GtkProgressBar
  
- Using GLib
  - GLib Basics
  - Basic Data Types
  - Selected Macros
  - Message Logging
  - Memory Management, Slices, Allocation
  - Utility Functions
  - The Main Loop
  - Data Types
  - Data Structures
  
- The Text View Widget
  - Scrolled Windows
  - Text Views
  - Text Iterators and Marks
  - Text Tags
  - Inserting Images
  - Inserting Child Widgets
  - GtkSourceView
  
- Menus and Toolbars
  - Pop-up Menus
  - Keyboard Accelerators
  - Status Bar Hints
  - Menu Items
  - Menu Bars
  - Toolbars



- Toolbar Items
- Dynamic Menu Creation
- The Tree View Widget
  - Tree View Components
  - GtkListStores
  - Creating the Tree View
  - Renderers and Columns
  - Creating the GtkListStore
  - GtkTreeStores
  - Referencing Rows
  - Adding Rows and Handling Selections
  - Editable Text Renderers
  - Cell Data Functions
  - Cell Renderers
- Memory Management in GTK+
- Dynamic User Interfaces
  - User Interface Design
  - Glade Briefly
- Drawing in GTK+
  - Drawing Widgets
  - All About Drawing
  - Layout Widgets
- Optional Topics: These are topics that we will most likely not cover, but if we have spare time we will.
  - Printing
  - Recent Files
  - Recent Chooser Menu
  - Recent Chooser Dialog