

IDL Syllabus

Week 1 (September 29): Introduction

1. What is IDL and what it should (and should not) be used for
2. Basic syntax (variable types, loops, program control)
3. Program structure (procedure and subroutines)
4. IDL-specific efficient coding practices
5. Common array operations
6. String manipulation
7. Running other programs from IDL

Week 2 (October 6): File I/O and data structures

1. ASCII text
2. binary
3. Scientific data formats (HDF,netCDF)
4. IDL data structures
5. Techniques for working with large numbers of files

Week 3 (October 13): Plots and Images

1. Plot devices (screen, file output, postscript)
2. Basic 2D plots (line, scatter, bar)
3. Contour plots, maps
4. Color tables, colorbars, and legends
5. Image manipulation
6. Font manipulation (size, style, special characters)

Week 4 (October 20): Statistics/data analysis (built-in functions)

1. Basic Statistics
2. Probability functions
3. Correlation and curve fitting
4. Eigenvalues and Eigenvectors
5. Time series analysis

Week 5: (Date TBD) How do I?

1. Use this week to answer specific problems that have been submitted via email the previous week. Or used to cover more advanced topics such as:
2. 3D plots
3. Numerical differentiation and integration
4. Equation solving

Websites:

<http://www.dfanning.com/>
<http://astro.berkeley.edu/~jbloom/IDL/>
<http://groups.google.com/group/comp.lang.idl-pvwave/topics?pli=1>
http://idlastro.gsfc.nasa.gov/idl_html_help/Functional_List_of_IDL_Routines.html

Books:

David Fanning, IDL Programming Techniques, 2nd Edition.
Liam E. Gumley, Practical IDL Programming