ESCI 386 - IDL Programming for Advanced Earth Sciences Applications (CRN: 8002)  
Spring 2010 
M, W: 3:00 – 4:50 p.m.  
Caputo Hall 402

**Professor:** Dr. Alex DeCaria  
**Office:** Caputo Hall, Room 410  
**Phone:** 871-4739  
**E-mail:** alex.decaria@millersville.edu  
**Class website:** http://www.atmos.millersville.edu/~adecaria

**Office Hours:**  
Monday 1:00 p.m. – 2:00 p.m.  
Tuesday 10:00 a.m. – 11:00 a.m.  
Tuesday 2:00 p.m. – 3:00 p.m.  
Wednesday 11:00 a.m. – 12:00 p.m.  
Friday 9:00 a.m. – 10:00 a.m.  
Other times by appointment

**Required Text:** *An Introduction to Programming with IDL*, Bowman

**Additional, Advanced Text Available Electronically Through Library:**  
*Practical IDL Programming*, Gumley. This book can be accessed via the link below:  

**Final Examination:** Thursday, May 6, 10:15 a.m. – 12:15 p.m.

**Grading:** I will use the following scale when assigning grades:

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
<th>D-</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum %</td>
<td>94</td>
<td>90</td>
<td>87</td>
<td>83</td>
<td>80</td>
<td>77</td>
<td>73</td>
<td>70</td>
<td>67</td>
<td>63</td>
<td>60</td>
<td>0</td>
</tr>
</tbody>
</table>

The final grade will be determined from exercises, quizzes, and a final exam. These will count in the following proportions:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming Exercises</td>
<td>25%</td>
</tr>
<tr>
<td>Exams (2)</td>
<td>50%</td>
</tr>
<tr>
<td>Final Exam (cumulative)</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Make-up Policy:** Make-up quizzes will be given only if the exam was missed due to illness, emergency, or university-sanctioned activity. Documentation may be required. If you know in advance that you will miss an exam you must make arrangements to take the exam early.

**Expectations:** Programming does not come easy to most people. Although you will have time to work on your assignments in class, unless you are one of the lucky ones that are a natural programmer expect to spend a considerable amount of time (3 to 4 hours per week) outside of class time working on your assignments.
**Attendance:** The decision to attend class is yours. I do not keep a formal record of attendance. However, I reserve the right to take attendance and class participation into account when determining whether or not to bump a borderline score up to the next higher grade. Late arrival and early departure are disruptive, and if habitual may result in a lowering of the final grade.

**Course Objectives:** By the end of the semester the students should be able to write programs in IDL that demonstrate an understanding of:

- IDL scripts
- integer, floating-point, and string variables
- arrays
- file input/output, including ASCII and binary formats
- procedures and functions
- program control statements

The students should also be able to use IDL to
- perform spectral analysis
- solve linear systems of equations
- perform statistical calculations
- numerical integration and differentiation
- create multidimensional graphs and plots

Time permitting we will also discuss object-oriented programming in IDL.