

CLIM 714  
CRN 13334

## Land/Climate Interactions

Tue/Thu 1:30PM - 2:45PM  
Exploratory Hall 1005

*Prof. Paul Dirmeyer*

| Lecture    | Date   | Topic   | Assignment                    | Due                   |
|------------|--------|---|-------------------------------|-----------------------|
| 01-1       | 19 Jan | Introduction, Structural Concepts: Systems, Models                      |                               |                       |
| 01-2       | 21 Jan | Structural Concepts: Scales; Mathematical Concepts: Budgets, Extinction |                               |                       |
| 02-1       | 26 Jan | Mathematical Concepts: Conduction, Feedback, Sensitivity, Correlation   |                               |                       |
| 02-2       | 28 Jan | Water Balance at the Land Surface                                       | Homework #1                   | 8 Feb                 |
| 03-1       | 2 Feb  | Water (cont'd) and Carbon Balances at the Land Surface                  |                               |                       |
| 03-2       | 4 Feb  | Energy Balance at the Land Surface                                      | Homework #2                   | 15 Feb                |
| 04-2       | 11 Feb | Energy Balance at the Land Surface (cont'd) and Boundary Layers         |                               |                       |
| 05-1       | 16 Feb | Atmospheric Boundary Layer and Turbulence                               | Homework #3                   | 24 Feb                |
| 05-2       | 18 Feb | Radiative Transfer  |                               |                       |
| 06-1       | 23 Feb | Radiative Transfer and Vegetation                                       | Homework #4                   | 2 Mar                 |
| 06-2       | 25 Feb | Soil Physics  |                               |                       |
| 07-1       | 1 Mar  | Soil Physics (cont'd)   | Homework #5                   | 16 Mar                |
| 07-2       | 3 Mar  | Class Project and Journal Paper Assignments                             | Paper Review<br>Class Project | 16 & 21 Apr<br>30 Apr |
| 8 & 10 Mar |        | Spring Break  |                               |                       |
| 09-1       | 15 Mar | Models of Land Systems  |                               |                       |
| 09-2       | 17 Mar | Seminal Research  |                               |                       |
| 10-1       | 22 Mar | Land-Atmosphere Feedbacks   |                               |                       |
| 10-2       | 24 Mar | Land-Atmosphere Coupling  |                               |                       |
| 11-1       | 29 Mar | Assembling a Land Surface Model   |                               |                       |
| 11-2       | 31 Mar | Assembling a Land Surface Model (cont'd)                                |                               |                       |
| 12-1       | 5 Apr  | Comparisons of Land Surface Models over Small Scales                    |                               |                       |
| 12-2       | 7 Apr  | Comparisons of Land Surface Models over Large Scales                    |                               |                       |
| 13-1       | 12 Apr | Paper Presentations I   |                               |                       |
| 13-2       | 14 Apr | Land Variability and Land Use Change                                    |                               |                       |
| 14-1       | 19 Apr | Land Use Change and Climate Change                                      |                               |                       |
| 14-2       | 21 Apr | Round Table   |                               |                       |
| 15-1       | 26 Apr | Class Project Results   |                               |                       |
| 15-2       | 28 Apr | Review  |                               |                       |
| 1:30-4:15  | 10 May | Final Exam  |                               |                       |

|          |                    |                     |
|----------|--------------------|---------------------|
| Grading: | Homework           | 50% (5 Assignments) |
|          | Analysis Project   | 20%                 |
|          | Paper Presentation | 15%                 |
|          | Final Exam         | 15%                 |