# Fall/ Spring and Year: Spring 2023

**Credits:** 3 Credit Hours

**Schedule:**

* Duration 50 Minutes
* Number of Lectures/ Sessions 3 Lectures/ Week
* Class Schedule Days and Timings 9.30 a.m. – 10:45 a.m. (Tuesday &Thursday)
* Venue – Location/ Room E-221 (E-Block)

**Instructor:**

* Name Dr.Khadija Shakrullah
* Office Hours and Location: 10:00a.m.11:00am.(Monday, Wednesday,Friday)
* Contact (Email and Extension Number): [khadijashakrullah@fccollege.edu.pk](mailto:khadijashakrullah@fccollege.edu.pk) (Ext. # 673)

**Course Objectives:**

* The course is intended to understand and examines the elements and forces generating weather phenomena, their dynamics and impact: climatic system and their classification
* To highlight the importance of dynamics of marine masses a generalized appraisal of the water resources on land will be discussed.

**Learning Outcomes:**

Upon successful completion of the course, the students will be able to:

* Scientific approach about the short term and longterm phenomena of the lower atmosphere and dynamics.
* Dynamics of hydrological resources of our planet and their impacts on local and global climatic systems.

**Pre-Requites:**

None

**Course Outline:**

1. **Week 1: Introduction**

* Introduction to syllabus and polices, Atmosphere, its components and structure Introduction to atmosphere elements, elements; Temperature,
* Mode: Lecture & Discussion; Reading: Home Reading

1. **Week 2: The Earth’s Global Energy Balance**

* Solar radiation, Global radiation balance, Heat budget and Global energy system
* Mode: Lecture & Discussion; Reading: Home Reading
* Review Write Up #1

1. **Week 3: Atmosphere and Atmospheric Pressure**

* Atmospheric pressure, factors affecting on distribution of atmospheric pressure
* Mode: Lecture; Reading: Home Reading
* Assignment 1: Delivered, Quiz/Periodic Test# 1

1. **Week 4: Wind Circulation Patterns**

* Wind: planetary and local winds circulation patterns, atmospheric condensation, clouds and their formation
* Mode: Lecture; Reading: Home Reading
* Assignment 1: Submitted

1. **Week 5: Precipitation**

* Precipitation, its types, forms and processes, Air masses and Fronts
* Mode: Lecture; Reading: Home Reading
* Assignment 2: Delivered; Quiz/ Periodic Test # 2

1. **Week 6: Depression**

* Cyclones and its types: Tropical and temperate cyclone, Thunderstorm and Tornado
* Mode: Lecture; Reading: Home Reading
* Assignment 2: Submitted, Delivered/directed project

1. **Week 7: Climate and Climatic Patterns**

* Koppen’s climate classification, climatic regions of Pakistan
* Mode: Lecture; Reading: Home Reading
* Mid-Term Examination

1. **Week 8: Weather Maps**

* Salient features of weather maps, symbols and interpretation, Introduction to weather station model
* Mode: Lecture; Reading: Home Reading
* Assignment 3: Delivered/directed project

1. **Week 9: Meteorological Data**

* Meteorological instruments introduction utility and working, a visit to meteorological department
* Mode: Lecture; Reading: Home Reading
* Assignment 3: Submitted
* Periodic Test #3

**10. Week 10: Introduction to Hydrosphere Resources**

* Erath principle water resources, Configuration of ocean Basin, ocean deposits
* Mode: Lecture; Reading: Home Reading
* Review Write up# 2

**11. Week 11: Composition of Marine water**

* Composition of sea water, Water salinity, Temperature variation in oceanic water
* Mode: Lecture; Reading: Home Reading
* Review Write up 2

**12. Week 12: Hydrological Cycle**

* Introduction to hydrological cycle, ocean currents of major marine masses
* Mode: Lecture; Reading: Home Reading
* Periodic Test #4

1. **Week 13: Movement of Marine Water**

* Movement of ocean water, Wave and ocean tides
* Mode: Lecture; Reading: Home Reading
* Project Submitted/periodic Test# 4

1. **Week 14: Course Review**

* The Forum; Review of the Course.
* Mode: Discussion & QA Session; Presentation on Project

**Recommended Reading**

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| **Title** | **Physical Geography** |
| Author | Plummer,MqGrea,Carlcon |
| Publisher | McGraw Hills |
| Call No | 0102976 |
| Edition | 10th |

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| --- | --- |
| **Title** | **Climatology :An Atmospheric Science** |
| Author | J.E .Oliver,J.Hidore |
| Publisher | Printce Hall |
| Call No | 551.46P521 2010 |

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| **Title** | **Invitation to ocean geography** |
| Author | Pual R.Print |
| Publisher | McGraw Hill |
| Call No | 551.46P65212009 |
| Edition | 5th edition |

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| --- | --- |
| **Title** | **Fundamentals of Ocean geography** |
| Author | Keith,Sverdrup,Alison |
| Publisher | Boston, McGraw Hill |
| Call No | 550.46P 2009 |

**Assessment/ Grade Distribution:**

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| --- | --- | --- |
| **Assessment Measure (for Grading)** | **Total Points** | **%age for Final Grade** |
| Individual Home/Library Assignments(3) | 75 | 15 % |
| Periodic Tests/Quizzes(4) | 100 | 20% |
| Class participation and Review Write up(2) | 50 | 10% |
| Individual/Group Project & Presentation | 75 | 15 % |
| Mid-Term Examination (Objective + Essay) | 75 | 15% |
| Final Examination (Objective + Essay) | 125 | 25% |
| **Percentage of the cumulative points: 500** | | **100 %** |

In line with University’s policy and based on percentage of the cumulative points earned as given in above table (denoting “Numerical Value” below), the grades will be awarded as under:

|  |  |  |
| --- | --- | --- |
| **Grades** | **Numerical Value** | **Meaning** |
| A | 93-100 | Superior |
| A- | 90-92 |  |
| B+ | 87-89 |  |
| B | 83-86 | Good |
| B- | 80-82 |  |
| C+ | 77-79 |  |
| C | 73-76 | Satisfactory |
| C- | 70-72 |  |
| D+ | 67-69 |  |
| D | 60-66 | Passing |
| F | Below 60 | Failing |

**Attendance/ Participation:**

Students are expected to be regular, punctual and participating in the class/course activities for which they should remain well prepared. A student failing to participate in less than 80% of the academic exercises shall not expect Instructor’s permission to appear in the Term Examination unless for a valid reason beyond the control of the student.

**Writing Assignments:**

Students are expected to work in a planned way for which they may seek guidance from their Instructor during his/ her Student Consultancy Hours.

**Exams:**

Missed term examinations will be reconsidered only on certified medical grounds.

**Research Paper/ Directed Project:**

Not Applied

**Academic Integrity:**

Students are expected to be on schedule in submitting their assignments. For every day that an assignment is late, you will lose 10% of credit. It must also be turned in before or during the class. Missing class or sliding your work under my office’s door or handing it over to the Lab Attendant is unacceptable; your work will be considered a day late. If you foresee any difficulty with the due date, you must talk to me beforehand to allow other arrangements (if feasible). If you cannot reach me beforehand, you must have a dated doctor’s excuse or a letter from your parent(s) stating some very valid reason; otherwise, your work will be subject to penalty.

**Plagiarism:**

Students are expected to be academically honest and cite reference(s) of the source material in their write-ups. They should avoid copying from others in doing the assignments / exercises and cheating during examination, test or quiz. These are the least plausible acts and those indulging in such exercises will automatically get a grade F without any recourse to pardon. The matter may also be reported to the University for Further Action.

**Instructor** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **HOD** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Dean** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_