

Prerequisite status: -	Unit Type: One theoretical, one practical	The number of units: 2	Name of the lesson: <b>Satellite climatology methods</b>
Type of additional practical training: Has it <input checked="" type="checkbox"/> does not have <input type="checkbox"/> science travel <input type="checkbox"/> Laboratory <input checked="" type="checkbox"/> Workshop <input type="checkbox"/> , Seminar <input type="checkbox"/>		The number of hours: 48	Expert professor to teach: Satellite climatology
<b>Goals:</b> Acquaintance of students with the types of meteorological satellite images and how to interpret them			
<b>Headlines</b>  1- Basics of image processing (Principles and basics of pattern recognition, Types of methods of interpretation and classification of satellite images, Advantages, and limitations of images and visual and digital classification, Methods of preparing thematic maps using visual images of data) 2- Suitable gauges for satellite meteorology and related platforms 3- Suitable bands for extracting information and how to use it 4- Interaction of electromagnetic spectrum with atmospheric phenomena 5- Determination of cloud texture using satellite images 6- Determining different fronts using pictures 7- Estimating the characteristics of the cloud 8- Prediction of atmospheric phenomena 9- Extraction of meteorological parameters from satellite data 10- Algorithms and methods of information extraction from meteorological images 11- Practical work and programming with image processing software			
<b>Reference</b>  1- Farajzadeh, Manouchehr Nemat A., Karimi, 2013, Fundamentals of Satellite Meteorology, Samit Publications 2- Rasouli, Ali Akbar, 2011, an introduction to meteorology and satellite climatology, Tabriz University Publications 3- Zhang Guifu, 2016, Weather Radar Polarimetry, CRC Press 4- Tan Su-Yin, 2013, Meteorological Satellite Systems, Springer			