PHY 310 1.0 and PHY 357 1.0
Space Physics I

Course Contents:

Planetary Atmospheres
(Formation and Evolution of Planetary Atmospheres, The structure of the Terrestrial Atmosphere, The Escape of the Atmospheric Gases, The Atmospheres of the Earth)
Earth's Atmosphere
(Retaining of Gases in the Earth, Barometric Equation & Scale Height, Number Density Profiles, Atmospheric Regions, Temperature Profiles)
The Ionosphere of the Earth
(Introduction, The Chapman Layer Theory, Plasma Frequency, Collision Frequency and Absorption)
The Magnetosphere of the Earth
(The Dipole Magnetic Field, The Earth's Magnetic Fields, The Radiation Belts)
The Active Sun
(Introduction of the Active Sun, The Main Regions of the Sun, Sunspots and the Solar Cycle, Radio and X-ray Bursts from the Sun, Effect of the Solar Cycle)
Radio Wave Communication
(Reflection of Radio Waves, Absorption of Radio Waves, Complex Refractive Index, Reflection Heights, Ionosphere – Sounding Techniques, Pulse Reflection Methods, Expectable Crisis of Radio Wave Communication)

References:

* Space Physics and Space Astronomy – Michael D. Papagiannis
* Space Physics - May-Britt Kallenrode
* Horizons - Exploring the Universe – Michael A. Seeds
* Sun, Solar Cycle, Ionosphere, Absorption cross section, Maxwell's equations, Atmospheric dispersion modeling, Wave plate – Wikipedia (Internet)
* Sunspot Numbers - IPS - Solar Conditions (Monthly Sunspot Numbers) (Internet)
* Solar Physics – NASA - Marshall Solar Physics (Internet)
* Ionospheric Physics of Radio Wave Propagation - Edwin C. Jones (Internet)

Method of Assessment:	Continuous Assignments	- 40%
	End of the Semester Theory Examination	- 60%
	Total	- 100%

Lecturer in Charge: Dr. M. M. P. Madhuranga Fernando / Department of Physic.

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