

226807 Cosmic Rays

(รังสีคอสมิก)

Number of Credits: 3

Course Description :

Introduction of cosmic rays (CRs), particle physics, origins of CRs, particle production in atmosphere, CR measurements, CR research topics

Course Objective :

Students will be able to explain and discuss about basic background of cosmic rays, particle physics, origins of cosmic rays, propagation of cosmic rays to collide with the Earth's atmosphere, cosmic ray measurements and relevant research topics.

Course Contents	No. of Lect. Hours
1. Introduction of cosmic rays (CRs) <ul style="list-style-type: none">- Discovery and history of CRs- Significance of CR studies	3
2. Particle physics <ul style="list-style-type: none">- Special relativity- Theory of elementary particle physics	6
3. Origins of CRs <ul style="list-style-type: none">- Solar system, Galactic, extragalactic, new knowledge physics- Gamma-ray production- Composition	9
4. Propagation of CRs <ul style="list-style-type: none">- Acceleration mechanisms- Secondary particle production- Solar effects	9
5. Particle production in atmosphere <ul style="list-style-type: none">- Geomagnetic field effects- Interactions with Earth's atmosphere	6
6. CR measurements <ul style="list-style-type: none">- Detector usage techniques- Space-based observation missions- Ground-based observation missions	9
7. CR research topics	3
Total	<u>45</u>