



SCHOOL PLAN

University Unit: Engineering school
Graduate program: Geospatial Sciences and Applications
Curse: [X] Academic Master [] Professional Master's [X] Doctorate degree
Discipline : Observational Radio Techniques Astronomy and Radio Sciences
Teacher (s): Carlos Guillermo Giménez de Castro
Note:.
Workload: 48 h Credits 4 [] Required [X] Optional [] Eleffective
Description: History and relevance of radio astronomy. Types of radio telescopes, arrays and receivers. Hertz dipole. Radiation diagram and descriptive parameters of an antenna. Basic parameters of a radio frequency telescope; bases of antenna theory. Fundamentals of radiative processes, propagation and polarization of electromagnetic waves. Absorption in the Earth's atmosphere. Measures efficiencies and sensitivity of radio telescopes. Interferometric arrangements, aperture synthesis and calibrations. Principles of VLBI. In-line receivers and line receivers. Infrared sensors, materials, filters, terahertz detectors.
Program content:
Evaluation criteria
According to the General Regulation of Stricto Sensu Post-Graduation, Art. 98:
A - excellent: corresponds to grades in the interval between grades 9 and 10;
B - good: corresponds to grades in the interval between grades 8 and 8.9;
C - regular: corresponds to grades in the interval between grades 7 and 7.9;
R - disapproved: corresponds to grades in the interval between degrees 0 and 6.9 "
Bibliography:
Radio Astronomy", Kraus J. D., Cygnus-Quasar, 1986.
Tools of Radio Astronomy", Rohlfs, K., Springer Verlag, 1990.
An Introduction to Radio Astronomy", Burke B. F. e Graham-Smith F., Cambrigde University Press, 1997.
Complementary:
Methods of Experimental Physics, Astrophysics, Parts B and C, Radio telescopes and Radio Observatories", M.L. Meeks, Academic Press, 1976.
Uncooled Thermal Imaging", P.W. Kruge, SPIE Press, 2001.
Optical Design Fundamentals for Infrared Systems", M.J. Riede, SPIE Press, 2001.
Schedule



UNIVERSIDADE PRESBITERIANA MACKENZIE

Pró-Reitoria de Pesquisa e Pós-Graduação
Coordenadoria Geral de Pós-Graduação *Stricto Sensu*



Date	Theme