

Advanced Postgraduate Program in Satellite Communication & Space Systems (APGP–SCS)

An Autonomous Full-Time Residential Postgraduate Program (24 months)

"There are so many benefits to be derived from space exploration and exploitation; why not take what seems to me the only chance of escaping what is otherwise the sure destruction of all that humanity has struggled to achieve for 50,000 years?"

- Isaac Asimov in his speech at Rutgers University



For thousands of years, humans have tried to explore space and understand it in terms of science, astronomy and religion. After the advent of modern science and technology, mankind has progressed into exploring space, building complex space systems and utilizing and returning things back to earth from space. In the 21st Century, space systems and space technologies have been playing a central role in everyday human life. Satellite systems have become an integral part of communication, remote sensing, weather forecasting and broadcasting technologies. Mini and micro satellites have evolved as a cost effective solution for local area applications and as an important tool for space research. Other space technologies such as relay platforms, space telescopes, rovers and space stations have become a reality today. Space technology is no longer just reserved for government agencies; increasing interest in its benefits has pushed big corporations internationally to explore its viability and utility for various applications.

This Advanced Postgraduate Program has been designed to equip young researchers and engineers to explore different dimensions of space and its technologies covering wide areas of space systems, spacecraft engineering with specific emphasis on satellite communications systems. The modules provide ample scope for students to explore new and innovative space and satellite communication system design for ranges of space applications.

ELIGIBILITY

Graduates / Postgraduates with a Bachelors Degree in Engineering / Technology in Electrical / Electronics / Communication / Instrumentation / Mechanical / Computer Science / IT or MCA or MSc Physics / Electronics / Computer Science / Mathematics or equivalent (with minimum 55 percent marks or equivalent grades)

FOCUS AREAS

- ▶ Satellite Engineering
- ▶ Satellite Communication
- ▶ Space Platforms
- ▶ Mini and Micro Satellites
- ▶ Spacecraft Design

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COURSE STRUCTURE

	CODE	COURSE NAME	CREDITS*
BRIDGE	ISR001	Software Tools for Intelligent Systems	
	ISR002	Introduction to Electronic Design	
	ISR003	Signals and Systems	
	ISR004	Introduction to Applied Mechanics	
COMMON	COM001	Life Skills Development – I	2
	COM002	Life Skills Development - II	2
FOUNDATION	SCS501	Fundamentals of Space Science & Technology	3
	ISR502	Control Theory	3
	ISR503	Sensors and Actuators	3
	SCS504	Communication Engineering	3
	ISR505	Introduction to Embedded Systems	3
	SCS506	Satellite Engineering	3
	SCS507	Advanced Electromagnetics	2
CORE	SCS601	Optics & Photonics	3
	SCS602	Satellite Communication Systems	3
	SCS603	Navigation System	3
	SCS604	Spacecraft - Electronic Subsystems	3
	ISR605	Technology Management	2
ADVANCED	SCS701	RF & Microwave Engineering	3
	SCS702	Real Time Embedded Systems	3
	ITS703	Solar Energy Powered Vehicles	3
	SCS704	Antennas for Space Communication	3
	ISR705	Ergonomics	2
ELECTIVE (Choose one)	SCS801	Spacecraft Design	3
	SCS802	Remote Sensing	3
	ISR803	Software Engineering for Embedded Systems	3
	ISR804	RTOS Design and Linux	3
PROJECT / THESIS	SCS901	Seminar / Mini Project – I	1
	SCS902	Research Methodology and Mini Project – II	2
	SCS903	Project / Thesis	32

*1 Credit Hr = 16 Class Hrs / 32 Lab Hrs in a semester