ELEN90050 RF Systems and Architecture

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 1 two hour lecture per week Total Time Commitment: 200 hours
Prerequisites:	Admission into the 364AA Master of Telecommunication Engineering OR Students must have taken the following two subjects prior to enrolling in this subject

Subject	Study Period Commencement:	Credit Points:
ELEN90043 Device Models	Semester 1	12.50
ELEN90048 Passive Component Design & Simulation	Semester 1	12.50

Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Coordinator:	Prof Stan Skafidas
Contact:	Prof Stan Skafidas Email: **sskaf@unimelb.edu.au (mailto:sskaf@unimelb.edu.au)**
Subject Overview:	**AIMS** Choosing the correct system architecture in implementing a system is critical in the design of on chip systems. Differing architectures have benefits and detriments. **INDICATIVE CONTENT** The subject will introduce students to the different RF architectures and provide students with the machinery to estimate transceiver performance and compare direct conversion and super heterodyne transceivers. Simulating transceivers is complex and full chip simulations can take many days to complete. Models for mixers, low noise amplifiers and power amplifiers will be provided to help with simulation and design as well as providing the students with insights on performing the right tradeoffs in simulation and design.
Learning Outcomes:	**INTENDED LEARNING OUTCOMES (ILO)** Having completed this unit the student should be able to: 1 Explain the differences between transceiver architectures 2 Perform tradeoffs in RF system design and specification of components.

Assessment:	One written examination (not exceeding three hours) at the end of semester, worth 70% Continuous assessment of submitted project work (not exceeding 30 pages in total over the semester, approximately 40-45 hours of work per student), worth 30%. Intended Learning Outcomes (ILOs) 1 and 2 are assessed in the final exam and submitted project work.
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# Ability to apply knowledge of science and engineering fundamentals # Ability to undertake problem identification, formulation, and solution Ability to utilise a systems approach to complex problems and to design and operational performance # Ability to build and test real world systems that meet industry specialisation and manufacturing standards # Capacity for lifelong learning and professional development
Notes:	**LEARNING AND TEACHING METHODS** The subject is delivered through lectures **INDICATIVE KEY LEARNING RESOURCES** The subject is delivered through lectures
Related Course(s):	Master of Nanoelectronic Engineering