MODULE DESCRIPTION FORM

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

ME954   Introduction to Satellite Applications

Module Registrar: Ms Astrid A. Werkmeister astrid.werkmeister@strath.ac.uk	Taught To (Course): MSc. Satellite Applications (with Data Science) for whom class is compulsory		
Other Lecturers Involved: Dr Suki D. Sule; Prof Malcolm MacDonald	Credit Weighting: 10	Semester: 1	
Assumed Prerequisites: None	Compulsory	Academic Level: 5	Suitable for Exchange: N

Module Format and Delivery (HOURS i.e. 1 credit = 10hrs of study):

Lecture	Tutorial	Laboratory	Groupwork	External	Online	Project	Assignments	Private Study	Total
20	10						40	30	100

Educational Aim

This module aims to impart an understanding of satellite applications in industry, defence, aerospace, and research.

Learning Outcomes

On completion of the module the student is expected to be able to:

LO1   Distinguish between different satellite systems, their capabilities and their limitations.
LO2   Interpret satellite data and have an understanding of which products are derived from which sensors.

Syllabus

The module will teach the following:
• Overview of applications: civil/defence orbits and perturbations, electromagnetic spectrum, human and space exploration, asteroid mining
• Satellite Communications
• Global Navigation Satellite Systems
• Remote Sensing (Active and Passive)
• Altimetry
• Introduction to Remote Sensing Data Processing Tools

Assessment of Learning Outcomes

Criteria: For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:

LO1
C1   Demonstrate an understanding of the main factors and design limitations that influence satellite data retrieval.
LO2
C1   Demonstrate ability to interpret and discuss satellite data
C2   Evidence, justify and discuss the implications of choices made in order to obtain results.

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

Principles of Assessment and Feedback
(within Assessment and Feedback Policy at: https://www.strath.ac.uk/staff/policies/academic/)

Students are encouraged to collaborate in the calculations and models provided in the tutorial exercise and demonstration calculations provided during the course. However, it is emphasised that the analysis reports they submit must be entirely their own work – background research plus results they have personally generated and interpreted.

Detailed feedback is given, particularly on the initial tutorial exercises and assignments, to guide the students for their final assignments. Additionally, clear guidance will be provided in class as to what constitutes an acceptable level of performance in assessments. A class discussion and tutorial class will be used to provide further feedback on assessments to the students in general and individually.

Assessment Method(s) Including Percentage Breakdown and Duration of Exams

Examination				Coursework		Practical		Project	
Number	Month(s)	Duration	*Weighting*	Number	*Weighting*	Number	*Weighting*	Number	*Weighting*
				2	50% each				
*				* LO1, LO2		*		*	

** **L/Os:** Indicate which Learning Outcomes (L01, L02, etc) are to be assessed by exam/coursework/practical/project as required.*

Coursework / Submissions deadlines (*academic weeks*):
Coursework 1: wk5 (Monday at noon on Myplace)
Coursework 2: wk11 (Monday at noon on Myplace)

Resit Assessment Procedures:
Submission of alternate coursework(s) prior to commencement of the August exam diet.

PLEASE NOTE:
Students must gain a summative mark of 50% to pass the module. Students who fail the module at the first attempt will be re-assessed by the August diet. This re-assessment will consist entirely of coursework. No marks from any previous attempts will be transferred to a new resit attempt.
As soon as a student knows that they require a resit assessment for this class they should contact the class registrar to confirm these resit requirements and deadlines for this class.

Recommended Reading

***Purchase recommended   **Highly recommended reading   *For reference (do NOT purchase)

**(*) Introduction to Satellite Remote Sensing by Emery and Camps (Online version available for free at Library)
** An Introduction to Ocean Remote Sensing by Seelye Martin (2nd Edition)
** Principles of Applied Remote Sensing by Siamak Khorram, Cynthia F. van der Wiele, Frank H. Koch, Stacy A. C. Nelson, Matthew D. Potts

Additional Student Feedback

Date	Time	Room No
		Check timetable webpages for details

Session: 2019/20

Approved:

Course Director Signature: *E Henderson*
Date of Last Modifications: 27/08/2019

(Updated July 2019)

MODULE TIMETABLE

Module Code:	ME954	Module Title:	Introduction to Satellite Applications

Brief Description of Assessment:

Two technical reports that demonstrate an understanding of the main factors and design limitations that influence satellite data retrieval.

Assessment Timing:

Indicate on the table below the start/submission dates for each assignment/project and the timing of each exam/assessment using the dropdowns provided. Dropdowns can be left blank. Add extra notes below the dropdowns.

Please note: Timings can and will change, this should only be used as a guide.

Semester One	W&D Wk	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
	Choose an item. Choose an item.	Course work Set	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Course work Submit	Course work Set	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Course work Submit	Choose an item.

Semester Two	C&D Wk	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Choose an item.