



## MODULE DESCRIPTION FORM

### DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

## ME976 SATELLITE APPLICATIONS FOR SUSTAINABLE DEVELOPMENT GOALS

Module Registrar: Dr A. Riccardi <a href="mailto:annalisa.riccardi@strath.ac.uk">annalisa.riccardi@strath.ac.uk</a>	Taught To (Course): MSc. Satellite Data for Sustainable Development for whom the class is compulsory	
Other Lecturers Involved:	Credit Weighting: 20	Semester: 2
Compulsory/ elective class	Academic Level: 5	Suitable for Exchange: N

### Required prerequisites

**Note:** It is the responsibility of ALL students to ensure that they satisfy the prerequisite knowledge for this module BEFORE adding as part of curriculum selection. If unsure, please contact the Module Registrar or discuss with your Programme/Year Adviser of Studies.

None

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

Lecture	Tutorial	Laboratory	Groupwork	External	Online	Project	Assignments	Private Study	Total
	10		23	5	4	35	23	100	200

### Educational Aim

This class is designed to provide the student with the understanding of the impact that the use of satellite data has on addressing the UN 2030 agenda on sustainable development. The course has two parts:

**SF105** This class aims to develop student knowledge and understanding of sustainable development from a multidisciplinary perspective. The class introduces the UN's 17 Sustainable Development Goals and will explore in depth multidisciplinary perspective of responding to the challenges of four particular goals, namely: SDG 3 Good Health and Wellbeing, SDG6 Clean Water and Sanitation, SDG 10 Reduced Inequalities and SGD 13 Climate Action. Through focused study of these four SDGs, students will gain an understanding of the different ways in which various disciplines in Business, Engineering, Humanities and Social Sciences, and Science, can contribute to addressing these challenges. In addition to developing academic skills, students will also have the opportunity to develop socio-emotional skills, including reflective skills and the ability to collaborate with, and communicate effectively with, students from other disciplines

### Satellite Applications for SDGs

The second part of the course, that will run in parallel with the first one, is focused on providing the students with a practical understanding of the application of satellite data to SDGs and the sustainability of data gathering itself. This articulates in a series of invited lectures from academics from other departments, private practitioners and governmental representatives; and a series of tutorials where notable success stories on the topic will be analysed and discussed in terms of results achieved, impact and technology demonstrated.

### Learning Outcomes

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

#### SF105

LO1 Students will demonstrate a critical understanding of the SDG agenda, and will be able to summarise the key challenges that are addressed in each of the four SDG explored in depth.

LO2 Students will demonstrate an understanding of the four SDG in a local, national and global context, and of the complex inter-relationships between each SDG.

LO3 Students will demonstrate an understanding of how the SDG can be addressed from the perspective of their own disciplines, and from the perspectives of other disciplines.

LO4 Students will develop a critical understanding of the some of the key social, environmental, economic, ethical, and cultural issues in meeting the SDG.

### **Satellite Applications for SDGs**

LO5 Student will be able to independently assess the applicability of satellite data to targeted SDGs challenges

LO6 Students will develop critical thinking on the current research progress in the field and their impact on the society

LO7 Students will develop a consideration and analysis of current effort in academia, private and public sector on addressing the UN 2030 agenda target goals

## **Syllabus**

The module will teach the following:

**SF105:** Please refer to detailed syllabus on course MDF

<https://classes.myplace.strath.ac.uk/mod/resource/view.php?id=1183884> (SF106 is the first semester equivalent of SF105)

### **Satellite Applications for SDGs**

- Sustainability of satellite data assimilation and processing
- Satellite data for urban development
- Satellite data for policy, decision making and actions
- Satellite data for water resources monitoring and management
- Satellite data for agriculture and rural development

## **Assessment of Learning Outcomes**

### **Criteria**

**SF105:** Please refer to detailed criteria on course MDF

### **Satellite Applications for SDGs:**

LO5

C1 Identify key challenges in the targets of one or more of the SDGs presented, research current state of the art of the applicability of satellite data to the identified challenges and propose an alternative solution

C2 Develop a detailed project plan, identify relevant data and perform an assessment analysis of the proposed concept

LO6 & LO7

C1 Communicate clearly the understanding of the key challenges encountered, solutions proposed, results achieved and potential impact in academia, public and private sector

C2 Elaborate a critical discussion of the case studies analysed with the support of additional external sources

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/professionalservices/staff/policies/academic/> )

### **SF105**

Please see detailed assessment description on dedicated MDF

### **Satellite Applications for SDGs**

Student must produce a group presentation and an individual written report. The group presentation focuses on a critical analysis of the papers reviewed and presentations attended in terms of approach used, state of the art and potential impact. For the written report the student has to select an SDG and its target, review existing work in the field and gaps, propose a plan, a technology and a preliminary analysis of the work to be completed to progress towards the goal.

Feedbacks on presentations will be returned to student on the same day with an in-class discussion with the entire cohort. Written feedbacks will be returned for individual reports.

NOTE: students are enrolled in SF105 as personal credits

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

Examination				Coursework		Practical		Project	
Number	Month(s)	Duration	Weighting	Number	Weighting	Number	Weighting	Number	Weighting
				1	(SF105) 15%	1	(Presentati on) 15%	1	70%
*				*LO6-7		*LO1-4		*LO5	

\* **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*):**

Semester 2 Week 10 Presentation

Semester 2 Week 11 Project

**Resit Assessment Procedures:**

Submission of alternate ^^project prior to commencement of the August exam diet.

**^^Students must contact the module Registrar for project details as soon as they know that they are required to resit this class.**

**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 before the August diet. This re-assessment will consist entirely of a project. No marks from any previous attempts will be transferred to a new resit attempt**

**Recommended Reading**

No set texts or recommended for the class. Relevant material provided during tutorials or on Myplace module page

**Additional Student Feedback**

(Please specify details of when additional feedback will be provided)

Date	Time	Room No
		Check timetable webpages for details

Session: 2021/22

**Approved:**

**Course Director Signature: E Henderson**

**Date of Last Modifications: 08/09/2021**

(Updated July 2021-MAE)

## MODULE TIMETABLE

Module Code:

ME976

Module Title:

Satellite Applications for Sustainable Development Goals

### Brief Description of Assessment:

SF105 assessment (15%), one group presentation to be held in week 10 (15%) and one project report to be submitted on Week 11 (70%)

### 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.	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.

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.	Project Set Choose an item.	Choose an item. Choose an item.	Choose an item. Choose an item.	Present ation Choose an item.	Project Submiss ion