Module Definition Form (MDF)

Module code: MOD011125	**Version:** 1 **Date Amended:** 17/Jun/2025

1. Module Title
Transforming Agriculture (Towards Net Zero)

2a. Module Leader
Henry Matthews

2b. School
Writtle School of Agriculture, Animal and Environmental Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
4

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions

Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	None		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module explores current agricultural principles and business practices within the context of climate shocks and change, a changing economic and political landscape and biodiversity loss, all while facing the need to feed 9 billion people globally by 2050. You'll be introduced to conventional and sustainable farming principles, learn core business concepts and vocabulary enabling you to interpret and understand how farmers can tackle regional and global challenges today. This will include understanding alternative and emerging practices, including choice of crops, livestock and inputs with due attention to the natural capital that supports food production in a profitable farming business fit for the future. While the framework of the module will be the UN Sustainable Development Goals, you' ll evaluate individual farm businesses at national and local level, learning from those advancing new techniques. This will include novel cropping trials and performance on our own farm alongside drivers from agri-food retailers and consumers

6b. Outline Content

Conventional Agriculture

Basic principles and techniques of conventional farming, including crop production models (Combinable and Root crops) including cultivations, crop establishment and nutrition, crop protection, harvesting and storage. Livestock breeding and rearing, nutrition, grazing practices and finishing. Comparative global systems.

Sustainable Practices

Key sustainable farming practices such as minimal tillage, reduction in artificial inputs, use of fertility building crops, herbal leys, cover cropping and integrating livestock and crops together. Challenges; higher level of management, yields. Benefits; soil quality improvement, reduction in erosion, improved water quality, enhanced biodiversity, lower carbon emissions.

International Initiatives

UN Sustainable Development Goals. European Green Deal. The Global Agriculture and Food Security Program. Intergovernmental Panel on Climate Change

UK Government Policy

Agriculture Act 1947. Role of subsidies. CAP. Environmental policies. ELMs, Sustainable Farming Incentive

Future Trends

Trends in production and consumption. Use of technology and data. Impact of climate change. Consumer demand for assured provenance and sustainably produced products including in the future those associated with regenerative

6c. Key Texts/Literature

The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources

None

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Describe the basic principles and impacts of conventional agriculture including crop and animal production
2	Knowledge and Understanding	Outline the rationale for sustainable farming practices and the costs and benefits of the approach
3	Knowledge and Understanding	Understand the role of Government policy and regulations in shaping farming practices and discuss the potential for policy initiatives in developing more sustainable methods
4	Knowledge and Understanding	Examine future trends in agriculture and the challenges and opportunities of new technology, climate change and consumer choices

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	36	1-4	3-hour lecture and/or visits
Other teacher managed learning	0	None	None
Student managed learning	114	1-4	Self-directed learning, set reading, background reading, and assignments.
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Coursework	1-3	40 (%)	Fine Grade	30 (%)
Round Table discussion (1 hour) and Executive Summary (500 words)					

Assessment components for Element 010				
Component No.	**Assessment Title**	**Submission Method**	**Weighting (%)**	**Components needed for Mark Calculation?**
010/1	Discussion		50 (%)	All
010/2	Executive summary		50 (%)	

Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Coursework	4-5	60 (%)	Fine Grade	30 (%)
Round Table discussion (1 hour) and Executive Summary (500 words)					

Assessment components for Element 011				
Component No.	**Assessment Title**	**Submission Method**	**Weighting (%)**	**Components needed for Mark Calculation?**
011/1	Discussion		50 (%)	All
011/2	Executive summary		50 (%)	

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]