

Module Title:	Crop Protection Science	
Language of Instruction:	English	
Credits:	5	
NFQ Level:	8	
Module Delivered In	2 programme(s)	
Teaching & Learning Strategies:	Formal lectures will be supplemented by case study and group work. A mixture of formal lectures along with polytunnel practicals and facilitated crop walks and discussion group type activity to encourage the learner to critically analyse aspects of crop production. Learners will follow crop management on their own farms or selected farms in the area and critically analyse the inputs required as well as the production and financial returns. Where changes in management are being made a critical appraisal through group learning will be used. Visiting Lecturers on aspects relating to crop production will be used to broaden the learning experience. Students will also visit selected farms and agri-businesses/seed suppliers to discuss grassland management, identification of productivity and utilization problems and their solution. Cases will be appropriate to the learner group	
Module Aim:	The module aims to build upon the skills acquired from the previous crop production modules. Students will acquire the skillset necessary to sustainably manage the use of Plant Protection Products on farms. This knowledge will be applicable to cereal, oilseeds, legume, root and grassland production.	
Learning Outcomes		
<i>On successful completion of this module the learner should be able to:</i>		
LO1	The use of integrated pest management as it applies to sustainable agricultural systems.	
LO2	Have an appreciation of the most up to date regulations in the area of crop production including environmental and health issues. Critically, the student will acquire the skills necessary to keep abreast of various legislation as it evolves and impacts upon their business.	
LO3	The correct use of plant protection products on farm to ensure human, animal and environmental safety.	
LO4	Have an understanding of the modes of action of plant protection products and how to apply this to sustainable crop production	
LO5	Knowledge of crop physiology and how this attributes to distinctive management strategies for each crop.	
Pre-requisite learning		
Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>		
7833	FARM H2716	Crop production and weed science
7844	FARM H1717	Introduction to Crop Production
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>		
No incompatible modules listed		
Co-requisite Modules		
No Co-requisite modules listed		
Requirements <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>		
No requirements listed		

Module Content & Assessment
Indicative Content
Integrated pest management

• Rotations • Alternative forage selection • Cultural control • Establishment of critical thresholds for the control of crop pests and diseases

Crop Physiology

Photosynthesis. How crops partition biomass. Yield components. Source vs. Sink crops.

Plant Protection Products

Active ingredients. Modes of action. Application rates. Spray timings. Resistance issues

Human, Animal and Environmental Health

The impacts of PPPs on health. Correct usage. Knowledge of product labels.

Legislation governing PPP use

Sustainable Use Directive. Registered Users. Registered Advisors. Equipment Testing. Integrated Pest Management.

Assessment Breakdown	%
Continuous Assessment	70.00%
End of Module Formal Examination	30.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Case Studies	Students will create an Integrated Pest management strategy to cover a number of pests for a farm they are familiar with.	1,2,3	30.00	n/a
Practical/Skills Evaluation	Students will be required to critically assess and show an understanding of plant protection product labels	1,3,4	10.00	n/a
Essay	An essay with a detailed review of literature concerning physiology of crops currently grown in Ireland and how these physiological features effect crop management	1,5	30.00	n/a

No Project

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	Terminal Examination	1,2,4,5	30.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	2.00
Practicals	Every Week	1.00
Independent Learning	Every Week	3.00
Total Hours		6.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EFARG_B	Bachelor of Engineering (Honours) in Agricultural Systems Engineering	7	Elective
CW_SWSFM_B	Bachelor of Science (Honours) in Sustainable Farm Management and Agribusiness	7	Mandatory