Projects Related to Industrial Product Design and fibre based research

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Topic	Student level	Number of students	Required inputs	Projected Outputs	Time of project	Timing
Material centred product design with parts of a hemp plant (fibres, hulls, leaves, etc.) Or waste material from previous processing	1st year undergraduate	120 in groups of 3	• Plant matter, approximately 0.5-2 kg per group • Information for students through a lecture and/or personal feedback (optional)	Conceptual design ideas, varying quality	4- 6 week	UC teaching semester 1, Term 2: May-June
	2nd year undergraduate	60 in pairs		Detailed design ideas including model/prototypes, medium to high quality	6 weeks	UC teaching semester Term 1, February-April
	3rd year undergraduate	5 – 10, working individually		Fully designed product, including prototype and feasibility analysis, high quality	12 weeks	UC teaching semester 2: September-November
Durability/degradability of composites based on hemp fibres/biopolymers in marine/outdoor environments	Summer scholarship, final year undergraduate student	1 -2	• Financial support i.e. through Callaghan or partial support for a UC summer scholarship • Supervisory input • Some fibre material	Preliminary testing on specified detailed area of interest, quality of results is typically varied	10 weeks	December - January
	Masters student		• Supervisory input • Financial support • Some fibre material	Broader research approach, better, more reliable data and testing , typically of high quality	1 year	Typically February - November

High performance materials based on hemp fibre textiles, ideally starting at the grower level by understanding plant variety	PhD	1	• Financial support, for example through Callaghan or the UC Connect scholarship • Material supply • Supervisory input	Detailed research and findings, potentially novel findings/IP, broad range of topics covered with possibility to shape the project in detail, very high quality, first outputs expected after 1- 1.5 years	3-4 years	Any time but usually requires student recruitment
Understanding value perception of local, sustainable, plant fibre based materials and their competitiveness in the local/global market	Possibly maters, ideally PhD	1	• Financial support, for example through Callaghan or the UC Connect scholarship • Material supply • Supervisory input	Detailed research and findings, potentially novel findings/IP, broad range of topics covered with possibility to shape the project in detail, very high quality, first outputs expected after 1- 1.5 years	3-4 years	Any time but usually requires student recruitment
Zero-waste/circular economy product design with hemp. Understanding how the supply chain for hemp needs to be set up to produces valuable products out of the whole plant without creating waste/biomass	PhD	1	• Financial support, for example through Callaghan or the UC Connect scholarship • Material supply • Supervisory input	Detailed research and findings, potentially novel findings/IP, broad range of topics covered with possibility to shape the project in detail , very high quality, first outputs expected after 1- 1.5 years	3-4 years	Any time but usually requires student recruitment