

### Summary Information

Module Code	7125PHASCI
Formal Module Title	Natural Products Formulation
Owning School	Pharmacy & Biomolecular Sciences
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

### Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

### Learning Methods

Learning Method Type	Hours
Lecture	20
Practical	18
Workshop	1

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

### Aims and Outcomes

Aims	To show advanced independent knowledge on / apply the principles of good manufacturing practice to the production and quality control of pharmaceutical products and cosmetics containing natural products
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Independently acquire advanced knowledge and apply specialised methods necessary for the formulation of natural products into valid final products for use by patients and public in general.
MLO2	2	Independently acquire and apply advanced knowledge in the field of natural products as cosmetic ingredients.
MLO3	3	Safely solve -alone or as part of a team- multidisciplinary challenges in the field of natural products formulation even in the absence of complete information.
MLO4	4	Ethically source, systematically locate, critically evaluate, objectively assess and make appropriate use of information from scientific literature and relevant electronic resources.
MLO5	5	Demonstrate the necessary skills to plan, perform, report and interpret the results of laboratory experiments and analyses applied to the formulation of natural products

### Module Content

Outline Syllabus	GMP, ICH & Quality by Design Milling, mixing, granulation, drying Spray-Drying, Freeze Drying Process Scale-up Process Analytical Technology (PAT) Extrusion-spheronisation Tableting, compaction simulation, coating Quality Control Testing Sterile products Natural product as cosmetics
Module Overview	
Additional Information	Practical sessions will involve students developing hands-on experience of the manufacturing procedures in the production of sterile (injectable) and non-sterile (tablets) dosage forms containing natural products as well as the pharmacopoeial standard QC testing procedures used. Exam will assess students understanding of the principles through data interpretation/problem solving questions

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Exam	60	2	MLO1, MLO2
Report	Report	40	0	MLO3, MLO4, MLO5

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Touraj Ehtezazi	Yes	N/A

#### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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