

Liverpool John Moores University

Title: Natural Products Formulation
Status: Definitive
Code: **7125PHASCI** (128067)
Version Start Date: 01-08-2021

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
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Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 41

Total Learning Hours: 200 **Private Study:** 159

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	20
Practical	18
Workshop	1

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	examination on course material	60	2
Report	Report	report on Innovative Cosmeceutical Product (Pitch associated counts towards 1/4 of the assignment marks)	40	

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

Learning Outcomes

After completing the module the student should be able to:

- 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.
- 2 Independently acquire and apply advanced knowledge in the field of natural products as cosmetic ingredients.
- 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.
- 4 Ethically source, systematically locate, critically evaluate, objectively assess and make appropriate use of information from scientific literature and relevant electronic resources.
- 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

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Exam	1	2		
Report	3	4	5	

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*

Learning Activities

Lectures covering each topic within the module.

Practical sessions giving students first-hand experience of relevant manufacturing techniques.

Performing laboratory based activities plus writing reports, which includes data analysis.

Workshops on ICH guidelines and their application in practice and to support analysis of data generated during practical sessions.

Report Pitch associated with the report on Innovative Cosmeceutical Product (10% weighting).99

Notes

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