Preliminary timetable

Part One: Current science, skin permeation, and enhancement approaches

>Day One

Topic 1: Skin – Fundamentals

Lecture 1 – Skin structure, function, and permeation (50 min presentation + 10 min discussion)

Lecture 2 – Passive skin permeation enhancement (50 min presentation + 10 min discussion)

Lecture 3 – Electrical and Physical Methods of Skin Penetration Enhancement (50 min presentation + 10 min discussion)

Lecture 4 – Clinical Applications of Microneedles (50 min presentation + 10 min discussion)

Tutorial 1 - Guidelines for preparation of scientific projects (60 min)

>Day Two

Topic 2: *In vitro* skin permeation methodology

Lecture 5 – Skin Permeation Assessment: Tape Stripping and Microdialysis (50 min presentation + 10 min discussion)

Lecture 6 – Skin Permeation: Spectroscopic Methods (50 min presentation + 10 min discussion)

Lecture 7 – Skin Permeation Assessment in Man: *In Vitro – In Vivo* Correlation (50 min presentation + 10 min discussion)

Lecture 8 – Cytotoxicity assessment: 2D and 3D in vitro models (50 min presentation + 10 min discussion)

Part Two: Topical and Transdermal Product Development

>Day Three

Topic 3: Formulation and manufacturing technologies

Lecture 9 – From concept to approval: regulatory aspects of drug development for dermal products (50 min presentation + 10 min discussion)

Lecture 10 – Safety-by-design considerations for novel excipients and new formulations (50 min presentation + 10 min discussion)

Lecture 11 – Topical and transdermal products formulation development (50 min presentation + 10 min discussion)

Lecture 12 – Does size matter? Nanotechnology in skin delivery (50 min presentation + 10 min discussion)

Quiz – Do I love my skin barrier? How to repair. How to maintain (30 min)

>Day Four

Topic 4: Pre-clinical and Clinical evaluation

Lecture 13 – New frontiers in skin targeted therapies (50 min presentation + 10 min discussion)

Lecture 14 – Sensitivity and irritation testing (50 min presentation + 10 min discussion)

Lecture 15 – Clinical trials (50 min presentation + 10 min discussion)

Lecture 16 – Current and Future Trends: Skin Diseases and Treatment (50 min presentation + 10 min discussion)

Tutorial 2 - *In vivo* models for skin diseases (60 min)

>Day Five

Topic 5: New product development: understanding the market opportunity

Lecture 17 – **Design of hydrogels for skin 3D bioprinting** (50 min presentation + 10 min discussion)
Lecture 18 – **Phytotherapy in cosmetics and therapeutics** (50 min presentation + 10 min discussion)
Lecture 19 – **Topical siRNA delivery systems** (50 min presentation + 10 min discussion)
Tutorial 3 - **Scientific projects pitch presentation** (60 min)