



## HPLC Method Development

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For the experienced chromatographer, this course provides a step-by-step explanation of logical HPLC method development.

The course includes detailed discussion of the crucial aspects of method development with relevant examples used to demonstrate theoretical principles and software based exercises to give a deeper understanding.

## Course Contents

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### Objectives

- Establishing method objectives
- Literature searching
- What is known?
- What needs to be known?

### Sample Preparation

- Sample clean up
- Analyte extraction
- SPE explained
- Mobile phase selection
- Optimising for sample type / application

### System Choices

- How to choose the appropriate injector/detector
- Typical operating conditions
- Developing and optimising injection conditions
- Mobile phase flow & band broadening (Van Deemter)
- Modes of chromatography

### Choosing a Column & Mobile Phase

- Choosing the correct phase
- Computer based tools for column choice
- Effects of column geometry
- Review of modern stationary phases
- Isocratic vs. Gradient operation
- Theory & development of eluent gradients

### Optimisation Strategies

- Capacity factor, Efficiency, Resolution, Selectivity
- Resolution Equation
- Step-by-step guide for logical method development
- Example method developments

### Quantitation & System Characterisation

- Single and multi-level calibration
- Internal standards
- System suitability testing
- Introduction to validation



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