

Name	Porous and dispersed media
ECTS credits	4
Year / Semester	II / 1 ^o
Specific learning outcomes	<p>On successful completion of this module students should be able to:</p> <p>1 – Develop program in MATLAB language (vector, matrix, for loop, if-then-else loop, functions, graphs, etc...),</p> <p>2 – Use MATLAB functions such as : interpolation, integration, derivation, resolution of non-linear equations, resolution of differential equations, optimization etc...</p> <p>3 – Participate in class discussions with colleagues and with teachers</p>
Contents	<p>1.Characteristics of porous media; particle morphology; population of particles; texture of particles stack; 2.Flow through porous media; Darcy law; models representative of porous media; 3. Motion of particles in fluid; 4.Sedimentation; 5. Fluidisation; 6.Liquid filtration.</p>
Teaching and learning methods	Face to face, 45 hours
Teaching techniques	Practical classes, 45 hours
Assessment methods	<p>Written.</p> <p>A first-term written test and a second-term written test are not foreseen.</p> <p>The first-term written test will be devoted to the assessment of the level of achievement of LOs 1, 2 and 3.</p> <p>The second term written test will be devoted to the assessment of the level of achievement of LOs 4, 5 and 6.</p>
Assessment criteria	<p>In the first-term test students should demonstrate their ability to calculate the pressure drop across a fixed bed. In the second term test students will be able to develop the equations of motion specific at each operation (sedimentation, fluidisation and liquid filtration) and also calculate the parameters like minimum fluidising velocity, the drop in pressure from the feed to the far side of the filter medium, the area of the filtering surface, the resistance of the filter cake, the resistance of the filter medium.</p> <p>Finally, students' ability to participate in class discussions with teachers and colleagues will be assessed in practical classes.</p>
Assessment metrics	Attribution of a final grade
Criteria of attribution of the final grade	<p>The grade goes from 1 (minimum) up to 20 (maximum). The minimum threshold to pass is 7. To pass the exam students should obtain the minimum evaluation in all the assessments.</p> <p>The final grade will be determined according to the following rules:</p> <ul style="list-style-type: none"> - Written exam: 50% - term written test: 20% - Practical classes : 30%
Preparatory course units	N.A.
Didactic material	J. M. Coulson & J. F. Richardson "Chemical_Engineering_Volume_2", Butterworth-Heinemann