

<b>Course Code</b>	CP202			
<b>Course Title</b>	Separation Process Principles			
<b>No. of Credits</b>	3			
<b>Pre-requisites</b>	None			
<b>Compulsory/Optional</b>	Compulsory			
<b>Aim(s):</b> To empower the learner with the fundamentals of separation processes in Chemical Engineering.				
<b>Intended Learning Outcomes:</b> On successful completion of the course, the students should be able to ILO 1: Estimate compositions in liquid-vapor mixtures using phase equilibrium theories. ILO 2: Apply separation principles on equilibrium separation processes. ILO 3: Apply mass transfer theories to estimate dimensions of continuously contact equipment. ILO 4: Use pilot-plant units and estimate parameters required for the design of separation Processes.				
<b>Topics</b>	<b>Time Allocation/Hours</b>			
	<b>L</b>	<b>T</b>	<b>P</b>	<b>A</b>
<ul style="list-style-type: none"> <li><b>Equilibrium between phases</b> Equilibrium stage concept, cascades of stages, stage efficiency, and applications in the separation of components by binary distillation, absorption, stripping, extraction and leaching</li> </ul>	12	03		08
<ul style="list-style-type: none"> <li><b>Mass transfer</b> Diffusion. Theory of interface mass transfer. Mass transfer coefficients, overall coefficients, and transfer units. Application in absorption, extraction and adsorption. Simultaneous heat and mass transfer in gas-liquid contacting, and solids drying. Concept of continuous contacting equipment.</li> </ul>	12	03		04
<ul style="list-style-type: none"> <li><b>Laboratory exercises carried out with pilot-plant units</b></li> </ul>			18	
<b>Total equivalent hours</b>	<b>24</b>	<b>06</b>	<b>09</b>	<b>06</b>
<b>Recommended Texts:</b> <ul style="list-style-type: none"> <li>Sinnott, R. K., Richardson's Chemical Engineering Design, vol. 6, 3rd ed. Oxford: Butterworth-Heinemann, 1999</li> <li>Richardson, J. F., Harker, J. H., Backhurst, J. R., &amp; Coulson, J. M.. Richardson's Chemical Engineering Design, Vol. 2. Oxford: Butterworth-Heinemann.2002.</li> <li>Ghosal, S.K. Sanyal S.K. Datta. and S., Introduction to Chemical Engineering, New Delhi, Tata McGraw-Hill Publishing Company Limited, 2006.</li> </ul>				
<b>Assessment</b>	<b>Percentage Mark</b>			
<b>In-course</b>			50	
Tutorials/Assignments/Quizzes/Laboratory work	25			
Mid Semester Examination	25			
<b>End-semester</b>			50	