

<b>5<sup>th</sup> Semester</b>	<b>RML5C003</b>	<b>Physical Separation Processes</b>	<b>L-T-P 3-0-0</b>	<b>3 Credits</b>
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**Module I: (8 Hours)**

Gravity concentration: principle, types. Jigging: Principle and operation of jigging, types of jig, Advanced gravity concentration equipment.  
Fluidized bed separator: principle and types

**Module II: (8 Hours)**

Thin stream separation: classification, Principle of shaking table, separation of particles using Wilfley Table, strake table, Mozely Mineral Separator: Principle, Different factors affecting thin stream separation  
Principle of Spiral concentrator, Mechanized and pinched sluices, Reichert cone and Vanners

**Module III: (8 Hours)**

Centrifugal and pneumatic concentrator, Multi-gravity separator, Floatex density separator, knelson concentrator, Falcon separator, Kelsey Jig

**Module IV: (8 Hours)**

Magnetic separation: Classification of minerals on basis of magnetic properties, principle, types. Davis tube magnetic separator, Dry and wet magnetic separation, Low and high intensity magnetic separators, WHIMS. Applications of magnetic separation

**Module V: (8 Hours)**

Superconducting and electrostatic separator: Principle, types, High tension separator, Eddy current separation and Dielectric separation  
Ore sorting: principle; types and application.

**Books:**

- [1] Wills B.A. and Napier-Munn T., Mineral Processing Technology, Elsevier Science & Technology Books
- [2] Gaudin A.M., Principles of Mineral Dressing, McGraw Hill Book Company, 1971
- [3] Jain, S.K., Ore Processing, Oxford – IBH Publishing, 1984