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| **Course Name:** Chemical Separation and Chromatographic Methods |
| **Course Code:** Chem 458 |
| Faculty members (male & female) assigned to teach the course (including coordinators for service courses):   1. Prof. Ahmed-Yacine Badjah-Hadj-Ahmed 2. Dr. Wedad Tohami Alonazi 3. Dr. Ahmad Aqel Ifseisi |
| **Course Syllabus in details**  -Introduction for separation methods  -Theory of separation methods  -Classifying separation techniques  -Separation and purification  -Separation and preconcentration  -Extraction methods  -Partition theory  -Liquid-liquid extraction  -Solid-phase extraction  -Gas-solid extractions  -Continuous extractions  -Importance of chromatographic methods  -Classification of chromatographic methods  -Stationary phase and mobile phase  -Paper chromatography  -Thin layer chromatography  -Column chromatography  -Liquid chromatography  -Adsorption chromatography  -Partition chromatography  -Ion exchange chromatography  -Size exclusion chromatography  -High performance liquid chromatography  -HPLC physical components  -Gas chromatography  -GC physical components  -Evaluation of chromatographic column  -Factors influencing the separation  -Detection methods  -Applications: qualitative and quantitative analysis |

**Text books, notebooks, and references**

-Ibrahim Al-Zamil, “Analytical Chemistry, Instrumental Analysis” 5th Ed., Al-Khrigi Publisher, 2015.

-Gary D. Christian, Purnendu K. Dasgupta, Kevin A. Schug, Analytical Chemistry, 7th ed., 2013, Wiley, USA.

-Douglas A. Skoog, F. James Holler, Stanley R. Crouch, Principles of Instrumental Analysis, 7th ed., 2018, Cengage Learning, USA.

-Web of Science, Elsevier Academic Press.

-Encyclopedia of Chromatography.