

CENTRAL UNIVERSITY OF KERALA
DEPARTMENT OF CHEMISTRY
M.Sc. CHEMISTRY

Course Code	Course Title	Contact hrs. / wk.				Credits
		Lect.	Lab	Tut	Total	
CHE 5191	Inorganic Chemistry Laboratory- I		5			2

Lec = Lecture, Tut = Tutorial, Lab = Practical

This is a participatory, experimental, and [employability based skill development course](#).

Course objective:

Objective of the course is to develop practical and laboratory skills of the student.

By completing this course, students will obtain the following course/learning outcomes:

- They will understand how to estimate / quantify the presence of metal ions in a given mixture
- [Students will be trained to carry out the experiments on their own which helps them to attain desired technical / practical skills.](#)
- [Apply essential chemical concepts and math skills toward successful completion of future science and applied science courses.](#)

Grading:

Laboratory Experiments – 20%

Record of observations and reporting – 10%

Viva evaluation – 10%

End Semester Assessment – 60%

CHE 5191 Inorganic Chemistry Laboratory- I

Syllabus Modules:

- Reactions of titanium, vanadium, chromium, manganese, iron, cobalt, nickel and copper ions
- Reactions of some less common metal ions (Tl, W, Mo, V, Zr, Th, U).
- The spot test technique for metal ions.
- Semi-micro qualitative analysis of common and rare cations in a mixture.
- Ion exchange separations (Zn^{2+} , Mg^{2+}).

- Solvent extraction (Fe).
- An open-ended experiment involving analysis (e.g., Double salt formation and ion-exchange separation of oxidation states).
- Estimation of metal ions by complexometric and cerimetric titrations.
- Estimation of Mg, Ca, and Mn
- Hardness of water.

References

1. G. Pass and H. Sutcliffe. Practical Inorganic Chemistry, 2ndEdn., Chapman & Hill, 1974.