

## Planning and Quality Assurance Affairs

Form (A)

### Course Specifications

#### General Information

Course name	optical and mineralogy
Course number	GEOL2346
Faculty	
Department	
Course type	Major Needs
Course level	2
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

#### Course Objectives

- 1 - Study minerals under the microscope, visual discrimination minerals and their properties, the study of the properties of light and the nature of light, polarized microscope, study Alaizotwin Alaizotwin and non-metals
- 2 - Crystalline materials, amorphous materials, the system crystalline metals, crystalline factions, metals and chemical components, metals groups, the properties of natural minerals

#### Intended Learning Outcomes

Knowledge and Understanding	<ul style="list-style-type: none"> <li>* Discrimination student of metals under the microscope, the students knowledge of light and its properties, knowledge of the properties of metals and distinguished under the microscope and the ability of the student to know the dark minerals from transparent Alaazutrobah metals and minerals from third parties Aazutrobah metals.</li> <li>* The students ability to learn crystalline material, the students ability to learn crystal system of each metal, crystalline factions know the details, projection Alasthyrogerava of crystals, minerals and natural properties, minerals groups, chemical components, the students ability to write the chemical formula for any metal and name.</li> <li>* A brief properties of light , refractometry ,isotropic material (optics, Indicatrix and isotropic vs. Anisotropic) Anisotropic minerals introduction, ,packing, interference phenomena, Optical properties (Extinction, Accessory plates ,vibration direction in minerals, relief and Pleochroism, Uniaxial minerals and Biaxial Minerals, optics, optic sign ,Indicatrix ,extinction, Pleochroism, interference figures, optic axis figure, interference figure ,formation of the isogyres ,optic sign determination, flash figure, summary of uniaxial and biaxial interferons figures, rotation of the isogyr, obtuse bisectrix figure (Bxo) and properties of uniaxial and biaxial minerals. Practical part The practical study includes a description of thin sections of important minerals (isotropic and anisotropic minerals).</li> <li>* The practical study includes study of the seven crystal system, description of hand specimens of minerals.</li> </ul>
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## Teaching and Learning Methods

- 1 - Lectures on crystals and amorphous metals and materials and discussions especially the crystal and metal, computer use in projection, slides to a statement crystalline factions, writing reports for each platoon

## Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
First half exam	seven week	20
First half and the second from 20	Fourteenth week	30
Final exam	sixteenth week	50

## Books and References

Course note	Crystallography, Mineralogy, crystalline factions, writing crystalline material, writing solids materials science Optics minerals, metals and non-Alaizotropic Alaizotropic, optics. The main contents of the course
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