

مختصر توصيف المقرر

:(Course Information)

معلومات المقرر *

اسم المقرر:	مختبر فيزياء الجوامد
رقم المقرر:	فيز 4972
اسم ورقم المتطلب السابق:	فيز 3712
اسم ورقم المتطلب المرافق:	--
مستوى المقرر:	السابع
الساعات المعتمدة:	2 (0+4+0)
Module Title:	Solid State Physics Lab
Module ID:	PHYS 4972
Prerequisite :	PHYS 3712
Co-requisite :	--
Course Level:	Seventh
Credit Hours:	2 (0+4+0)

Module Description

وصف المقرر :

<p>Description of theoretical phenomenon and considerations for all experiments. Thermoelectric effect in semiconductors (calculation of Seebeck, Peltier and Thomson coefficients) Solar Cells. Determination of the thermal coefficient of a noble metal (platinum) by computer. X-ray Diffraction and calculation of Lattice parameters in NaCl single crystal X-ray ionization chamber Hall Effect Diamagnetism and Paramagnetism</p>
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Module Aims

أهداف المقرر :

1	Understanding the main physical phenomenon and learning how to calculate the physical quantities related to the experiments and comparing them with the known values.	1
2	Forcing students to solve the weekly questions which cover the experimental theories and acquiring the physical meaning of the experiments.	2
3	Good handling with systems and taking data.	3
4	Learning how to be precise and care with systems.	4
5	Doing experiments under supervision of the lecturers.	5

Learning Outcomes:

مخرجات التعليم:

1	Assurance of the basic knowledge of the main physical phenomenon for solid state courses.	1
2	Gather experimental data of experiments.	2

3	Develop and implement experimental procedures.	3
4	Operate instruments and equipment's correctly.	4
5	Choose the appropriate scale to analyze data and calculate the unknown parameters.	5

Course Contents:

محتوى المقرر:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
4	1	Description of theoretical phenomenon and considerations for all experiments.
8	2	Thermoelectric effect in semiconductors (calculation of Seebeck, Peltier and Thomson coefficients)
4	1	Solar Cells
4	1	Determination of the thermal coefficient of a noble metal (platinum) by computer
8	2	X-ray Diffraction and calculation of Lattice parameters in NaCl single crystal
8	2	X-ray ionization chamber
8	2	Hall Effect
8	2	Diamagnetism and Paramagnetism

Textbook and References:

الكتاب المقرر والمراجع المساندة:

سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
			Lab. Manuals
سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
2000	Gorden & Breach Scienc	Mircea S Rogalski, Stuart B Palmer	Solid State Physics
2004	John Wiley & Sons	Kittel, Charles.	Introduction to Solid State Physics.