منهـــــج دراســـــة الماجســـتير
الفصـــل الدراســـي الثاني

الرمز	عدد الوحدات	عدد الساعات الأسبوعية		الموضوع
		عملي	نظري	
511	3	-	3	ميكانيك إحصائي
512	3	-	3	كهرومغناطيسية متقدم
513	2	2	1	تقنيات تحليل
514	2	-	2	اختياري
515	1	-	1	اللغة الانكليزية
516	1	2	-	برمجة متقدمة وانترنت
	12	4	10	مجموع الوحدات / الساعات

Lecturer Name	Advanced Electromagnetics Theory (MSc Students)
Subject Name	Maxwell's Equations and its Solutions
Academic Year	2023- 2024, 2nd Semester
Credit Hours	3

Students do study the following fields:

1- Electromagnetics

2- Maxwell's Equations and its Applications.

3- Relativistic Electrodynamics

Course Outcomes:

1- Study of Advance Electrodynamics theory Physics and Applications

2- Electromagnetics waves physics and properties

3- Relativistic Electrodynamics

Weekly Teaching Plan

Week 1	Maxwell's Equation
Week 2	Application on Maxwell's Equation
Discussions	

Week 3	Gauge Transformation
Week 4	Application
Second Quiz	
Course Final Term Exam	

Computer Usage: Good
Teaching Techniques: Explanation
Assessment methods: Presentations
References (text book):

1- Introduction to Electrodynamics, David 1. Griffiths and Reed College. y Prentice-Hall, Inc., 1999.
2- Classical Relativistic Electrodynamics, Toshiyuki Shiozawa, Springer, 2004
3- Introduction To Quantum Field Theory, P.J. Mulders, 2003

Lecturer Name	Cold Plasma Physics(Msc.)
Subject Name	Elective Subject
Academic Year	2023- 2024, 2nd Semester
Credit Hours	3 hours

Students do study the following fields:

1. Plasma Physics.
2. Charged Optics Physics.

Course Outcomes:
Mastering Cold Plasma Physics and Applications
Weekly Teaching Plan

Weeks 1, 2	Literature review introduction
Weeks 3, 4	Plasma Applications.
First Quiz	
Weeks 5, 6	Cold Plasma Generations
Weeks 7, 8	Cold Plasma interaction with the matter
Second Quiz	
Weeks 9, 10	Cold Plasma sanitizations
Weeks 11, 12	Project Discussion
Third Quiz	
Weeks 13, 14	Project Discussion
Course Final Term Exam	

Computer Usage: Good
Teaching Techniques: Explanation
Assessment methods: Presentations

References (text book) :

- Kushner, Mark J. "Plasma physics and engineering." Cambridge University Press, 2005.
- Fridman, Alexander, et al. "Plasma medicine." John Wiley & Sons, 2013.
- Graves, David B., et al. "Plasma Medicine: Applications of Low-Temperature Gas Plasmas in Medicine and Biology." Cambridge University Press, 2018.

وصف المقرر الدراسي

Lecturer Name	Haitham Abdelhameed Ahmad Al-Rawachy
Subject Name	Statistical mechanics /Msc.
Academic Year	2023 – 2024
Credit Hours	3

Students do study the following fields:

1. Maxwell-Boltzmann Statistics
2. Applications of Maxwell-Boltzmann Statistics
3. Bose-Einstein Statistics
4. Fermi-Dirac Statistics
5. Temperature and Entropy
6. The Thermodynamics of Gases

Course Outcomes:

1. This subject represents an attempt to give an introduction to statistical physics in a form which is suitable for postgraduate students.
2.The material has been chosen in order to emphasize the basic methods of statistical physics and those results which are of particular importance for physicists.
3. The applications of statistical physics which have been given, both in the text and as problems, have been chosen to illustrate the methods of statistical mechanics and statistical thermodynamics rather than to provide a comprehensive survey of these applications.

Weekly Teaching Plan

Week 1, 2	Maxwell-Boltzmann Statistics
Week 3,4	Applications of Maxwell-Boltzmann Statistics
First Quiz	
Week 5,6	Bose-Einstein Statistics
Week 7,8	Fermi-Dirac Statistics
Second Quiz	
Week 9,10	Fermi-Dirac Statistics
Week 11,12	Temperature and Entropy
Third Quiz	

Week 12, 13	The Thermodynamics of Gases
Week 14,15	The Thermodynamics of Gases
Course Final Term Exam	

Computer Usage: Good
Teaching Techniques: Explanation
Assessment methods: review papers in statistical physics

References (text book) :

1- An Introduction to Statistical Physics for Students. A. J. Pointon 1967