

للعام الدراسي

الجامعة : الجامعة

الكلية / المعهد : التقنية / الهندسة

القسم العلمي : هذه ثغرات الأجزاء الطبية

تاريخ ملء الملف : ٢٠٢٦ / ٧ / ٢

CS

التوقيع :

م. عصام خليل ابراهيم
معاون العميد للشؤون العلمية

اسم المعاد

اسم رئيس القسم : د. محمد عبد الله

التاريخ :

التاريخ : ٢٠٢٦/٧/٥

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي:

التاريخ / /

التوقيع



أ.م.د. مازن عبداللّٰه علوان

عميد الكلية التقنية الهندسية

$$C. \sqrt{v}/0$$


نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Electromagnetic Fields	Module Delivery			
Module Type	Core	☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar			
Module Code	MIET 3103				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		UGIII	Semester of Delivery		5
Administering Department		MIET	College	EETC	
Module Leader	Alyaa G. Darweesh		e-mail	alyaa.ghazi.darweesh@sa-uc.edu.iq	
Module Leader's Acad. Title		Asst. Lec.	Module Leader's Qualification		MSc
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date			Version Number		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Engineering Mathematics	Semester	UGII-S3
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. To learn about Vector Algebra 2. To learn about Coordinate Systems 3. To know Coulomb's Law and Electric Field Intensity 4. To recognize the types of fields due to different kinds of charges 5. To recognize the Electric Flux Density, Gauss's Law, and Divergence 6. To learn about Maxwell's equations 7. To recognize the energy expended in moving a point charge in an electric field 8. To learn about the potential difference and potential 9. To learn about the steady magnetic field
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Learn about the General review in Vector Algebra 2. learn about Coordinate Systems 3. Learn about the General review in electrostatics. 4. Learn about Coulomb's Law and Electric Field Intensity 5. Recognize the types of fields due to different kinds of charges 6. Learn about Gauss's law. 7. Learn about Maxwell's equations 8. Recognize the energy and potential difference 9. Recognize the conservative property 10. To learn about the potential gradient 11. Learn about the steady magnetic field 12. Recognize the Biot-Savart law, Ampere's law, Stokes' Theorem, Magnetic flux, and magnetic flux density
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: 1- Vector Algebra, Dot product, Cross product, cylindrical system, and spherical system [8 H]. 2- Electrostatic, Electric charge, Faraday's experiment, Coulomb's law, Electrical field intensity, and examples [12H]. 3- Electric Flux Density and Gauss's Law with examples [8 H]. 4- Energy and Potential with examples [12 H]. 5- magnetic field and Maxwell's equations, Faraday's LAW, Moving Conductor in a Magnetic Field, Maxwell's equations in pointing form, Wave equations with examples [4 H]. 6- Biot-Savart law, Displacement Current and Conduction Current (Ampere's Law), Stokes' Theorem, Magnetic flux, and magnetic flux density [8 H].

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Lectures - means of clarification - intellectual questions - scientific exhibitions - scientific competitions
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Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	46	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	10 % (10)	3,5,7,9,11	LO # 1, 2 LO # 3, 4 LO # 5, 6 LO # 7, 8
	Assignments	2	10 % (10)	4,10	LO # 3-6, and 6-9
	Projects / Lab.	10	10 % (10)	Continuous	
	Report	1	10 % (10)	14	LO # 1-12
Summative assessment	Midterm Exam	2hr	10 % (10)	7	LO # 1-7
	Final Exam	4hr	50 % (50)	16	ALL
Total assessment			100 % (100)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Vector Algebra
Week 2-3	Coordinate Systems
Week 4	General review of electrostatic
Week 5	Coulomb's Law
Week 6-7	Electric Field Intensity
Week 8-9	Electric Flux Density, Gauss's Law, divergence
Week 10	Midterm exam
Week 11-12	Potential and potential difference
Week 13	Steady magnetic field
Week 14-15	Magnetic flux and magnetic flux density

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1-2	General review of electrostatic
Week 3	Coulomb's Law
Week 4	Gauss's law
Week 5	Maxwell's 1st equation
Week 6-7	Electric Field Intensity
Week 8-9	Electric Flux Density
Week 10	Midterm exam
Week 11	Potential and potential difference
Week 12	Steady magnetic field
Week 13-14	Magnetic flux and magnetic flux density

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Engineering Electromagnetic (eighth edition – by William H. Hayt, JR)	yes
Recommended Texts	Fundamentals of Engineering Electromagnetics (by David K. Cheng)	yes
Websites	1. https://www.coursera.org/search?query=Electromagnetic%20Fields&=&index=prod_all_launched_products_term_optimization 2. www.tallguide.com 3. www.ainfoinc.com 4. www.millitech.com 5. www.rfcafe.com 6. www.globalspec.com	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A- Excellent	امتياز	90 - 100	Outstanding Performance
	B- Very Good	جيد جدا	80 – 89	Above average with some errors
	C- Good	جيد	70 - 79	Sound work with notable errors
	D- Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E- Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX- Fail	راسب (قيد المعالجة)	(45-49)	More work required, but credit awarded
	F- Fail	راسب	(0-44)	A considerable amount of work is required
Note: Marks with Decimal places above or below 0.5 will be rounded to the nearest full mark (for example, a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54). The University has a policy NOT to condone "near-pass fails," so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				