

**Ministry of Higher Education and Scientific Research
Academic Supervision and Evaluation Authority
Quality Assurance and Academic Accreditation Department
Accreditation Department**



Academic Program and Course Description Guide

2025 – 2026

the introduction:

The educational program is a coordinated and organized package of courses that include procedures and experiences organized into study modules. The primary purpose is to build and refine graduates' skills, making them qualified to meet the requirements of the labor market. It is reviewed and evaluated annually through internal or external audit procedures and programs, such as the External Examiner Program.

The academic program description provides a brief summary of the program's main features and courses, indicating the skills students are expected to acquire based on the program's objectives. The importance of this description is evident in that it represents the cornerstone for obtaining program accreditation. It is written by faculty members under the supervision of the academic committees in the academic departments.

This guide, in its second edition, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the new developments and changes in the educational system in Iraq, which included a description of the academic program in its traditional form (annual, semester) in addition to adopting the description of the academic program circulated pursuant to the letter of the Department of Studies TM3/2906 dated 5/3/2023 with regard to programs that adopt the Bologna process as the basis for their work.

In this context, we cannot but emphasize the importance of writing descriptions of academic programs and courses to ensure the smooth running of the educational process.

Concepts and terms:

Academic Program Description: The academic program description provides a concise summary of the program's vision, mission, and objectives, including a detailed description of the targeted learning outcomes based on specific learning strategies.

Course Description: Provides a concise summary of the course's key features and the learning outcomes expected of the student, demonstrating whether the student has made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious vision for the future of the academic program to be .an advanced, inspiring, motivating, realistic, and applicable program

Program mission: It briefly explains the objectives and activities required to achieve them, and also identifies the program's development paths and directions.

Program objectives: These are statements that describe what the academic program intends to achieve within a specific time period and are measurable and observable.

Curriculum structure: All courses/subjects included in the academic program according to the approved learning system (semester, annual, Bologna track) whether required by (ministry, university, college, or scientific department) with the number of academic units.

Learning outcomes: A consistent set of knowledge, skills, and values acquired by the student after successfully completing the academic program. The learning outcomes for each course must be determined in a way that achieves the .program's objectives.

Teaching and learning strategies: These are the strategies used by faculty members to develop student teaching and learning. They are plans followed to achieve learning objectives. They describe all classroom and extracurricular activities to achieve the program's learning outcomes.

Academic Program Description Form

University Name: Al-Kitab Private University

College/Institute: College of Science

School Department: Department of Mathematics

Academic or Professional Program Title: Mathematics

Final Degree Title: Bachelor of Science in Mathematics

Academic System: Bologna Path

Description Date: Date the University President approved the academic program description

File Completion Date: 2025/11/5

:Signature

Name of Department Head: Asst. Prof. Dr. Sufyan
Abbas Wahib

Date: 2025/11/9



:Signature

Name of Academic Assistant Dr. Akram

:Hatem Shadar

:Date: 2025/11/9



File reviewed by

the Quality Assurance and University Performance Division

Name of the Director of : Dr. Salam Adel Ahmed

Date : 2025/11/15

Signature :



Approval Of The Dean

1. Program vision

Preparing qualified graduates in mathematics, capable of interacting with the requirements of the era and technology, and contributing to building Iraqi society on sound scientific, ethical and health foundations, supporting the research and development process in Iraq, and contributing to building a healthy society.

1. Program message

Providing an educational and technical research environment that stimulates learning and creativity, contributing to the preparation of highly qualified graduates, achieving effective local and international scientific twinning, and strengthening partnerships with community sectors and international institutions in related fields.

1. Program objectives

1. Providing graduates with the necessary scientific knowledge in mathematics, aiming to deepen their understanding of the methodology of analysis, criticism, and scientific research, and to use these skills to study and serve society in the health and education sectors.
2. Empowering graduates with practical and research skills that qualify them to excel and succeed in their professional lives, enabling them to enroll in distinguished graduate programs.
3. Enabling students to train and gain practical experience on a wide range of modern technologies and using advanced scientific equipment in various mathematical disciplines.
4. Increasing awareness of mathematics in society and its role in driving health, development, and national production.
5. Developing students' skills in using modern research resources to enable them to build essential scientific skills, such as scientific writing skills,

discussion skills, constructive criticism, and scientific communication.

6. Developing the department to become a distinguished center for mathematical sciences research and graduate studies

Preparing students for positions in the industrial and government sectors, and in biological work fields, whether professional, research, or academic.

1. Program accreditation

Is the program accredited? And by which authority? There is no program accreditation because the department was established in 2023–2024...and is twinned with a similar department at the University of Kirkuk.

1. Other external influences

Is there a sponsor for the program

Ministry of Health, Ministry of Higher Education and Scientific Research

1. Program structure

| comments* | percentage | Study unit | Number of courses | Program structure |
|-----------|------------|------------|-------------------|----------------------------|
| | | | | Institutional Requirements |
| | | | | College Requirements |
| | | | | Department Requirements |
| | | | | Summer Training |
| | | | | Other |

Notes may include whether the course is core or optional*

1. Program Description

| Credit hours | | Course name | Course code | Year/Level |
|--------------|-----------|-------------|-------------|------------------------------|
| Theoretical | practical | | | First Level/2024–2023 |
| | | | | |

| 1. Expected learning outcomes of the program | |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| knowledge | |
| Learning Outcome Statement 1 Acquire discrimination skills in mathematics and how to deal with them | Learning Outcomes 1 Students who have obtained a Bachelor's degree in Mathematics are expected to have acquired some skills in .mathematical sciences |
| Skills | |
| Learning Outcome Statement 2 Acquire mathematical skills in computer labs | Learning Outcomes 2 Acquire some skills in mathematical sciences |
| values | |
| Learning Outcome Statement 4 Understanding the process of working as a team, away from personal interests | Learning Outcomes 4 |
| Learning Outcomes Statement 5 | Understand the communication process at work |

| 1. Teaching and learning strategies |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Teaching and learning strategies and methods adopted in implementing the program in general.</p> <p>2. Incorporating various methods into the curriculum, highlighting the advantages and disadvantages of each method.</p> <p>3. Incorporating real research problems into the curriculum (specific to the subject) to motivate students to express their opinions and propose solutions for the best approach to addressing problems and challenges.</p> <p>4. Adopting a continuous improvement approach for all various activities and events to ensure the achievement of the college's mission and approved objectives, in accordance with quality standards (such as workshops and field trips).</p> |

Evaluation methods

.Implementing it in all stages of the program in general

- First, practical study:
- Student response through active participation in the lecture and group critique of student projects.
- Monitoring the presentation of the practical and theoretical project (which proceeds in stages leading up to the final stage) through individual and group critique and evaluation of each stage.
- Evaluating classroom tests and comparing the creative level of proposed solutions with the solutions of each student's annual projects.
- Group critique at the end of each project to assess the overall strengths and weaknesses of the students' solutions.
- •Second, theoretical study:
- Student response through student participation during the discussion of information in lectures.
- Conducting midterm and final exams (which give instructors the authority to take additional exams in the event of a delay in a particular subject, to improve student results. The instructor is free to estimate the load for that exam compared to the rest of the exams. Exam results are presented to students for review and to learn from any errors that can be overcome).
- Final exam:
- Third: Summer Training:
- Appropriate training locations are selected to suit the department's specializations. Summer training is considered a basic requirement for a successful student's transition from the third to the fourth grade. Otherwise, the student must complete the training the following year to ensure their transition to the fourth grade.
- Fourth: Monitoring and tracking student progress:
- Student activity and participation during lectures.
- The student's level of interest in submitting additional assignments.
- The student's completion of academic reports that cover more in-depth topics than those required by the curriculum, broadening their horizons and training them in scientific research.
 - ✓ The student's eagerness to attend lectures despite various difficulties.
 - ✓ Through short surprise exams, the student's academic progress and comprehension of the course are evaluated.
 - ✓ A group of committees are formed each academic year to monitor student attendance and absences. Administrative orders are issued at alternating intervals regarding absence rates and warnings. The

matter is followed up by the department head and the course instructor, in agreement with faculty members.

| Faculty .1 .1 | | | | | |
|---------------------|-------|-------------------------------------------|--------------------|--------------|-------------------------------|
| Faculty members | | | | | |
| Faculty preparation | | Special requirements/skills (if any) | Specialization | | Academic rank |
| lecturer | angel | | private | general | |
| | angel | Supervised more than 10 master's students | numerical analysis | mathe matics | 1- أ . م . د كاظم محمد حسين |
| | angel | | differentia l | | 2- أ . م . د سفيان عباس وهيب |
| | angel | | Ring theory | mathe matics | 3- أ . م . د اكرم حاتم شذر |
| | angel | | Ring theory | mathe matics | 4- أ . م . د مصلح خزيم مكحول |
| | angel | | rights | law | 5- م . د شاكر سليمان محمود |
| | angel | | physics | physic s | 6- أ . د خالد عبد الوهاب احمد |
| | angel | | Arab | Arab | 7- أ . م . د رائد رشيد صالح |
| | angel | | numerical analysis | mathe matics | 8- م . م شنكول محمد غريب |
| | angel | | Graph theory | mathe matics | 9- م . م احمد طه محمد |
| | angel | | computer | compu | 10- م . م يوسف رائد محمد |

| | | | | | |
|--|--|--|--|-----|--|
| | | | | ter | |
|--|--|--|--|-----|--|

Professional development

Orientation of new faculty members

Briefly describe the process used to orient new, visiting, full-time, and part-time faculty members at the institutional and departmental levels.

Develop the curriculum by twinning it with the courses of similar departments in other colleges of (%80) science.

Adopt local design principles, such as sustainability and research, and apply them to student projects.

Participate in local and international conferences and specialized seminars under the .

Professional development for faculty members

Briefly describe the academic and professional development plan and arrangements for faculty members, such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

One-day internship with corresponding departments

2. Acceptance criteria

Establishing regulations related to admission to the college or institute, whether through) (.central admission or other procedures

Students are admitted to the college based on their grades in the sixth grade of middle school (baccalaureate). The criteria for assigning students to departments are determined :by

The student's desire •

The student's total score in the sixth grade •

The department's capacity •

The privilege offered by the student, as his or her father or mother is a teacher • • at the Ministry of Higher Education.

2.The most important sources of information about the program

:Briefly remember

Textbooks •

Resources •

- Websites

3.Program development plan .

Program Skills Map

| Required learning outcomes of the program | | | | | | | | | | | | Essential or optional | Course code | Course code | Year/Level /Term |
|-------------------------------------------|----|----|----|--------|----|----|----|-----------|----|----|----|-----------------------|--------------------------------------|--------------|------------------|
| values | | | | Skills | | | | knowledge | | | | | | | |
| 4C | 3C | 2C | 1C | 4B | 3B | 2B | 1B | 4A | 3A | 2A | 1A | | | | |
| | | | | | | | | | | | | Core C | Differential and Integral Calculus I | UOKTB10MS101 | 2024/2023 First |
| | | | | | | | | | | | | Core C | Fundamentals of Mathematics I | UOKTB10MS102 | |
| | | | | | | | | | | | | Core C | Finite Mathematics I | UOKTB10MS103 | |
| | | | | | | | | | | | | S Support | Computer I | UOKTB10MS104 | |
| | | | | | | | | | | | | S Support | Arabic | UOKTB10MS105 | |
| | | | | | | | | | | | | S Support | Human rights and | UOKTB10MS106 | |

Program Skills Map

| Required learning outcomes of the program | | | | | | | | | |
|-------------------------------------------|--------|-----------|--------------|--------|-------------|------------|--|--|--|
| values | Skills | knowledge | Essential or | Course | Course code | Year/Level | | | |
| | | | | | | | | | |

Program Skills Map

| 4C | 3C | 2C | 1C | 4B | 3B | 2B | 1B | 4A | A3 | 2A | 1A | optional | code | | /Term |
|----|----|----|----|----|----|----|----|----|----|----|----|-----------|-------------------------------------------------|------------------|-------------------------------|
| | | | | | | | | | | | | Core C | Differenti al and integral calculus II | UOKTB10MS1 07 | 2024/2023 First/Seco nd |
| | | | | | | | | | | | | Core C | Basics of mathemat ics II | UOKTB10MS1 08 | |
| | | | | | | | | | | | | Core C | Linear algebra | UOKTB10MS1 09 | |
| | | | | | | | | | | | | S Support | General Mechanics | UOKTB10MS1 10 | |
| | | | | | | | | | | | | S Support | computer II | UOKTB10MS1 11 | |
| | | | | | | | | | | | | S Support | English language | UOKTB10MS1 12 | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| Required learning outcomes of the program | | | | | | | | | | | | Essential or optional | Course code | Course code | Year/Level/ Term |
|-------------------------------------------|----|----|----|--------|----|----|----|-----------|----|----|----|-----------------------------|-----------------------------------------------------------------|-------------|------------------------------|
| values | | | | Skills | | | | knowledge | | | | | | | |
| 4C | 3C | 2C | 1C | 4B | 3B | 2B | 1B | A4 | 3A | 2A | A1 | | | | |
| | | | | | | | | | | | | Core C | Advanced (1) Calculus | UokScM0310 | 2025/2024 الثانية / الاول |
| | | | | | | | | | | | | Core C | Methods for solving ordinary differential equations | UokScM0313 | |
| | | | | | | | | | | | | Core C | probability | UokScM0311 | |
| | | | | | | | | | | | | Core C | Group theory | UokScM0312 | |
| | | | | | | | | | | | | essential B | Mathematical Physics | UokScM0315 | |
| | | | | | | | | | | | | Essential B | Programming languages | UokScM0314 | |
| | | | | | | | | | | | | Support S | Arabic | UokScM0104 | |

Program Skills Map

| Required learning outcomes of the program | | | | | | | S | crimes in Iraq | Course code | Course code | Year/Level/ |
|-------------------------------------------|--------|-----------|---------|-------------|-------------|-------------|---|----------------|-------------|-------------|-------------|
| values | Skills | knowledge | Essenti | Course code | Course code | Year/Level/ | | | | | |
| | | | | | | | | | | | |

| 4C | 3C | 2C | 1C | 4B | 3B | 2B | 1B | 4A | A3 | 2A | 1A | al or optional | | | Term |
|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-----------------------------------------------------|--------------|-----------|
| | | | | | | | | | | | | Core C | numerical 1 analysis | UOKTB10ME121 | 2025/2024 |
| | | | | | | | | | | | | Core C | Mathematical statistics | UOKTB10ME122 | |
| | | | | | | | | | | | | Core C | Ring theory | UOKTB10ME123 | |
| | | | | | | | | | | | | Core C | Methods for solving differential equations | UOKTB10ME124 | |
| | | | | | | | | | | | | Essenti al B | Matrix Lab (MATLAB) | UOKTB10ME125 | |
| | | | | | | | | | | | | optiona E I | geometric optics | UOKTB10ME126 | |
| | | | | | | | | | | | | Support t S | computer | UOKTB10ME127 | |
| | | | | | | | | | | | | Support t S | english language II | UOKTB10ME128 | |

•Please tick the boxes corresponding to the individual learning outcomes of the programme that are subject to assessment.**MODULE DESCRIPTION FORM**

Description of the study material model

| Module Information | | | |
|--------------------------|-----------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Course information | | | |
| Module Title | Calculus I | | Module Delivery |
| Module Type | Core | | <input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar |
| Module Code | UOKTB10MS101 | | |
| ECTS Credits | 7.00 | | |
| SWL (hr/sem) | 175 | | |
| Module Level | 1 | Semester of Delivery | |
| Administering Department | Mathmatic | College | Science |
| Module Leader | Sardar Gul Amen | | e-mail sardar.g.ameen@uoalkitab.edu.iq |

| | | | |
|-------------------------------------------|------------------------|--------------------------------------|--------------------------------------------------------------------------------------|
| Module Leader's Acad. Title | Assitant Lecturer | Module Leader's Qualification | M.Sc. |
| Module Tutor | | e-mail | |
| Peer Reviewer Name | Kadum Muhammad Hussein | e-mail | Kadum.m.allami@uoalkitab.edu.iq |
| Scientific Committee Approval Date | 1/06/2023 | Version Number | 1.0 |

| | | | |
|------------------------------------|------|-----------------|--|
| Relation with other Modules | | | |
| العلاقة مع المواد الدراسية الأخرى | | | |
| Prerequisite module | None | Semester | |
| Co-requisites module | None | Semester | |

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Aims أهداف المادة الدراسية | <ol style="list-style-type: none">1. Provide the fundamental base for elementary mathematics.2. Use mathematical functions like algebraic and transcendental functions and application of derivatives to solve mathematics, engineering and physics problems. |
| Module Learning Outcomes مخرجات التعلم للمادة الدراسية | <ol style="list-style-type: none">1. Basic 2D curves drawing and lines using properties.2. Apply mathematic techniques to find the limits and continuous.3. Apply differential calculus and higher order to solve mathematics, engineering and Physics problems.4. Expanding on many of the functions that were taken in the previous stages.5. Learn about new functions and study their properties. |
| Indicative Contents المحتويات الإرشادية | <p>Indicative content includes the following.</p> <p><u>Chapter 1</u></p> <p>Relations and functions, domain and range, operations on functions. Inverse functions, special function and graphs. Graphing linear equations, distance between two points and between point and line. The rate of change functions, increasing and decreasing functions. Slope and Equations for lines, functions and their graph. [18 hrs.]</p> <p><u>Chapter 2</u></p> <p>Limits and continuity, introduction to limit, some properties of limits, limit involving infinity. Formula definition of Limit. The Limits of rational functions. Some important Theorem on limits. Introduction to continuous functions, algebraic operations on continuous functions, properties of continuous functions. [18 hrs.]</p> <p><u>Chapter 3</u></p> <p>Derivative of functions, derivative by using definition. Derivative of corner, Differentiation rules. Second and higher order derivatives. Chain rule, implicit differentiation. [17 hrs.]</p> <p><u>Chapter 4</u></p> <p>Derivative of special functions and some properties of Transcendental functions, such as: Trigonometri functions, Natural logarithm function, Exponential function, Exponential and logarithmic function bases other than e, Hyperbolic functions, inverse of trigonometric functions, Inverse of hyperbolic functions L'Hopital's Rules. [18 hrs.]</p> <p><u>Chapter 5</u></p> |

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. And knowing the basis of the concepts and where they came from and taking realistic applications on that.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem)

الحمل الدراسي المنتظم للطالب خلال الفصل

94

Structured SWL (h/w)

الحمل الدراسي المنتظم للطالب أسبوعي

6

Unstructured SWL (h/sem)

الحمل الدراسي غير المنتظم للطالب خلال الفصل

81

Unstructured SWL (h/w)

الحمل الدراسي غير المنتظم للطالب أسبوعيا

5

Total SWL (h/sem)

الحمل الدراسي الكلي للطالب خلال الفصل

175

Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|----------------------|-----------------|--------------|-----------------|------------|---------------------------|
| Formative assessment | Quizzes | 3 | 10% (30) | 5, 9, 13 | LO #1-3 |
| | Assignments | 5 | 1% (5) | 2,4,6,8,10 | LO # 1-4 |
| | Projects / Lab. | | | | |
| | Report | 1 | 1% (5) | 12 | |
| Summative assessment | Midterm Exam | 1r. and half | 10% (10) | 7 | LO # 1-3 |
| | Final Exam | 3hrs. | 50% (50) | 16 | All |
| Total assessment | | | 100% (100Marks) | | |

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

Material Covered

| Material Covered | |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1 | Relations and functions, domain and range, operations on functions. Inverse functions, |
| Week 2 | Special function and graphs. Graphing linear equations distance between two points and between point and line. |
| Week 3 | The rate of change functions, increasing and decreasing functions. Slope and Equations for lines, functions and their graph. |
| Week 4 | Introduction to limit, some properties of limits, limit involving infinity. |
| Week 5 | Formula definition of Limit, The limits of rational functions. Some important Theorem on limits. |
| Week 6 | Introduction to continuous functions, algebraic operations on continuous functions, properties of continuous functions. |
| Week 7 | Mid-term Exam + Derivative of functions, derivative by using definition. Derivative of corner. |
| Week 8 | Differentiation rules. Second and higher order derivatives. Chain rule, implicit differentiation. |
| Week 9 | Derivative of special functions and some properties of Transcendental functions, such as: Trigonometric functions. |
| Week 10 | Natural logarithm function, Exponential function, Exponential and logarithmic function bases other than e. |
| Week 11 | Hyperbolic functions, Inverse of trigonometric functions, Inverse of hyperbolic functions, L'Hopital's Rules. |
| Week 12 | Applications of derivatives: Related rates of change. Slopes and tangent lines with derivatives. |
| Week 13 | Extreme values, Maximum and Minimum Theorems, Rolle's Theorem and Mean Value Theorem, Cauchy's Mean Value Theorem. |
| Week 14 | Monotonicity test (Maximum and Minimum regions) Critical points, concavity and inflections points, Asymptotes, A curve sketching, Graphing Rational functions. |
| Week 15 | Engineering applications, Physical applications, Arithmetic applications, velocity, and acceleration with application. |
| Week 16 | Preparatory week before the final Exam. |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي المختبر

| | Material Covered |
|--------|------------------|
| Week 1 | |
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |

Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts | THOMAS' CALCULUS, 4 th edition , 2018 BY: GEORGE B. THOMAS, JR., JOEL HASS, CHRISTOPHER HEIL and MAURICE D. WEIR | Yes |
| Recommended Texts | CALCULUS, 9 th edition , 2020 BY: JAMES STEWART, DANIEL CLEGG and SALEEM WATSON. | Yes |
| Websites | | |

Grading Scheme

مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|-------|---------------|---------|-----------|-------------------------|
| | A - Excellent | امتياز | 90 - 100 | Outstanding Performance |

| | | | | |
|------------------------------------|-------------------------|---------------------|---------|---------------------------------------|
| Success Group (50 - 100) | B - Very Good | جيد جداً | 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) | Considerable amount of work required |
| | | | | |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower 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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

نموذج وصف المادة الدراسية

| Module Information معلومات المادة الدراسية | | |
|------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Title | Foundation of Mathematics I | Module Delivery <input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar |
| Module Type | C | |
| Module Code | UOKTB10MS102 | |
| ECTS Credits | 7.00 | |
| SWL (hr/sem) | 175 | |

| | | | |
|-------------------------------------------|------------------------|--------------------------------------|-----------------|
| Module Level | UGI | Semester of Delivery | 1 |
| Administering Department | Mathmatic | College | Science |
| Module Leader | Mulleh Khuzaym Makhoul | e-mail | |
| Module Leader's Acad. Title | Assistant Professor | Module Leader's Qualification | Asst. Prof. Dr. |
| Module Tutor | Name (if available) | e-mail | E-mail |
| Peer Reviewer Name | Kadum Muhammad Hussein | e-mail | E-mail |
| Scientific Committee Approval Date | 20/06/2023 | Version Number | 1.0 |

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

| | | | |
|-----------------------------|------|-----------------|--|
| Prerequisite module | None | Semester | |
| Co-requisites module | None | Semester | |

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Aims أهداف المادة الدراسية | <ol style="list-style-type: none"> 1. The department is interested in graduating cadres specialized in mathematics 2. Preparing outstanding students who are able to complete their postgraduate studies from masters and doctorates, in which the country suffers from a shortage 3. Graduating qualified students to work as research assistants in all scientific institutions in the field of mathematics 4. Preparing specialized cadres to work in the various state institutions, such as teaching in schools and others in the field of mathematics |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p> | <p>- A. Knowledge and Understanding</p> <p>A1 - That the student be able to familiarize himself with the basic concepts and principles of all courses in the Mathematics Department.</p> <p>A 2- That the student be able to know the importance of the branches of mathematics and link them to life reality.</p> <p>A3 - That the student is able to understand the definitions, mathematical facts, and theories related to the vocabulary and courses of the mathematics department.</p> <p>A4- The student learns about the relationship between the curricula of the Mathematics Department.</p> <p>A 5- That the student becomes familiar with the applications of the courses in practical life.</p> |
| <p>Indicative Contents المحتويات الإرشادية</p> | <p>B 1- The student acquires the skill of solving mathematical problems of all kinds and forms.</p> <p>B 2- To be able to employ theories in solving mathematical problems, and to have the ability to prove and prove proper mathematical proof.</p> <p>B 3- Develop the student's ability to deal with new and advanced cases and to deal with mathematical problems with all skill and high accuracy.</p> |

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

| | |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Strategies</p> | <p>1- Follow the method of explanation and clarification of the courses.</p> <p>2- Lectures and seminars.</p> <p>3- Discussions and asking questions in the classroom in order to open the door for dialogue.</p> <p>4- Homework and discussion.</p> |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

| | | | |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------|---|
| Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل | 175 | Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا | 1 |
| Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل | 79 | Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل | 254 | | |

Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|-----------------------------|------------------------|-------------|------------------|------------|---------------------------|
| Formative assessment | Quizzes | 2 | 10% (10) | 5, 10 | LO #1, 2, 10 and 11 |
| | Assignments | 2 | 10% (10) | 2, 12 | LO # 3, 4, 6 and 7 |
| | Projects / Lab. | 1 | 10% (10) | Continuous | All |
| | Report | 1 | 10% (10) | 13 | LO # 5, 8 and 10 |
| Summative assessment | Midterm Exam | 2 hr | 10% (10) | 7 | LO # 1-7 |
| | Final Exam | 2hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

Material Covered

| | |
|----------------|--------------------------------------------------------------------------------------|
| Week 1 | Concept of Set, The principles of mathematical logic, Propositions and Truth Tables, |
| Week 2 | Quantifiers, Arguments, Mathematical Proof, |
| Week 3 | Axiomatic Development of Set Theory, Sets algebra. |
| Week 4 | Cartesian Product, Relations and their Properties. |
| Week 5 | Type of Relations. |
| Week 6 | Equivalence Classes, Ordered Sets. |
| Week 7 | Exam |
| Week 8 | Definitions and General Properties. |
| Week 9 | Type of Functions. |
| Week 10 | Composition of Functions. |
| Week 11 | Extension and Restriction of Function, The Image and Inverse Image of a Function, |
| Week 12 | Invertible Functions. |
| Week 13 | The Axiom of Choice and Its Equivalents. |
| Week 14 | Equivalent Sets, Finite and Infinite Sets, Countable sets. |
| Week 15 | Similar Sets, Cardinal numbers, Ordinal, Paradoxes in set theory. |
| Week 16 | Preparatory week before the final Exam. |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

| Material Covered | |
|------------------|--|
| Week 1 | |
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |

Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts | foundations of mathematics Hadi Jaber Mustafa | Yes |
| Recommended Texts | 1. Birkhoff .G and Mac Lane. Saunders." A Survey of Modern Algebra ", New York,1965. 2. Burton D. M." Introduction To Modern Abstract Algebra", London, 1967. | No |
| Websites | | |

Grading Scheme

مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|------------------------------------|------------------|---------------------|-----------|---------------------------------------|
| Success Group (50 – 100) | A - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | B - Very Good | جيد | 80 - 89 | Above average with some errors |
| | C - Good | جيد جيداً | 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 (فيد المعالجة) | (45-49) | More work required but credit awarded |
| | F – Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower 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.

Module Description Form

نموذج وصف المادة الدراسية

| Module Information معلومات المادة الدراسية | | | |
|-----------------------------------------------|------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Title | Finite Mathematics I | | Module Delivery |
| Module Type | C | | <input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar |
| Module Code | UOKTB10MS103 | | |
| ECTs Credits | 6 | | |
| SWL (hr/sem) | 150 | | |
| Module Level | UGI | Semester of Delivery | |
| Administrating Department | Mathematics | College | Science |
| Module Leader | Akram Hatem Shadher | E-mail | akhsh@uoalkitab.edu.iq |
| Module leader's Acad. Title | Assistant professor | Module Leader's Qualification | Asst. Prof. Dr. |
| Module Tutor | --- | E-mail | - |
| Peer Reviewer Name | Kadum Muhammad Hussein | E-mail | - |
| Scientific Committee Approval Date | --- | Version Number | -- |

| Relation with other Modules العلاقة مع المواد الدراسية الأخرى | | | | |
|------------------------------------------------------------------|------|--|----------|---|
| Prerequisite Module | None | | Semester | - |
| Co-requisite Module | None | | Semester | - |

| Module Aim, Learning, Outcomes, and Indicative Contents العلاقة مع المواد الدراسية الأخرى | |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Aim اهداف المادة الدراسية | The aim of this module is to introduce students to some topics in the mathematics of combinatorial structures. This theory has wide applications, both in classical mathematics and in theoretical computer science. |
| Module Learning Outcomes مخرجات التعلم للمادة الدراسية | After successful completion of the module, students will be able to: <ol style="list-style-type: none"> 1. Understand and explain a variety of mathematical structures that do not involve infinite processes and limits. 2. Solve systems of linear equations. 3. Perform matrix operations. 4. Apply mathematical skills to practical problems such as input-output analysis, inventory planning, optimal production schedules, insurance probabilities, and traffic patterns. |
| Indicative Contents المحتويات الإرشادية | Finite mathematics represents an important trend in mathematics. It is possible to single out its typical subject of study, methods, and problems, whose nature is largely determined by the necessity, characteristic of finite mathematics, for rejecting the fundamental concepts of classical mathematics limit and continuity and by the fact that the powerful methods of classical mathematics as a rule prove to be of little use in many problems of finite mathematics. |

| Learning and Teaching Strategies استراتيجية التعلم والتعليم | |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies | Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering the type of simple experiments involving some sampling activities that are interesting to |

| Student Workload (SWL) الحمل الدراسي للطلاب | | | |
|---------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------|-----|
| Structured SWL (hr/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل | 64 | Structured SWL (hr/week) الحمل الدراسي المنتظم للطلاب اسبوعيا | 4.3 |
| Unstructured SWL (hr/sem) الحمل الدراسي الغير منتظم للطلاب خلال الفصل | 86 | Unstructured SWL (hr/week) الحمل الدراسي الغير منتظم للطلاب اسبوعيا | 5.7 |
| Total SWL (hr/sem) الحمل الدراسي الكلي للطلاب خلال الفصل | 150 | | |

| Module Evaluation تقييم المادة الدراسية | | | | | |
|--------------------------------------------|--------------|-------------|----------------|-----------|----------------------------|
| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning outcomes |
| Formative assessment | Quizzes | 2 | 10% (10) | 5:10 | All |
| | Assignments | 2 | 10% (10) | 2, 12 | |
| | Project/Lab. | 2 | 10% (10) | Continues | |
| | Report | 1 | 10% (10) | 13 | |
| Summative assessment | Midterm Exam | 2 hr | 10% (10) | 7 | |
| | Final Exam | 2 hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100) | | |

| Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري | |
|------------------------------------------------------------|-------------------------------------------------------------------------|
| Week | Material Covered |
| Week 1 | Definition of matrix, Operation on Matrices, Some type of Matrices. |
| Week 2 | Determinants and their properties. |
| Week 3 | Inverse of matrix, Invertible matrices. |
| Week 4 | Adjoint matrices, elementary transformations. |
| Week 5 | Applications on matrices, Eigenvalues and Eigenvectors. |
| Week 6 | Standard Eigenvalue Problem, Kronecker Product and Eigenvalues. |
| Week 7 | Approximating Eigenvalues. |
| Week 8 | Diagonalization, Jordan Form. |
| Week 9 | Fundamental concept, representing graph with matrices connected graphs. |
| Week 10 | Graph isomorphism, planar graphs, trees. |
| Week 11 | Binomial Expansion. |
| Week 12 | The Additive and Multiplication Principles. |
| Week 13 | Permutations, Combinations. |
| Week 14 | Random Samples. |
| Week 15 | Tree Diagrams. |
| Week 16 | Preparatory week before the final exam. |

| Delivery Plan (Weekly Lab. Syllabus) المنهاج الأسبوعي للمختبر | |
|------------------------------------------------------------------|------------------|
| Week | Material Covered |
| Week 1 | |
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |

| Learning and Teaching Resources مصادر التعلم والتدريس | | |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| | Text | Available in the Librar? |
| Required Texts | 1. Bernard Kolman" Introductory Linear Algebra with Applications" 2. Lange. S." Linear Algebra" 3. Mostow. G. D. and Sampson. J. H." Linear Algebra" London, 1969. 4. Stoll .R. R. and Wong .E. T." Linear Algebra" London, 1968. 5, Strang. G. " Linear Algebra and Its Applications" New York 1980 | No |
| Recommended Texts | | No |
| Websites | | |

| Grading Schemes مخطط الدرجات | | | | |
|---------------------------------|-----------------|---------------------|-----------|-------------------------------------------|
| Group | Grade | التقدير | Marks (%) | Definition |
| Success Group (50-100) | A. Excellent | امتياز | 90-100 | Outstanding Performance |
| | B. Very Good | جيد | 89-80 | Above average with some errors |
| | C. Good | جيد جداً | 79-70 | Sound works with notable errors |
| | D. Satisfactory | متوسط | 69-60 | Fair but with major shortcomings |
| | E. Sufficient | مقبول | 59-50 | Work meets minimum criteria |
| Fail Group (0-49) | FX. Fail | راسب (قيد المعالجة) | 45-49 | More work is required, but credit awarded |
| | F. Fail | راسب | 0-44 | A considerable amount of work required |
| | | | | |

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

| | | | | |
|------------------------------------|------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Module Title | Arabic Language | | Module Delivery | |
| Module Type | S | | <input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Practical <input type="checkbox"/> Seminar | |
| Module Code | UOKTB10MS105 | | | |
| ECTS Credits | 3.00 | | | |
| SWL)hr/sem(| 75 | | | |
| Module Level | 1 | Semester of Delivery | | |
| Administering Department | Mathmatic | College | Science | |
| Module Leader | Ahmed Saeed Alwan | | e-mail | |
| Module Leader's Acad. Title | Assistant Lecturer | Module Leader's Qualification | Asst. Dr. | |
| Module Tutor | Name (if available) | | e-mail | E-mail |
| Peer Reviewer Name | Name | | e-mail | E-mail |
| Scientific Committee Approval Date | 20/06/2023 | Version Number | 1.0 | |

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

| | | | |
|----------------------|------|----------|--|
| Prerequisite module | None | Semester | |
| Co-requisites module | None | Semester | |

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Aims أهداف المادة الدراسية | تعريف الطالب بأساسيات اللغة العربية. كذلك كسر حاجز الخجل وزيادة ثقتهم داخل وخارج الفصل. هناك فرصة كبيرة لإشراكهم في مناقشات قصيرة حيث يمكنهم الكتابة أو التعبير عن أنفسهم شفهيًا. بالإضافة إلى ما سبق ، سنعمل على تحسين مهارات القراءة والكتابة والاستماع والتحدث كطالب ، وتقوية ملكة الطالب الأدبية لتذوق أساليب اللغة وإدراك مواطن الجمال فيها. |
| Module Learning Outcomes مخرجات التعلم للمادة الدراسية | 1. خلق وعي كامل باستخدام الصحيح لقواعد اللغة العربية في الكتابة والمحادثة. 2. إدراك أهمية اللغة العربية داخل وخارج الحياة الجامعية. 3. سيحسن الطالب قدرتهم على التحدث باللغة العربية من حيث الطلاقة والستيعاب. 4. سيقوم الطالب بمراجعة الأشكال النحوية للغة العربية واستخدام هذه الأشكال في سياقات تواصلية محددة ، والتي تشمل: الأنشطة الصفية ، والواجبات المنزلية ، وقراءة النصوص ، والكتابة. 5. سيعزز الطالب قدرتهم على كتابة فقرات قصيرة وملخصات باستخدام نهج العملية. |
| Indicative Contents المحتويات الإرشادية | Indicative content includes the following. -مقدمة عن أهمية اللغة كاساس للتواصل بشكل عام واللغة العربية بشكل خاص ، مع مقدمة عن شروط الكالم عند النحويين في اللغة العربية، شرح كل جزء من الكالم في اللغة العربية مثل الأسماء والضمائر والأفعال وحروف الجر وحروف العطف المهارات الأساسية في تعلم اللغة العربية: القراءة والكتابة يتم تقديمها بشكل تدريجي ، الجزء الأخير مخصص لبعض جلسات تصحيح الأخطاء وردود الفعل. -جعل الطلبة على دراية بالعلاقة بين أساليب التعلم وأساليب التدريس. -تشجيع الطلبة على "توسيع" أساليبهم. |

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Strategies | 1. المحاضرة المصحوبة بالشرح والتحليل. 2. الحلقة النقاشية. 3. التقارير والبحوث. 4. الاسئلة والأجوبة. 5. المشاركة الصفية. |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------|

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

| | | | |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------|---|
| Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل | 75 | Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا | 7 |
| Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل | 49 | Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل | 124 | | |

Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|-----------------------------|------------------------|-------------|------------------|------------|---------------------------|
| Formative assessment | Quizzes | 2 | 10% (10) | 5, 10 | LO #1, 2, 10 and 11 |
| | Assignments | 2 | 10% (10) | 2, 12 | LO # 3, 4, 6 and 7 |
| | Projects / Lab. | 1 | 10% (10) | Continuous | All |
| | Report | 1 | 10% (10) | 13 | LO # 5, 8 and 10 |
| Summative assessment | Midterm Exam | 2 hr | 10% (10) | 7 | LO # 1-7 |
| | Final Exam | 2hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

Delivery Plan (Weekly Syllabus)

المنهاج السبوعي النظري

| | Material Covered |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1 | مقدمة عن اهمية دراسة اللغة العربية في حياتنا كمادة علمية وادبية وكأساس لفهم العقيدة الدينية+ مفاهيم عامة عن Week 1 علم النحو وضرورة تعلمه واتقانه. |
| Week 2 | ما يتألف منه الكالم (الكالم, الكلمة, الكلم), شروط الكالم عند النحويين واللغويين+ امثلة توضيحية Week 2 لتقريب المادة الى ذهن الطالب. |
| Week 3 | الأسم تعريفه وعالماته وانواعه. |
| Week 4 | التنوين تعريفه وانواعه. |
| Week 5 | الفعل تعريفه بشكل عام+الفعل الماضي وحالات بناءه والعالمات الداخلة عليه. |
| Week 6 | الفعل المضارع وحالات بناءه واعرابه, والعالمات الداخلة عليه+ فعل الامر وحالات البناء وعالماته. |
| Week 7 | المبتدأ والخبر. |
| Week 8 | قواعد كتابة العداد. |
| Week 9 | قواعد كتابة العداد المركبة, وحكم تذكيرها وتانيثها مع المعدود وقواعد اعرابها. |
| Week 10 | قواعد كتابة الهمزة باشكالها المختلفة (المتوسطة او المتطرفة وهمزة على السطر). |
| Week 11 | الفرق بين الضاد والطاء. |
| Week 12 | ضوابط كتابة التاء المبسوطة والمربوطة. |
| Week 13 | عالمات الترقيم. |
| Week 14 | همزة القطع وهمزة الوصل. |
| Week 15 | أختبار |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Material Covered

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Learning and Teaching Resources

مصادر التعلم والتدريس

Text

Available in the Library?

Required Texts

شرح ابن عقيل على الفية ابن مالك + النحو التعليمي والتطبيق في القراءان الكريم, د. محمد سليمان ياقوت.

Yes

Recommended Texts

1- الأسلوب ، احمد الشايب ، طرق تعليم التعبير، محمد عبد القادر أحمد
2- موسوعة النحو والعراب, ج/1, د. مسعد زياد
3- متن الجرومية/ محمد بن ابراهيم الصنهاجي

Yes

Websites

Grading Scheme

مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|-----------------------------|------------------|---------------------|-----------|---------------------------------------|
| Success Group (50 - 100) | A - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | B - Very Good | جيد جداً | 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) | Considerable amount of work required |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower 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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

| Module Information | | | |
|--------------------------|----------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------|
| معلومات المادة الدراسية | | | |
| Module Title | Human Rights and Democracy | | Module Delivery |
| Module Type | Core | | <input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab |
| Module Code | UOKTB10MS106 | | <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar |
| ECTS Credits | 7.00 | | |
| SWL (hr/sem) | 175 | | |
| Module Level | 1 | Semester of Delivery | 1 |
| Administering Department | Mathmatic | College | Science |
| Module Leader | Shakir Suleman Mahmud | | e-mail Shakir.s.mahmudd@uoalkitab.edu.iq |

| | | | |
|-------------------------------------------|-----------|--------------------------------------|-----|
| Module Leader's Acad. Title | Doctor | Module Leader's Qualification | Dr. |
| Module Tutor | | e-mail | |
| Peer Reviewer Name | | e-mail | |
| Scientific Committee Approval Date | 1/06/2023 | Version Number | 1.0 |

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

| | | | |
|-----------------------------|------|-----------------|--|
| Prerequisite module | None | Semester | |
| Co-requisites module | None | Semester | |

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Module Aims</p> <p>أهداف المادة الدراسية</p> | <p>أ- المعرفة والفهم (الأهداف المعرفية)</p> <p>أ 1- ان يكون الطالب ملما بمفاهيم حقوق السنسان والديمقراطية ويكتسب الوعي والثقافة السياسية.</p> <p>أ 2- يستطيع ان يميز بين المصطلحات والمفاهيم المختلفة مثل (حقوق الأنسان، الديمقراطية، الانتقال الديمقراطي، العدالة السننقالية).</p> <p>أ 3- القدرة على تحليل تطورات حقوق السنسان والمراحل التي مرت بها.</p> <p>أ 4- ان يكون قادرا على ادراك واستيعاب الاعلانات والمواثيق الدولية لحقوق الأنسان مثل الاعلان العالمي لحقوق الأنسان.</p> <p>أ 5- ان يكون قادرا على التعبير عن راية بخصوص واحترام اراء الخرين.</p> <p>أ 6- ان تكون لديه القدرة على تحليل اي مشكلة ووصفها والتنبأ بمستقبل الظاهرة السياسية.</p> <p>أ 7- ان يتعرف على انواع الديمقراطية والتميز فيما بينها داخل النظم السياسية المعاصرة.</p> <p>ب - المهارات الخاصة بالموضوع (الأهداف المهاراتية الخاصة بالمقرر)</p> <p>ب 1- اكتساب الطالب لمهارات التفاوض والتواصل وتبادل الراء مع الخرين.</p> <p>ب 2- اكتساب الطالب مهارات الحوار البنساء الهادف.</p> <p>ب 3- اكتساب الطالب مهارات مواجهة اي موقف والتعبير عن الرأى بكل شجاعة وثقة بالسنفس.</p> <p>ج- مهارات التفكير</p> <p>ج 1- مهارات التحليل.</p> <p>ج 2- مهارات التوظيف للمفردات التي تعلمها في الواقع العملي من خلال دراسة مشكلت محددة من الواقع.</p> <p>ج 3- مهارات التنبؤ والدراسات السننقالية للنظم الديمقراطية.</p> <p>د - المهارات العامة والمنقولة (المهارات الخرى المتعلقة بقابلية التوظيف والتطور الشخصي)</p> <p>د 1- القدرة على العمل كفريق.</p> <p>د 2- التفاعل مع فريق العمل لتحقيق المهارات المطلوبة.</p> <p>د 3- القدرة على القيام بعرض نظري لبعض الموضوعات ذات العلقة بمفردات المادة.</p> <p>د 4- اكتساب مهارات التحليل العلمي لي ظاهرة سياسية تتعلق بحقوق السنسان.</p> |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Module Learning Outcomes

مخرجات التعلم للمادة الدراسية

- 1- عرف المفاهيم التية: حقوق السنسان، الشرعة الدولية، الديمقراطية، الديمقراطية، التحول الديمقراطي.
- 2- وضح اهمية الحقوق السياسية والمدنية.
- 3- اذكر اهم ما جاء في المواثيق الدولية لحقوق النسان فيما يخص حق الحياة.
- 4- تكلم باختصار عن اسنواع الحقوق الاقتصادية والاجتماعية والثقافية.
- 5- سناقش ما جاء في الدستور العراقي لعام 2005 السنافذ من ضمانات فيما يخص حقوق الأنسان.
- 6- حدد اهم خصائص النظام الديمقراطي.
- 7- اشرح انواع الديمقراطية ثم بين اهم الأنواع القابلة للتطبيق العملي.
- 8- عدد مع الشرح انواع النظم الانتخابية.
- 9- سناقش الطار الوظيفي للسلطة التشريعية ضمن مؤسسات النظام السياسي العراقي وفق ما جاء في دستور عام 2005.
- 10- حدد الطار البنوي للمؤسسة التنفيذية في النظام السياسي العراقي وفق دستور 2005.
- 11- تكلم عن اختصاصات مجلس السنواب في اطار المؤسسة التشريعية.
- 12- سناقش شر وط اسنخاب ر نيسر، الجمهورية وفق الدستور العراقي لعام 2005.

Indicative Contents

المحتويات الرشادية

يتضمن المحتوى الرشادي ما يلي:-

مفهوم حقوق النسان وتطور الحقوق تاريخياً

مفهوم حقوق النسان وتطور الحقوق تاريخياً يتناول تعريف الحق وتعريف النسان، تعريفاً لغوياً واصطلاحياً واجرائياً، خصائص حقوق النسان، ثم ، من العصور القديمة مروراً بالتطور التاريخي لحقوق النسان بالعصور الوسطى والحديثة، ومن ثم حقوق النسان المعاصرة، وما انبثق منها من اشكال واجيال لحقوق النسان، وانواع ومصادر حقوق النسان ومن ضمنها الحقوق المدنية والسياسية والحقوق الاقتصادية والاجتماعية والثقافية، وحقوق النسان في المواثيق الدولية والتشريعات الوطنية، والتحديات العالمية لحقوق النسان ومن ضمنها التحديات الثقافية مثل العولمة والتطور التكنولوجي، والتحديات السياسية مثل الرهاب والحروب اللمتأثلة والحروب بين الدول. (5 ساعات)

حقوق النسان والحريات العامة في الدستور العراقي يتناول ما تضمنه الدستور العراقي من ضمانات قانونية لحماية حقوق النسان وحرياته العامة، وانواع تلك الضمانات. (ساعتان)

الحريات العامة والديمقراطية ، في الحضارات القديمة لسيما في دول المدن اليونانية، مروراً بتناول التطور التاريخي للديمقراطية بالديمقراطية عند المفكرين الغربيين امثال توماس هوبز ومونتسكيو وجان جاك روسو، ثم النماذج التقليدية للديمقراطية (انواع الديمقراطية)، المباشرة وغير المباشرة وشبه المباشرة، وخصائص وشروط النظام الديمقراطي، وانواع النظم الانتخابية في النظمة الديمقراطية. (3 ساعات). (الديمقراطية في نظام الحكم العراقي وفق دستور 2005.

يتناول الطار البنوي لمؤسسات النظام السياسي العراقي، بنية المؤسسة التشريعية المكونة من مجلس النواب ومجلس النحاد، وبنية المؤسسة التنفيذية المكونة من رئيس الجمهورية ومجلس الوزراء، وبنية المؤسسة القضائية المكونة من مجلس القضاء العلى والمحكمة النحادية العلى، محكمة التمييز النحادية، وجهاز الدعاء العام، وهيئة الشراف القضائي، والمحاكم النحادية الاخرى، ثم الاطار الوظيفي واختصاصات مؤسسات النظام السياسي العراقي (التشريعية، التنفيذية، القضائية)، وأخيراً العلاقة بين السلطات (التوازن والتعاون، والفصل بين السلطات). (4 ساعات)

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

1. المحاضرة المصحوبة بالشرح والتحليل.
2. الحلقة النقاشية.
3. التقارير والبحوث.
4. عرض المادة عبر شرائح (بوربوينت).
5. الاسئلة والجوبة.
6. المشاركة الصفية.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ 15 اسبوعاً

| | | | |
|--------------------------------------------------------------------------------|------------|----------------------------------------------------------------------------|----------|
| Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل | 94 | Structured SWL (h/w) الحمل الدراسي المنتظم للطالب اسبوعياً | 6 |
| Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل | 81 | Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب اسبوعياً | 5 |
| Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل | 175 | | |

Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|-----------------------------|------------------------|--------------|------------------|------------|---------------------------|
| Formative assessment | Quizzes | 2 | 10% (10) | 5,10 | LO #1, #2 and #10, #11 |
| | Assignments | 2 | 10% (10) | 2,12 | LO #3, #4 and #6, #7 |
| | Projects / Lab. | 1 | 10% (10) | Continuous | All |
| | Report | 1 | 10% (10) | 13 | LO #5, #8 and #10 |
| Summative assessment | Midterm Exam | 1r. and half | 10% (10) | 7 | LO #1 - #7 |
| | Final Exam | 3hrs. | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

Delivery Plan (Weekly Syllabus)

المنهاج السبوعي النظري

Material Covered

| Week | Material Covered |
|---------|------------------------------------------------------------|
| Week 1 | واقع حقوق الانسان في الحضارات والمجتمعات القديمة. |
| Week 2 | واقع حقوق الانسان في الاسلام. |
| Week 3 | مصادر حقوق الانسان (المصادر الدولية). |
| Week 4 | مصادر حقوق الانسان (المصادر الوطنية). |
| Week 5 | ضمانات حقوق الانسان في الاسلام. |
| Week 6 | ضمانات حقوق الانسان على الصعيد الداخلي. |
| Week 7 | ضمانات حقوق الانسان على الصعيد الدولي. |
| Week 8 | حقوق الطفل. |
| Week 9 | مفهوم الديمقراطية. |
| Week 10 | الديمقراطية بين العالمية والخصوصية. |
| Week 11 | اشكال الديمقراطية. |
| Week 12 | من اشكال الديمقراطية (الديمقراطية المباشرة وشبه المباشرة). |
| Week 13 | من اشكال الديمقراطية (الديمقراطية النيابية). |
| Week 14 | المجلس النيابي. |
| Week 15 | مفهوم الانتخابات وتنظيم عملية الانتخاب. |
| Week 16 | أختبار |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

Material Covered

| | Material Covered |
|--------|------------------|
| Week 1 | |
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |

Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts | 1. حافظ علوان حمادي الدليمي، حقوق الانسان، وزارة التعليم العالي والحث العلمي، جامعة بغداد، 2013. 2. محمد سليم مجمد، نظرات حول الديمقراطية، دار الوائل للطباعة، عمان، 2000. | Yes |
| Recommended Texts | 1. بهاء الدين ابراهيم وآخرون، حقوق الانسان بين التشريح والتطبيق، دار الجامعة الجديدة، الاسكندرية، 2008. 2. الدستور العراقي الدائم لعام 2005، الامانة العامة لمجلس الوزراء، بغداد، 2006. | Yes |
| Websites | https://www.coe.int/en/web/compass/democracy | |

Grading Scheme

مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|-------|---------------|----------|-----------|--------------------------------|
| | A - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | B - Very Good | جيد جداً | 80 - 89 | Above average with some errors |

| | | | | |
|------------------------|------------------|---------------------|---------|---------------------------------------|
| Module A الدراسية | C - Good | جيد | 70 - 79 | Sound work with notable errors |
| | D - Satisfactory | متوسط | 60 - 69 | Fair but with major shortcomings |
| Module Learning | 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) | Considerable amount of work required |
| | | | | |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower 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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

| Module Information معلومات المادة الدراسية | | | |
|-----------------------------------------------|-------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Title | Calculus II | | Module Delivery |
| Module Type | Core | | <input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar |
| Module Code | UOKTB10MS107 | | |
| ECTS Credits | 7.00 | | |
| SWL (hr/sem) | 175 | | |
| Module Level | 1 | Semester of Delivery | |
| Administering Department | Mathmatic | College | Science |
| Module Leader | Sardar Gul Amen | e-mail | sardar.g.ameen@uoalkitab.edu.iq |
| Module Leader's Acad. Title | Assitant Lecturer | Module Leader's Qualification | M.Sc. |
| Module Tutor | | e-mail | |
| Peer Reviewer Name | Kadum Muhammad Hussein | e-mail | Kadum.m.allami@uoalkitab.edu.iq |
| Scientific Committee Approval Date | 1/06/2023 | Version Number | 1.0 |

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

| | | | |
|----------------------|------|----------|--|
| Prerequisite module | None | Semester | |
| Co-requisites module | None | Semester | |

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

| | |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students. And knowing the basis of the concepts and where they came from and taking realistic applications on that. |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Student Workload (SWL)

الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا

| | | | |
|-------------------------------------------------------------------------|-----|--------------------------------------------------------------------|---|
| Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل | 94 | Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا | 6 |
| Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل | 81 | Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا | 5 |
| Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل | 175 | | |

Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|----------------------|-------------|-------------|----------------|------------|---------------------------|
| Formative assessment | Quizzes | 3 | 10% (30) | 5, 9, 13 | LO #1-3 |
| | Assignments | 5 | 1% (5) | 2,4,6,8,10 | LO # 1-4 |

| | | | | | |
|-----------------------------|------------------------|--------------|-----------------|----|----------|
| | Projects / Lab. | | | | |
| | Report | 1 | 1% (5) | 12 | |
| Summative assessment | Midterm Exam | 1r. and half | 10% (10) | 7 | LO # 1-3 |
| | Final Exam | 3hrs. | 50% (50) | 16 | All |
| Total assessment | | | 100% (100Marks) | | |

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

| | Material Covered |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1 | Integration: Introduction of Integrations, Types of integrations, Integrations of special functions, such as: Algebraic functions, ceiling and floor functions. |
| Week 2 | Trigonometric functions, Natural logarithm function, Exponential function, Exponential and logarithmic function bases other than e. |
| Week 3 | Hyperbolic functions, Inverse of trigonometric functions, Inverse of hyperbolic functions. |
| Week 4 | Techniques of integration: Integration using substitution, Integration by parts, Integration of Trigonometric(power, product). |
| Week 5 | Trigonometric substitutions, Rational functions and partial fractions. |
| Week 6 | Rationalizing substitutions, Integration of rational function in sine and cosine, Integral by hyperbolic substitution. |
| Week 7 | Mid-term Exam + Improper Integral, Comparison test for improper Integrals, King property integration. |
| Week 8 | Applications of integration: Definition of Areas and types of areas, Definition Volumes, Types of volumes. |
| Week 9 | Types of volumes, length of curves in the plane, Areas of Surfaces of revolution. |
| Week 10 | Review the Cartesian coordinates with two dimensions, Polar Coordinates and types of polar equations. |
| Week 11 | Symmetric of polar, Converting between Cartesian and polar, Tangents to polar curves, Area with polar, Arc length of polar curves. |
| Week 12 | Cartesian coordinates with three dimensions, Representations and decrement octanes, distance formula and section formula in three dimensions, graphs, Applications in three dimensions, introduction of cylindrical and spherical coordinates with converting. |
| Week 13 | Introduction about Sequences, formula of sequences, types of sequences, convergent and divergent of sequences, Testing for monotonicity for sequences, |

| | |
|----------------|---------------------------------------------------------------------------------------------------------------|
| Week 14 | Introduction about series and formula of series, geometric series, Test convergence and divergence of series. |
| Week 15 | Introduction of polynomials, Maclaurin polynomial, Taylor polynomial. |
| Week 16 | Preparatory week before the final Exam |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي المختبر

| | Material Covered |
|---------------|------------------|
| Week 1 | |
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |

Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts | THOMAS' CALCULUS, 4 th edition , 2018 BY: GEORGE B. THOMAS, JR., JOEL HASS, CHRISTOPHER HEIL and MAURICE D. WEIR | Yes |
| Recommended Texts | CALCULUS, 9 th edition , 2020 BY: JAMES STEWART, DANIEL CLEGG and SALEEM WATSON. | Yes |
| Websites | | |

Grading Scheme

مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|-----------------------------|------------------|---------------------|-----------|---------------------------------------|
| Success Group (50 - 100) | A - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | B - Very Good | جيد جداً | 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 (فقد المعالجة) | (45-49) | More work required but credit awarded |
| | F – Fail | راسب | (0-44) | Considerable amount of work required |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower 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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

| | | |
|--------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Title | Foundation of Mathematics II | Module Delivery |
| Module Type | C | <input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar |
| Module Code | UOKTB10MS108 | |
| ECTS Credits | 7.00 | |
| SWL (hr/sem) | 175 | |
| Module Level | UGI | |

| | | | |
|-------------------------------------------|-------------------------|--------------------------------------|----------------------------------------------------------------------------------|
| Administering Department | Mathmatic | College | Science |
| Module Leader | Muslleh Khuzaym Makhoul | e-mail | |
| Module Leader's Acad. Title | Assistant Professor | Module Leader's Qualification | Asst. Prof. |
| Module Tutor | | e-mail | |
| Peer Reviewer Name | Kadum Muhammad Hussein | e-mail | Kadum.m.allami@uoalkut.edu.iq |
| Scientific Committee Approval Date | 20/06/2023 | Version Number | 1.0 |

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Aims أهداف المادة الدراسية | <ol style="list-style-type: none"> 1. The department is interested in graduating cadres specialized in mathematics 2. Preparing outstanding students who are able to complete their postgraduate studies from masters and doctorates, in which the country suffers from a shortage 3. Graduating qualified students to work as research assistants in all scientific institutions in the field of mathematics 4. Preparing specialized cadres to work in the various state institutions, such as teaching in schools and others in the field of mathematics |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- A. Knowledge and Understanding

| | |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Learning Outcomes مخرجات التعلم للمادة الدراسية | <p>A1 - That the student be able to familiarize himself with the basic concepts and principles of all courses in the Mathematics Department.</p> <p>A 2- That the student be able to know the importance of the branches of mathematics and link them to life reality.</p> <p>A3 - That the student is able to understand the definitions, mathematical facts, and theories related to the vocabulary and courses of the mathematics department.</p> <p>A4- The student learns about the relationship between the curricula of the Mathematics Department.</p> <p>A 5- That the student becomes familiar with the applications of the courses in</p> |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicative Contents المحتويات الإرشادية | <p>B 1- The student acquires the skill of solving mathematical problems of all kinds and forms.</p> <p>B 2- To be able to employ theories in solving mathematical problems, and to have the ability to prove and prove proper mathematical proof.</p> <p>B 3- Develop the student's ability to deal with new and advanced cases and to deal with mathematical problems with all skill and high accuracy.</p> |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Learning and Teaching Strategies استراتيجيات التعلم والتعليم | |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies | <p>1- Follow the method of explanation and clarification of the courses.</p> <p>2- Lectures and seminars.</p> <p>3- Discussions and asking questions in the classroom in order to open the door for dialogue.</p> |

| Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------|---|
| Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل | 175 | Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا | 1 |
| Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل | 96 | Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4 |
| Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل | 271 | | |

Module Evaluation

تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|----------------------|-----------------|-------------|------------------|------------|---------------------------|
| Formative assessment | Quizzes | 2 | 10% (10) | 5, 10 | LO #1, 2, 10 and 11 |
| | Assignments | 2 | 10% (10) | 2, 12 | LO # 3, 4, 6 and 7 |
| | Projects / Lab. | 1 | 10% (10) | Continuous | All |
| | Report | 1 | 10% (10) | 13 | LO # 5, 8 and 10 |
| Summative assessment | Midterm Exam | 2 hr | 10% (10) | 7 | LO # 1-7 |
| | Final Exam | 2hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

Delivery Plan)Weekly Syllabus(

المنهاج الأسبوعي النظري

| | Material Covered |
|--------|-------------------------------------------------------------------------------------------------------------------------------|
| Week 1 | Binary Operations, Mathematical Systems, Groups, Rings, Fields. |
| Week 2 | Introduction, Construction of Natural Numbers, Axiom of Infinity, Peanos Axioms for Natural Numbers, |
| Week 3 | Arithmetic of the Natural Numbers, Ordered on the Set of Natural Numbers, The set of counting number, Mathematical Induction. |

| | |
|---------|-------------------------------------------------------------------------------------------------------------------|
| Week 4 | Introduction, Construction of Integers, Arithmetic of the Integers, Order on the Set of Integers, Absolute Value. |
| Week 5 | Introduction, Construction of Rational Numbers, Arithmetic of the Rational Numbers, |
| Week 6 | Order on the Set on Rational Numbers, Properties of Rational Numbers . |
| Week 7 | Sequences, Convergence, Cauchy Sequences, Cut, Positive Sequence. |
| Week 8 | Introduction, Construction of Real Numbers, Arithmetic of the Real Numbers, Order on the Set on Real Numbers, |
| Week 9 | exam |
| Week 10 | The Completeness, Properties of Real Numbers. |
| Week 11 | Introduction, Construction of Complex Numbers, Arithmetic of the Complex Numbers, |
| Week 12 | Order on the Set on Complex Numbers, Geometric Representation of Complex Numbers, |
| Week 13 | Modulus of Complex Number, Polar Representation of Complex Numbers, Roots of Complex Numbers |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي للمختبر

Material Covered

Week 1

| | |
|--------|--|
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |

Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts | foundations of mathematics Hadi Jaber Mustafa | Yes |
| Recommended Texts | 1. Birkhoff .G and Mac Lane. Saunders." A Survey of Modern Algebra ", New York,1965. 2. Burton D. M." Introduction To Modern Abstract Algebra", London, 1967. | No |
| Websites | | |

Grading Scheme

مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|-----------------------------|------------------|-----------|-----------|----------------------------------|
| Success Group (50 – 100) | A - Excellent | امتياز | 90 - 100 | Outstanding Performance |
| | B - Very Good | جيد | 80 - 89 | Above average with some errors |
| | C - Good | جيد جيداً | 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) | Considerable amount of work required |
| | | | | |

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower 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.

Module Description Form

نموذج وصف المادة الدراسية

| Module Information معلومات المادة الدراسية | | | | |
|-----------------------------------------------|-----------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Module Title | Linear Algebra | | Module Delivery | |
| Module Type | C | | <input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar | |
| Module Code | UOKTB10MS109 | | | |
| ECTs Credits | 5 | | | |
| SWL (hr/sem) | 125 | | | |
| Module Level | | UGI | Semester of Delivery | |
| | | | 2 | |
| Administrating Department | | Mathematics | College | College of Science |
| Module Leader | | | E-mail | |

| | | | |
|------------------------------------|-----|-------------------------------|--|
| Module leader's Acad. Title | | Module Leader's Qualification | |
| Module Tutor | --- | E-mail | |
| Peer Reviewer Name | --- | E-mail | |
| Scientific Committee Approval Date | --- | Version Number | |

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

| | | | |
|----------------------|------|----------|--|
| Prerequisite module | None | Semester | |
| Co-requisites module | None | Semester | |

Module Aim, Learning, Outcomes, and Indicative Contents

العلاقة مع المواد الدراسية الأخرى

| | |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aim Module اهداف المادة الدراسية | This course aims to make the students become familiar with the basic concepts of linear algebra with a thorough understanding of vector spaces, linear transformations and matrix operations enhancing the students' ability to reason mathematically and able to apply this knowledge to many fields in engineering, statistics and computer science. |
| Module Learning Outcomes مخرجات التعلم للمادة الدراسية | <ol style="list-style-type: none"> 1. Students completing this course will be able to compute the inverse of an invertible matrix. 2. Students completing this course will be able to find the null space of a matrix and represent it as the span of independent vectors. 3. Students completing this course will be able to find the matrix representation of a linear transformation given bases of the relevant vector spaces. |

| | |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Indicative Contents المحتويات الإرشادية | This module covers matrix theory and linear algebra, emphasizing topics useful in other disciplines. Linear algebra is a branch of mathematics that studies systems of linear equations and the properties of matrices. The concepts of linear algebra are extremely useful in physics, economics and social sciences, natural sciences, and engineering. Due to its broad range of applications, linear algebra is one of the most widely taught subjects in college-level mathematics. |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Learning and Teaching Strategies

استراتيجيات التعلم و التعليم

| | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies | Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering the type of simple experiments involving some sampling activities that are interesting to students. |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

| | | | |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------|-----|
| Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل | 79 | Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا | 5.2 |
| Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل | 46 | Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا | 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 | 2 | 10% (10) | 5, 10 | All |
| | Assignments | 2 | 10% (10) | 2, 12 | |
| | Projects / Lab. | 2 | 10% (10) | Continuous | |
| | Report | 1 | 10% (10) | 13 | |
| Summative assessment | Midterm Exam | 2 hr | 10% (10) | 7 | |
| | Final Exam | 2hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

| Week | Material Covered |
|---------|------------------------------------------------------------------------------------------------|
| Week 1 | Introduction to Linear Algebra, Systems of Linear Equations, Solving Linear Systems |
| Week 2 | Vectors and Matrices |
| Week 3 | Homogeneous Linear Systems |
| Week 4 | Vector Spaces and Transformations, Euclidean Vector spaces |
| Week 5 | Linear Transformations, The Space of Linear Transformations, Rank and Nullity |
| Week 6 | Inverse Transformations, Matrix of Linear Transformations |
| Week 7 | Change of Bases and Normal Forms Matrix Operations, Matrices |
| Week 8 | Matrix inverses |
| Week 9 | Determinants, Properties and Applications |
| Week 10 | Eigenvalues and Eigenvectors |
| Week 11 | Inner Product Vector Spaces |
| Week 12 | Definitions and General Properties, Eigen Space and Diagonalization of a Linear Transformation |
| Week 13 | Similar Matrices, Cayley – Hamilton Theorem and Its Applications |
| Week 14 | Bilinear Functions, Quadratic Functions |
| Week 15 | Quadratic Forms |
| Week 16 | Preparatory week before the final exam. |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

| | Material Covered |
|--------|------------------|
| Week 1 | |
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |

Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Required Texts | 1. Bernard Kolman" Introductory Linear Algebra with Applications" 2. Lange. S." Linear Algebra" 3. Mostow. G. D. and Sampson. J. H." Linear Algebra" London, 1969. 4. Stoll .R. R. and Wong .E. T." Linear Algebra" London, 1968. 5, Strang . G. " Linear Algebra and Its Applications" New York 1980 | No |
| Recommended Texts | | No |

Websites

Grading Schemes مخطط الدرجات

| Group | Grade | التقدير | Marks (%) | Definition |
|-------------------------------|------------------------|---------------------|-----------|-------------------------------------------|
| Success Group (50-100) | A. Excellent | امتياز | 90-100 | Outstanding Performance |
| | B. Very Good | جيد | 89-80 | Above average with some errors |
| | C. Good | جيد جداً | 79-70 | Sound works with notable errors |
| | D. Satisfactory | متوسط | 69-60 | Fair but with major shortcomings |
| | E. Sufficient | مقبول | 59-50 | Work meets minimum criteria |
| Fail Group (0-49) | FX. Fail | راسب (قيد المعالجة) | 45-49 | More work is required, but credit awarded |
| | F. Fail | راسب | 0-44 | A considerable amount of work required |

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

| | | |
|---------------------|--------------------------|------------------------|
| Module Title | General Mechanics | Module Delivery |
|---------------------|--------------------------|------------------------|

| | | | |
|------------------------------------|--------------|---------------------------------------------|--------------------|
| Module Type | S | <input checked="" type="checkbox"/> Theory | |
| Module Code | UOKTB10MS110 | <input checked="" type="checkbox"/> Lecture | |
| ECTS Credits | 4.00 | <input type="checkbox"/> Lab | |
| SWL (hr/sem) | 100 | <input type="checkbox"/> Tutorial | |
| | | <input type="checkbox"/> Practical | |
| | | <input checked="" type="checkbox"/> Seminar | |
| Module Level | UGx1 UGI | Semester of Delivery | 2 |
| Administering Department | Mathematics | College | College of Science |
| Module Leader | | e-mail | |
| Module Leader's Acad. Title | | Module Leader's Qualification | |
| Module Tutor | | e-mail | |
| Peer Reviewer Name | Name | e-mail | E-mail |
| Scientific Committee Approval Date | 01/06/2023 | Version Number | 1 |

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

| | | | |
|----------------------|------|----------|--|
| Prerequisite module | None | Semester | |
| Co-requisites module | None | Semester | |

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

| | |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Module Objectives أهداف المادة الدراسية | <p>Physical Sciences aims to develop learners':</p> <ul style="list-style-type: none"> • Interest in and appreciation of physics and chemistry, and their usefulness in helping to explain phenomena and solve problems encountered in their ever-changing world • Understanding of the theories and models used to describe, explain and make predictions about diverse natural phenomena and chemical systems, structures and properties • Understanding of the ways in which matter and energy interact in physical systems across a range of scales • Understanding of the factors that affect chemical systems, and how chemical systems can be controlled to produce desired products • Appreciation of physics and chemistry as experimental sciences that have developed through independent and collaborative research, and that have significant impacts on society and implications for decision making • Expertise in conducting a range of scientific investigations, including the collection and analysis of qualitative and quantitative data and the |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p style="text-align: center;">interpretation of evidence</p> <ul style="list-style-type: none"> • Ability to critically evaluate and debate scientific arguments and claims in order to solve problems and generate informed, responsible and ethical conclusions • Ability to communicate scientific understanding and findings to a range of audiences, including through the use of appropriate representations, language and nomenclature. |
| <p style="text-align: center;">Module Learning Outcomes</p> <p style="text-align: center;">مخرجات التعلم للمادة الدراسية</p> | <p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none"> 1. Plan activities, monitoring and evaluating progress while completing activities, meeting deadlines and contributing to completion of group activities in the context of physics and chemistry 2. Communicate, predict and explain physical science phenomena, using qualitative and quantitative representations in appropriate modes and genres, and following accepted conventions and terminology 3. Apply discriminating research skills and apply the principles of academic integrity; collecting and recording primary and secondary data from a variety of relevant sources 4. Utilize practical skills safely, and competently select and use scientific techniques and equipment to collect and organize data related to physics and chemistry 5. Use scientific inquiry skills to enable them to perform and evaluate experiments relating to physics and chemistry; analyzing and interpreting data to draw valid conclusions 6. Make connections between knowledge of physics and chemistry and ethical, political, cultural, social, economic and scientific considerations in differing contexts 7. Apply physics and chemistry concepts, models and theories to analyze physical and chemical phenomena 8. Apply physics and chemistry processes to analyze physical and chemical phenomena. |
| <p style="text-align: center;">Indicative Contents</p> <p style="text-align: center;">المحتويات الإرشادية</p> | <p>For the content areas of Physical Sciences, the three (3) interrelated strands:</p> <p style="text-align: center;">1-Science Inquiry Skills 2-Science as a Human Endeavour 3-Science Understanding.</p> <p>In the practice of science, the three strands are closely integrated. The work of scientists reflects the nature and development of science, is built around scientific inquiry, and seeks to respond to and influence society. Science Inquiry Skills and Science as a Human Endeavour strands (respectively):</p> <ul style="list-style-type: none"> • Undertake, interpret and analyze experiments and investigations • Analyze the application and impact of physical science in society • Must be integrated into the five interwoven threads of Science |

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

| | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategies | <ul style="list-style-type: none"> • Use analogies and anecdotes. • Group your students by knowledge gaps. • Tell your students what they don't know. • Teach everything you can get away with. • Summarize the material in different ways. <ul style="list-style-type: none"> • Encourage them to ask questions. • Use anecdotes to show how physics works. |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| Student Workload (SWL) الحمل الدراسي للطلاب محسوب ل ١٥ اسبوعا | | | |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------|---|
| Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل | 48 | Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا | 3 |
| Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل | 52 | Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا | 4 |
| Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل | 100 | | |

| Module Evaluation تقييم المادة الدراسية | | | | | |
|---------------------------------------------------|------------------------|-------------|------------------|------------|---------------------------|
| | As | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
| Formative assessment | Quizzes | 2 | 10% (10) | 2 and 4 | LO #1, #2 and #3, #4 |
| | Assignments | 2 | 10% (10) | 3 and 5 | LO #5, #6 and #7, #8 |
| | Projects / Lab. | 1 | 10% (10) | Continuous | All |
| | Report | 1 | 10% (10) | Continuous | All |
| Summative assessment | Midterm Exam | 1 | 10% (10) | 7 | LO #1 - #7 |
| | Final Exam | 3hr | 50% (50) | 16 | All |
| Total assessment | | | 100% (100 Marks) | | |

| Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري | |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week | Material Covered |
| Week 1 | Giving information about the module topics and brief description about evaluation ways in addition to books or references that can be helpful for this module a long with the lectures. General introduction. |

| | |
|----------------|---------------------------------------------------|
| Week 2 | CH1 : Uniformly Accelerated Motion – part 1 |
| Week 3 | CH1 : Uniformly Accelerated Motion – part 2 |
| Week 4 | CH2 : Newton laws – part 1 |
| Week 5 | CH2 : Newton laws – part 2 |
| Week 6 | CH3 : Work , Energy and Power – part 1 |
| Week 7 | CH3 : Work , Energy and Power – part 2 |
| Week 8 | Mid-term exam |
| Week 9 | CH4 : Impulse and Momentum – part 1 |
| Week 10 | CH4 : Impulse and Momentum – part 2 |
| Week 11 | CH5 : Fluids – part 1 |
| Week 12 | CH5 : Fluids – part 2 |
| Week 13 | CH5 : Simple Harmonic Motion and Springs – part 1 |
| Week 14 | CH5 : Simple Harmonic Motion and Springs – part 2 |
| Week 15 | Preparatory week before the final exam |

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

| Week | Material Covered |
|----------------|-------------------------|
| Week 2 | |
| Week 3 | |
| Week 4 | |
| Week 5 | |
| Week 6 | |
| Week 7 | |
| Week 8 | |
| Week 9 | |
| Week 10 | |
| Week 11 | |
| Week 12 | |
| Week 13 | |
| Week 14 | |
| Week 15 | |

Learning and Teaching Resources

مصادر التعلم والتدريس

| | Text | Available in the Library? |
|--|-------------|----------------------------------|
| | | |

| | | |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Required Texts | • Physics for Scientists and Engineers, Serway, 6 th edition. | Yes |
| Recommended Texts | Schaum outlines , College Physics , Frederick j. Bueche Eugne Hecht . Ninth edition , 1997 P. Atkins and J. De Paula, Atkins' Physical Chemistry, eighth edition, W. H. Freeman Company, 2006. Fundamentals of Physics, Halliday, Resnick and Walker, 10 th Fundamental University Physics, Marcelo Alonso, Edward J. Finn, Vol. 1 | No |
| Websites | https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering | |

| 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) | Considerable amount of work required |
| | | | | |
| <p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower 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.</p> | | | | |

