COLLEGE OF APPLIED AND HEALTH SCIENCES

ENGL 101: English Communication Skills I   **3 Credits**

ENGL101 English Communication Skills 1 is offered by the CLFS (Centre for Language and Foundation Studies) as a post-foundation course to assist students in their college studies. It covers all 4 skills in English with emphasis on Speaking and Writing.

MATH101: Calculus I   **3 Credits**

Students of Calculus will develop the quantitative skills needed to be successful in subsequent courses in engineering and applied and human sciences. These skills will enhance their ability to analyse, solve and communicate their solutions to fellow professionals using the language of mathematics. Students will use the Moodle to the access course materials and communicate with classmates and the instructor. They will enhance teamwork and leadership skills by working in groups to achieve the solutions to designated exercises. The course will introduce students to the concepts of Limits, Continuity, Derivatives and Integration]

Phys101: Physics I   **3 Credits**

An understanding of the basic concepts of Physics is fundamental for developing students' understanding of the more applied scientific disciplines such as Chemistry, Biology and other Applied Sciences. Physics 101 is an introductory Physics module focusing on basic principles and concepts in Physics. It is designed for students who will continue their undergraduate degree programs in Engineering and Applied Sciences.

Phys181: Physics I Lab   **1 Credit**

Physics is an experimental science. The theory that is presented in lectures has its origin and is validated by experimental measurement. Phys181 explores the practical aspect of Physics and the basic principles and concepts in Physics as taught in theory are applied in the laboratory. It is designed for students who will take their undergraduate degree programs in Engineering and Applied Sciences.

INTE105 Computer Programming I   **3 Credits**

[This course introduces computer programming fundamentals. Students will be taught how computer programs works, the logic and the principles of problem solving. Students will learn about variables,

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array, loops and other data manipulation techniques (introductory level). Python programming language will be used to deliver this course learning objectives]

ENGL102: English Communication Skills II   3 Credits

The course is offered by the CLFS (Centre for Language and Foundation Studies) as a post-foundation course to assist students in their college studies. It covers all 4 skills in English with emphasis on Speaking and Writing.

MATH 140: Discrete Mathematics   3 Credits

The course of discrete mathematics will develop thinking skills and help students grasp the Basic concepts of discrete mathematics. The course will use discrete methods that uses algebra and arithmetic. Students will continue to use the web-based course supplement to access course material and assessments. The instructor will use distance T/L/A methods to deliver material and assess students' skills as well Moodle, Microsoft teams, google research Engine, designing videos and other tools that support distance learning. This course will enhance teamwork and leadership skills by working in groups to achieve the solutions to designate problems.

MATH102: Calculus II   3 Credits

This is a three credit hours Calculus II course primarily designed for Mathematics/ engineering majors. The student is assumed to be capable and versed in the standard Calculus I topics of taking limits, continuity, taking derivatives of fairly complicated functions, using derivatives, calculating the definite integral for basic functions, integration by substitution and the standard applications of the definite integral. Students of Calculus II will develop the quantitative skills needed to be successful in subsequent courses in engineering. These skills will enhance their ability to analyse, solve and communicate their solutions to fellow professionals using the language of mathematics.

MATH131: Principles of Statistics   3 Credits

Students of Statistics will develop the skills needed to be successful in subsequent courses in college of applied and health science. These skills will enhance their ability to do research, by introducing the statistical methods of collecting, representing, analyzing data and testing Hypothesis. These statistics also help in a better decision making.

MATH132: Probability Theory I   3 Credits

An introduction to the theory and practice of statistics. Topics include descriptive statistics, probability, random variables, binomial, hypergeometric, Poisson, uniform, normal and exponential distributions, sampling distributions, confidence intervals and hypothesis tests for means and proportions, Pearson's Chi-squared test, correlation, and linear regression.

INTE130: Object Oriented Programming   3 Credits

[This course extends computer programming I, where students will further develop their programing skills in terms of programming logics, real industry problem solving. Object oriented programming elements inheritance, polymorphism, abstraction and encapsulation are introduced and applied to implement common data structures and solutions

ARAB101: Arabic   3 Credits

يعنى هذا المقرر بتنمية مهارات اللغة العربية: الاستماع، والتحدث، والقراءة، والكتابة؛ وذلك من خلال دراسته لجملة من النصوص المنتقاة التي نركز فيها على طرح أسئلة تتعلق بكل مهارة، ويعنى هذا المقرر في بتطبيق بعض القواعد النحوية والإملائية المشتقة من النصوص، كما يعنى بتطوير مهارة الكتابة بدراسة التحرير الوظيفي، مثل: كتابة الرسالة الرسمية، وطريقة كتابة التقارير، ومعرفة الأساسيات في كتابة محضر الاجتماعات، وكتابة المقال.

ISLM101: Islamic Civilization   3 Credits

يتناول هذا المقرر أوضاع عُمان الحضارية والتاريخية التي مرت بها، ويظهر إسهامات العُمانيين على امتداد تاريخهم في مسيرة الحضارة الإنسانية عامة والإسلامية خاصة، ويوجه الطالب نحو تتبع تلك الجوانب المضيئة من تاريخه، وأن يفخر بمنجزات حضارته الإسلامية لتكون نبراسا تقوده إلى إعادة أمجاده، وأن يستوعب تلك المعطيات التي أسهمت في ذلك العطاء الإنساني في فترة من فترات التاريخ والحضارة العمانية؛ بفضل الانفتاح الفكري والعقلي اللذي دعا إليهما الإسلام الحنيف، كما حثّ على طلب العلم والتأمل والتفكر، وروح التسامح الذي جعل من الحضارة الإسلامية حضارة عالمية.

PHIL101: Introduction to Logic (Philosophy)   3 Credits

[This basic course is designed to inform students: introduction to the meaning of philosophy and its cultural significance; major themes in philosophy, with examples; Western classification of philosophical eras and their neglect of Islam. Comparative historical and analytical approaches are used to stimulate the students' critical faculties. Emphasis will be given to understand the basics of logic which studies reasoning and arguments systematically, and how to formulate and evaluate natural language arguments. The goal is to provide students with the skills for producing formally valid

arguments, using different methods of inference. Topics will also include sentential logic, logic of categorical statements and fallacies].

MATH242: Linear Algebra   3 Credits

Algebra of Matrices and Vector Spaces and applications to Solutions of systems of linear equations and geometric Transformations are studied in this course.

MATH211: Principles of Mathematics   3 Credits

The course will use mathematical inductive and deductive reasoning as an important tool to prove theorems and find relations with the use of mathematical induction, the course will use the language of set theory, interpret issues in different areas of mathematics, apply the fundamental mathematical concepts including the concepts of functions and relations in real life problems.

MATH221: Ordinary Differential Equations I   3 Credits

This course will introduce to students to differential equations. Initially differential equations covered the methods to solve differential equations including first and second order differential equations and its applications. Next, the course will introduce to the separation of variables method to solve partial differential equations problem. Then, Laplace transform will be discussed as a method.

SOCI 101: Sociology   3 Credits

Sociology is a basic course to educate students about the society, social relationships and different social institutions. This course encourages to look beyond individual problems or accomplishments and to understand the inter connections between people and their surroundings. Topics include in this course: Basic concept and History of sociology, Culture, Family, Marriage, Religion, Population and Deviant behaviour.

CHEM101: Chemistry I   3 Credits

Chemistry is the study about the composition, properties, structure and reactivity of various forms of matter. CHEM 101 is an introductory chemistry course focusing on basic principles and concepts in analytical, organic, inorganic, and physical chemistry. It covers materials such as chemical foundations, units, and measurements, naming and formulae of inorganic compounds and ions, atomic

structure and periodic table, chemical bonding, stoichiometry and mole concept, gases, Kinetics and energy, Lewis structures, 3D molecular structures, and polarity. In addition, the course highlights basic analytical topics such as acids and bases, ionic reactions, dilution, buffers and blood, redox reactions, chemical equilibrium, applications of aqueous equilibria, and titration. The course also covers organic chemistry compounds, basic functional groups, naming of organic compounds, and stereoisomers.

CHEM181: Chemistry I Lab   1 Credit

This is a one-semester laboratory course intended as the companion course for Chemistry 101 theory and is an introductory lab course focusing on basic principles and concepts in Chemistry. Topics include laboratory safety, chemical measurements, significant figures, laboratory techniques, naming and writing chemical formulae of compounds, chemical reactions, precipitation reactions, pH measurements, acid/base titrations, cation and anion analysis, stoichiometry problems, and calorimetric experiments for heat of reactions.

BIOL101: Biology I   3 Credits

This course provides an opportunity to explore the nature of cells from prokaryote to eukaryotes. Biology is the study of different life forms and their interconnectedness with all other life forms. It provides opportunities to learn about the processes of all living things. Biologists contribute to medical and biotechnological advances. By studying Biology, students become more aware of ecological issues and develop more sustainable ways of using our natural resources e.g. soil, land, or water. The study of biology forms a firm foundation for all the other related courses including Food Science, Human Nutrition, Biomedical Science etc. that are relevant to the students of the College of Applied Sciences.

BIOL181: Biology I Lab   1 Credit

This course provides an opportunity to explore the nature of cells, from prokaryote to eukaryotes. Biology 1 Laboratory offers a variety of laboratory exercises on current concepts in cell and molecular biology using research-grade scientific equipment. Different teaching techniques, materials and instruments will be employed to provoke student's interest to enrich their understanding about the basic concepts and principles in cell and molecular biology. Numerous laboratory methods will be utilized in demonstrations and student experiments. Students will exercise critical thinking for interpreting laboratory results.

PHYS 102: PHYSICS - 2   3 Credits

An understanding of the basic concepts of Physics is fundamental for developing students' understanding of the more applied scientific disciplines such as Chemistry, Biology and other Applied Sciences and engineering. Physics 102 is an introductory Physics module focusing on basic principles and concepts in Physics. It is designed for students who will continue their undergraduate degree programs in Engineering.

PHYS 182 Physics 2 Lab   1 Credits

Physics is an experimental science. The theory that is presented in lectures has its origins and is validated by experimental measurement through experiments. Physics 182 laboratory is an introductory Physics module focusing on experiments of the basic principles and concepts in Physics 102. It is designed for students who will continue their undergraduate degree programs in Engineering and Applied Sciences.

MATH212: Real Analysis   3 Credits

Metric spaces-analysis point of view: definition of a metric, the concepts of neighbourhood, limit points, interior points, open sets, closed sets, perfect sets, closure of a set, compact sets and their elementary properties including Heine-Borel theorem, finite intersection property, and the main characterization of compact sets in Euclidean spaces, connected sets. Sequences: Limit of sequences, subsequence and sub sequential, Cauchy sequences, Monotone sequences (in IR), upper and lower limits. Continuity: Limits of functions, Continuous functions, continuity and compactness, uniform continuity, continuity and connectedness, monotonic functions, convex functions, and extension theorems. Differentiable function (in IR) and the Mean Value Theorem. Riemann Stieltjes Integral and its existence.

MATH251: Modern Euclidean Geometry   3 Credits

The course introduces students with Euclid's Elements, lays out a system of axioms for geometry, on to neutral geometry, Euclidian and hyperbolic geometries from an axiomatic point of view, and then non-Euclidean geometry. Good proof-writing skills are emphasized, along with a historical development of geometry.

MATH301: Multivariable Calculus   3 Credits

This is a first course in multivariable calculus, covering: functions of several variables and the gradient, multiple integrals and the Jacobian, line integrals, Green's theorem, divergence and curl of a vector field, surface integrals, stokes' theorem and the divergence theorem (and how they are applied in an application context), constrained max/min problems and the method of Lagrange multipliers. Students will be required to solve standard computational problems and understand the main concepts, definitions, and theorems in each section covered, including the supplementary notes.

MATH321: Partial Differential Equations I   3 Credits

Classification of partial differential equations, comparison with ordinary differential equations, Heat equation: Steady state temperatures insulated Bar, convection, sturm-Liouville problems, Eigen function expansion, finite, semi-Infinite and infinite Rod, Error function, Fourier and Laplace transforms. The wave equation: vibrating string, D'Alembert's solutions on finite vibrating string and beam, semi-infinite, infinite Domains; Fourier transforms (sine and cosine transforms). Potential equation: in a rectangle, a slot and a disk.

MATH341: Modern Algebra   3 Credits

Binary operations. Groups, subgroups, cyclic subgroups and direct product of groups. Permutation groups. Cyclic groups. Group homomorphisms and isomorphisms. Classification of cyclic groups. Cosets and Lagrange's theorem. Normal subgroups and factor groups. The fundamental theorem of group homomorphisms (statement). Rings, integral domains and fields. Some non-commutative examples. The field of quotients of an integral domain. Ideals and quotient rings. Prime and maximal ideals. Homomorphism's of rings.

MATH312: Set Theory   3 Credits

This course gives basics of set theory. Topics to be covered in this course include Mathematical Logic, methods of proof. The concept of sets, relations, equivalence relation, order relation, functions. Finite and infinite sets, denumerable and no denumerable sets. Cardinal numbers and their arithmetic. The Schroeder-Bernstein theorem.

MATH342: Number Theory   **3 Credits**

Unique factorization in Z. Linear Diophantine equations. Congruence. Linear congruence. Fermat's, Euler's and Wilson's theorems. Euler's function. The divisors of an integer. Perfect numbers. Quadratic congruence. (Statement of) the quadratic reciprocity law. Pythagorean triplets. Infinite descent and the case $n = 4$ of Fermat's last theorem. Sums of two and of four squares. Pell's equation.

MATH352: Graph Theory   **3 Credits**

Fundamental concepts of Graph theory with basic properties of trees and distances. Matching and factors. A modern approach to by the means of coloring graphs and further investigations by study of Euler's formula.

MNGT313: Entrepreneurship   **3 Credits**

Are you an entrepreneur? That's the question many individuals are asking in this age of both corporate and government downsizing and follow-your-dream philosophy, post dot-com age of the Entrepreneurial start-up. This course is designed for those who plan to start, or who have already started their own business. Individuals who hold leadership or management positions within a business, who are part of an existing family-business, or who want to know what it takes to be successful as an entrepreneur will find real-world applications and solutions to the every-day challenges of owning and running a business here. In this course, students learn the essential attributes of an entrepreneur and the stages one goes through in taking the seed of an idea and growing it into a successful business. But it also takes more than a good business plan and money to succeed - entrepreneurs must understand that all too often, the strengths that helped them be successful as a start -up become liabilities to overcome in order to take it to the next level. This course provides practical insights into the differences between effective leadership and management by exploring the concepts of Emotional Intelligence in the workplace and determining how to identify and develop human capital – the lifeblood of every business.

MATH411: Complex Analysis   **3 Credits**

This course is to recognize the importance and usefulness of complex analysis, extend some concepts studied in Math and Calculus course. The course covers topics on Complex number system. Analytic functions: Cauchy Riemann Equations. Polar coordinates and Harmonic functions. Elementary

functions: Exponential, Logarithmic and trigonometric functions and their inverses. Integrals: Cauchy-Coursat theorem and Cauchy integral formula. Series: convergence, residues and poles.

MATH451: Functional Analysis   3 Credits

The course provides introduction to the methods of functional analysis. Topics of this course include linear spaces and normed, incomplete normed, Banach spaces and concrete examples. Spaces of bounded linear operators and equivalent norms. Finite dimensional normed spaces and compactness. Bounded linear functional. Dual spaces and the form of some dual spaces. Hilbert spaces.

MATH421: Ordinary Differential Equations II   3 Credits

Series solutions of second order ordinary linear differential equations: Review of series solutions near ordinary and singular points, series solution near regular singular points, Bessel's equations, systems of first order linear order ordinary differential equations: Introduction, review on matrix functions, uncoupled systems, diagonal systems, using diagonalization to solve systems of first order ordinary differential equations, exponential of matrices, the fundamental theorem of linear systems, linear systems in the plane (phase plane portraits), complex eigenvalues, multiple eigenvalues, nonhomogeneous linear systems, nonlinear differential equations and stability: Autonomous systems and stability, almost linear systems, the fundamental theorem of nonlinear systems, competing species, Predator-Prey equations, Liapunov's theory for stability, periodic solutions and limit cycles.

MATH461: Numerical Analysis   3 Credits

This course will emphasize the development of numerical algorithms to provide solutions to common problems formulated in science and engineering. The primary objective of the course is to develop the basic understanding of the construction of numerical algorithms, and perhaps more importantly, MATLAB application the applicability and limits of their appropriate use. The emphasis of the course will be the thorough study of numerical algorithms to understand (I) the guaranteed accuracy that various methods provide, (2) the efficiency and scalability for large scale systems. And (3) issues of stability. Topics include the standard algorithms for numerical computation: root finding for nonlinear equations, interpolation and approximation of functions by simpler computational building blocks (for example - polynomials and splines), numerical differentiation and divided differences, numerical

quadrature and integration, numerical solutions of ordinary differential equations and boundary value problems, numerical optimization and regularization algorithms.

MATH462: Operation Research 3 Credits

The linear programming model; The Simplex method (general problem, Basic feasible solutions, theory of simplex method, the simplex tableau, artificial variables, redundant systems, a convergence proof, Linear programming and convex); Duality (definition of the dual problem, interpretations, the duality theorem, the complementary slackness theorem, dual simplex algorithm); Sensitivity analysis (matrix representation of the simplex algorithm, changes in the objective function, addition of a new variable, changes in constant term column vector, addition of a constraint); Integer programming (Models with integer programming formulations, Geomory's cutting plane algorithm, a branch and bound algorithm); The transportation problem (a distribution problem, the transportation problem applications).

MATH442: Mathematical Modeling   3 Credits

This course is an introductory course on Mathematical Modelling. It gives basic concepts in mathematical modelling, modelling skills with emphasis on using mathematical models to solve real-life problems. Topics to be covered in this course includes: mathematical classification of Models, constraints and terminology on Models, modeling process, population dynamics models for single species, stability analysis of growth models, scaling variables, bifurcation analysis of the ODE $y' = f(y, c)$; saddle-node, trans critical and Pitchfork bifurcations, models from science and finance, Newton's law of cooling or heating, Chemical Kinetic reactions, modeling by systems of equations, modeling interacting species; model building, and different types of interactions models.

Math422: Partial Differential Equations II   3 Credits

Heat, wave, and potential equations in infinite domains (two and three dimensions), interior Dirichlet problem for a circle, Dirichlet problems in an annulus, spherical harmonies. A nonhomogeneous Dirichlet problem, systems of partial differential equations, existence, and uniqueness theorems.

MATH313: Advanced Real Analysis   3 Credits

This is an advanced course in Real Analysis. The course covers the topics: Sequences of functions: Convergence and uniform convergence; Approximation theorems (Stone, Weierstrass theorems), Series of functions: Absolute and uniform convergence, Cauchy criterion, Weierstrass M-test, Dirichlet test and Abel test, Differentiation in RP: Chain Rule and Mean-Value theorem, inverse and implicit function theorems.

MATH332: Advanced Statistics 3 Credits

This is an advanced course in Statistics with an introduction to descriptive statistics and predictive statistics. The course covers the topics: hypothesis testing and estimation for means, proportions and variances; sample size determination; uses of Chi-square distribution; analysis of variance; linear correlation and regression, non-parametric statistics, and statistical research.

MATH343: Advanced Linear Algebra 3 Credits

This is an advanced course in linear algebra. The course covers the topics: Matrix representations of linear transformation, change of basis, similarity, characteristic and minimal polynomials of a linear operator, Cayley-Hamilton theorem, eigenvalues, eigenvectors and diagonalization, canonical forms, Inner product spaces, Orthogonality, orthonormal bases, changes of bases, Gram-Schmidt orthogonalization process, Normal, orthogonal, and unitary operators, Jordan, and rational forms, Linear functional and the dual spaces.

MATH371: Special Functions 3 Credits

Series solutions near regular singular points (Bessel functions), Legendre and associated Legendre functions, Fourier series, Fourier transform, integral Fourier transform, Beta and Gamma functions.

MATH344: Advanced Modern Algebra 3 Credits

Rings, integral domains, and fields. Some non-commutative examples. The field of quotients of an integral domain. Ideals and quotient rings. Prime and maximal ideals. Homomorphism of rings.

MATH314: Topology 3 Credits

Topological spaces: Open sets, closed sets, closure, interior and boundary of a set, cluster points and the derived set, isolated points. Relative topology and subspaces. Bases. Finite product of topological

spaces. Continuous functions, open functions, closed functions, homeomorphism, T0, T1 and T2 spaces, connected and compact spaces.

MATH412: Advanced Complex Analysis   3 Credits

Residues and Poles: Evaluation of improper real integrals. Improper integrals involving sines and cosines. Definite integrals involving sines and cosines. Integration through a Branch cut. Logarithmic residues and Rouché's theorem. Mapping by elementary functions. Conformal mappings and transformations of Harmonic functions. Singularities and the argument principle.

MATH414: Fuzzy Sets and its Applications   3 Credits

Fuzzy sets. Operations on fuzzy sets. Fuzzy relations. Fuzzy graph and fuzzy relations. Fuzzy logic. Applications on fuzzy logic.

MATH441: Analytic Number Theory   3 Credits

Properties of the Riemann zeta function, its analytic continuation, the functional equation, Euler's product formula, and the divergence of the reciprocal sum of primes. The Prime Number Theorem. Dirichlet series and their basic properties. Dirichlet characters and the L-functions they define. Dirichlet theorem on infinitely many primes in an arithmetic progression. Further topics.

FINA 202 A: التمويل الشخصي   **3 ساعات**

يتناول هذا المقرر دراســة المفاهيم والجوانب المتعلقة بالتمويل الشــخصــي،ويهتم بتزويد الطلاب بالمعرفة الكافية التي تمكنهم من تطبيق مبادئ التمويل في القرارات المالية التي تتعلق بالفرد أو بالعائلة وتحدد كيف يتعامل الأفراد أو العائلات مع دخلهم ووضــع ميزانية وخطة ادخار وإنفاق لمواردهم المالية عبر الوقت، مع الأخذ في الإعتبار المخاطر المالية وأحداث الحياة المستقبلية المتقلبة.

LAWC102:التشريعات الوظيفية   **3 ساعات**

يتناول هذا المســاق التشــريعات التي تنظم الوظيفة العامة في ســلطنة عمان والمبادئ التي تحكمها وكذلك وتوصــيف الوظائف إبراز حقوق الموظف وواجباته والصــفات الواجب توافرها في الموظف، وتدريب الموظف وتحديد الرواتب والتعويضــات وترقياتهم وتقييم ادائهم، والوصـــف الوظيفي مفهومه واهميته وأهدافه ومعايير الوصـــف الوظيفي وكيفية كتابة الوظف الوظيفي وكذلك إجراءات المساءلة الإدارية والتظلمات التي يقدمها الموظف وحالات انتهاء خدمته.

PSYC100: مدخل إلى علم النفس   **3 ساعات**

هذا المقرر يطرح المبادئ الاساسية لمفهوم علم النفس بشكل عام، فهو يركز على الدراسة العلمية للسلوك والعمليات العقلية للبشر، وهو يسعى إلى تزويد الطلبة بمجموعة من المعلومات والمفاهيم والمبادئ النفسية بشكل عام، ومن وجهة ثانية يستثمر المقرر خبرات الطلبة الذاتية في مناقشة بعض القضايا المهمة في ميدان الحياة المختلفة. يغطي هذا المساق تاريخ علم النفس والفكر العلمي ، والأسس البيولوجية للسلوك ، ومنهجية البحث ، والإحساس والإدراك ، وحالات الوعي ، والذاكرة ، والتعلم ، والذكاء ، والدافع ، والعاطفة ، والاضطرابات النفسية والعلاجات. تستخدم النظريات والمبادئ والمفاهيم النفسية لوصف السلوك البشري وفهمه وشرحه والتنبؤ به

لقانون في حياتنا:LAWC   **3 ساعات**

يتناول هذا المساق أهمية القانون في المجتمع، ومصادره، وما هي أهم فروعة، الخصائص التي يتميز بها، وما هي وظيفته والأهداف التي يسعى إلى تحقيقها، والتفرقة بي القواعد القانونية وغيرها من قواعد السلوك الأخرى، ثم يتناول أهم الموضوعات في القانون العام كنظام الخدمة المدنية وقانون الجزاء وأهم الموضوعات في القانون الخاص كالأوراق التجارية وحماية المستهلك وحقوق العمال، والشركات، والملكية الفكرية، مع الأخذ ببعض التطبيقات العملية في أهم العقود المنتشرة كعقد البيع والايجار والتأمين.

نظام الأسرة :LAWC103

تتحدث المادة عن نظام الأسرة في التشريعات العمانية بداية من نشأتها وكيفية تكوينها وأسس العامل بينها فتحتوي المادة على أهم عناوين نظام الزواج والطلاق وأحكام الأهلية والولاية والوصاية وحقوق الأيتام والوصية وشروطها وعن أهم أحكام المواريث.

الاسعافات الأولية :FAID101   **3 ساعات**

صمم هذا المقرر لإكساب الطالب المعرفة والمهارات اللازمة لتقييم الحالات الصحية وتقديم الاسعافات الأولية للمصابين بنزف الدم والكسور والصدمات ونوبات القلب والحروق بأنواعها لمختلف الفئات العمرية. كذلك اكساب الطالب المعرفة بالأخلاقيات المهنية الصحية وسبل الحماية من الاخطار المرافقة للإسعافات الأولية اثناء ادائها. هذا المقرر سوف يدرس عمليا وسوف يغطى المحتوى النظري المعني قبل البدء في التطبيق.

مقدمة في الصحة العامة :PUHE211   **3 ساعات**

يقدم هذا المساق المفاهيم الأساسية في مجال الصحة العامة، مثل التاريخ والمجالات الأساسية للصحة العامة المتأصلة في تعزيز الصحة على مستوى المجتمع. كما ستزود هذه الدورة الطلاب بالمعرفة بمختلف المجالات الرئيسية للصحة العامة، بما في ذلك الأساليب التحليلية، وعلم الأوبئة، والعوامل الاجتماعية والسلوكية، والقضايا البيئية، والرعاية الطبية.

MATH361: Computational Mathematics   3 Credits

The course provides introduction to mathematical programming languages (simulation, programming, computation, and graphing). Solve mathematical problems in calculus, linear algebra and differential

equations using computer software. Use computational techniques to solve problems arising in real-life applications.

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المجتمع العُماني: OMNS101   **3 ساعات**

يهدف المقرر إلى تعزيز وعي الطلبة بهوية المجتمع العماني وقيمه ومؤسساته، وفهم دور المتغيرات التاريخية والديمغرافية والثقافية في تشكيل الهوية العمانية وتحديد سماتها، والتعريف بالهيكل الإداري للدولة، ومنطلقات النهضة العمانية المعاصرة ومبادئها، كما يهدف المقرر أيضا إلى تعزيز قيم المواطنة المتمثلة في الانتماء والولاء والمشاركة المجتمعية والقيم العامة والحقوق وحقوق المواطن وواجباته، وأيضا التعريف بعلاقات السلطنة ودورها على المستوى الخليجي والعربي والدولي بما في ذلك المعاهدات والمواثيق الدولية، كما يهدف المقرر إلى تسليط الضوء على قضايا الأمن الفكري، والمواطنة الرقمية والمشكلات الاجتماعية المعاصرة في المجتمع العماني.

الأدب العربي : ARAB102   **3 ساعات**

يسعى المقرر إلى تعريف الطلبة بالأدب العربي تعريفًا عامًا من حيث تاريخه العام وأجناسه الشعرية والنثرية، وتدريسهم نماذج مشرقة شعرية ونثرية منتقاة من مختلف العصور الأدبية، بما يسهم في تنمية مهاراتهم في فهم الأدب وتحليله وتذوقه تذوقا جماليًا.

حقوق الإنسان :LAWC017   **3 ساعات**

تتناول المادة تعريف بحقوق الانسان وتاريخها وأبرز المواثيق والاتفاقيات الدولية المنظمة لها، والنصوص التي تضمنتها الدساتير في حماية الحقوق والحريات، مع المقارنة مع النظام الاساسي للدولة بسلطنة عمان، والاشارة إلى الاعلان العالمي لحقوق الانسان وأبرز اتفاقيات القانون الدولي لحقوق الإنسان.

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ENEN 401: Renewable Energy   **3 Credits**

Introduction to Renewable energy principles and their environmental impacts. Understand renewable energy design challenges and future trends. Introduce current renewable energy current technologies such as, Solar Energy, Wind Energy, Biomass, Hydropower, …etc. •

ENEN581: Climate Change   **3 Credits**

This course introduces the science of climate works and change; what factors cause climate to change across different time scales and how those factors interact; how climate has changed in the past; and the possible consequences of climate change for our planet. The course explores evidence for changes in ocean temperature, sea level and acidity due to global warming. Finally, the course looks at the

connection between human activity and the current warming trend and considers some of the potential social, economic and environmental consequences of climate change.

PHYS182: Physics I Lab   **3 Credits**

[Physics is an experimental science. The theory that is presented in lectures has its origins and is validated by experimental measurement through experiments. Physics 182 laboratory is the lab companion for PHYS102 theory. This course focuses on experiments of the basic principles and concepts in Physics 102. It is designed for students who will take their undergraduate degree programs in Engineering and Applied Sciences.

ECON101: Principles of Microeconomics   **3 Credits**

The course deals with the free market system; and interactions of households and business firms; how the price changes prices for goods & services, the other factors that could alter the market forces, demand & supply. The course also considers market structure & market failure.