

COURSE DESCRIPTION

BACHELOR OF EDUCATION (CHINESE / ENGLISH / MATHEMATICS) PROGRAMME

EDCH111/112 中國文學史一及二 HISTORY OF CHINESE LITERATURE I AND II

課程目的主要是介紹先秦到晚清這段期間之中國古典文學，包括主要作家、文學作品、文體、次文體以及各種不同文學風格及流派。

先修科目：沒有

EDCH113/114 中國現當代文學作品選讀一及二 SELECTED READINGS OF MODERN AND CONTEMPORARY CHINESE LITERATURE I AND II

介紹由一九一七年至一九九零年中國著名文學作品，包括話劇、詩、散文和小說各流派作家的作品；亦介紹台灣、香港、澳門及海外華文文學作品。

先修科目：沒有

EDCH115/116 現代漢語一及二 MODERN CHINESE LANGUAGE I AND II

使學生清楚了解現代中國語文的特性，訓練學生的語文能力，講授詞彙、文字、語法的基礎理論，以提高學生的語文水平。

先修科目：沒有

EDCH117 LEARNING TECHNOLOGY FOR CHINESE EDUCATION IN SECONDARY SCHOOLS I : INTRODUCTION

This course, aiming to enhance students' understanding of different aspects and applications of learning technology and to use information technology in teaching Chinese effectively, provides an overview of contemporary learning technology including information technology, with emphasis on technology relating to Chinese education in secondary schools. It examines the current methodologies and issues in integrating different technologies in teaching and learning contexts, the role and challenges of learning technology in education and the use of instructional models in applying various technologies to teaching and learning activities.

Pre-requisite: None

EDCH118 LEARNING TECHNOLOGY FOR CHINESE EDUCATION IN SECONDARY SCHOOLS II : APPLICATION & ISSUES

This course emphasizes applications of learning technology in secondary school Chinese teaching context. It aims to equip students with the basic principles and skills in designing and developing teaching materials by adopting traditional and computerized approaches. Topics include the selecting, editing and producing of suitable learning materials, understanding and use of multimedia to improve the quality of secondary school Chinese teaching. Lectures, group discussions, projects and site visits are arranged to facilitate learning.

Pre-requisite: EDCH117

EDCH213/214 中國文學史三及四 HISTORY OF CHINESE LITERATURE III AND IV

課程目的主要是介紹宋代到晚清和現代文學的發展，包括主要作家及文學作品以及各種文學風格及流派。

先修科目：EDCH112/EDCH213

EDCH220 中國語言學專題 SPECIAL TOPICS IN CHINESE LINGUISTICS

介紹中國語言的各領域以專題方式，諸如修辭學、風格學、應用語言學、社會語言學、方言學等等，以擴展學生的視野，並提高學生的應用能力。

先修科目：沒有

EDCH221 中文寫作 CHINESE WRITING

提供中文寫作訓練，以提高學生的寫作技巧。學生於完成課程後，能有較高的寫作水平。

先修科目：沒有

EDCH222/223 古代漢語一及二 CLASSICAL CHINESE LANGUAGE I AND II

介紹古漢語之面貌及特徵，主要就文字、修辭、語法、文體、音韻以及訓詁等方面講授。
先修科目：沒有

EDCH224 古典小說 CLASSICAL CHINESE NOVELS

探究中國古典小說的形式和風格的發展；並介紹主要作家及其作品。
先修科目：沒有

EDCH225 詩經 SHIJING

旨在介紹詩經的源流、寫作風格、寫作技巧、思想大要、藝術性以及其對後世之影響。
先修科目：沒有

EDCH226 楚辭 CHU CI

旨在介紹「楚辭」及其歷史背景，作者生平，思想以及影響；並評價楚辭藝術成就和在文學史上的地位。
先修科目：沒有

EDCH230/231 古代散文一及二 CLASSICAL PROSE I AND II

增進對中國古代散文的閱讀能力與欣賞能力，詳述先秦至晚清的著名散文作品，說明該等作品之歷史背景及對後世文學的影響。
先修科目：沒有

EDCH311 現代中國文學專題一 SPECIAL TOPICS IN MODERN CHINESE LITERATURE I

就現代著名作家、作品、文學流派、文學思潮等方面，分別以專題形式探討，評價其歷史地位及影響。
先修科目：沒有

EDCH312/313 古代韻文一及二 CLASSICAL POETRY I AND II

主要是教授古典韻文之起源、結構、音律、風格、語言、寫作的特點及藝術欣賞，並探討著名詩人作品及韻文之寫作方法。
先修科目：沒有

EDCH316 論語 THE ANALECTS OF CONFUCIUS

旨在對原文作詳細研究，指導學生認識與吸收孔子學說及儒家學派之精粹，授課內容包括對孔子的人生哲學、教育哲學及政治哲學等加以分析，並以文學觀點探究「論語」的寫作技巧。
先修科目：沒有

EDCH317 孟子 MENCIUS

旨在對原文作詳細研究，指導學生了解孟子的哲學、政治、經濟等方面的理論，並著重探討孟子的文章特色進行研究。
先修科目：沒有

EDCH319 古典戲曲 CLASSICAL CHINESE OPERA

介紹中國古典戲曲，尤其是戲曲表現方式的發展，著重於其表現方式的演進，並介紹具代表性之作家及其作品。
先修科目：沒有

EDCH322 莊子 ZHUANGZI

以「莊子」一書為研讀對象，全面講授莊子的思想體系，探析莊子在中國文化中的地位與影響，分析莊子散文的寫作風格的特點。
先修科目：沒有

EDCH323 文心雕龍 WEN XIN DIAO LONG

以「文心雕龍」一書為研讀對象，探討「文心雕龍」的理論體系、對中國文學批評的影響及批評方法等等，並評價該著作在文學史上的地位。
先修科目：沒有

EDCH330 文學評論 LITERARY CRITICISM

課程內容主要包括中國文學之傳統批評理論以及文學批評的目的意義、方法；亦介紹現代的批論理論以作比較。

先修科目：沒有

EDCH331 文藝學專題 SPECIAL TOPICS IN LITERATURE AND ARTS

以專題方式講授和探討文藝學、美學等領域，著重闡析文藝學的現代理論和各學派的新觀念，以開拓學生視野。

先修科目：沒有

EDCH412/413 中國文化藝術史一及二 HISTORY OF CHINESE CULTURE AND FINE ARTS I & II

概括 述中國自古迄今在古化、科學、宗教、考古、風俗、文字、書法、建築、繪畫和工藝等各方面之演進情勢，並討論中外文化交流和相互影響的情況。

先修科目：沒有

EDEN110/111 PRACTICAL ENGLISH I – INTERACTION AND STUDY SKILLS I AND II

This course is designed to foster a firm foundation in the knowledge and use of the English language. The course provides ample opportunities for the development of usage, vocabulary, reading, writing and related study skills. There is a weekly languages laboratory session where students learn to improve their oral and listening abilities. The coursework includes both interactive class activities and discussions as well as take-home writing practice. Student who successfully complete this course are expected to be able to express themselves clearly in oral and written English.

Pre-requisite: None

EDEN112/113 AN INTRODUCTION TO LANGUAGE STUDIES I AND II

A general survey of the various theories concerning the nature, functions and development of language. Basic descriptions of language with regard to linguistic, cognitive and social considerations will be introduced.

Pre-requisite : None

EDEN114/115 INTRODUCTION TO LITERARY STUDIES I AND II

The study of relatively short contemporary texts: poems, short stories, plays essays. Students will be introduced to basic terminology and analytical methods and will write short essays in response to the readings.

Pre-requisite: None

EDEN117 LEARNING TECHNOLOGY FOR ENGLISH EDUCATION IN SECONDARY SCHOOLS I : INTRODUCTION

This course, aiming to enhance students' understanding of different aspects and applications of learning technology and to use information technology in teaching English effectively, provides an overview of contemporary learning technology including information technology, with emphasis on relating learning technology to English education in secondary schools. It examines the current methodologies and issues in integrating different technologies in teaching and learning contexts, the role and challenges of learning technology in English education and the use of instructional models in applying various technologies to teaching and learning activities.

Pre-requisite: None

EDEN118 LEARNING TECHNOLOGY FOR ENGLISH EDUCATION IN SECONDARY SCHOOLS II : APPLICATION & ISSUES

This course emphasizes applications of learning technology in secondary school English teaching context. It aims to equip students with the basic principles and skills in designing and developing teaching materials by adopting traditional and computerized approaches. Topics include the selecting, editing and producing of suitable learning materials, understanding and use of multimedia to improve the quality of secondary school English teaching. Lectures, group discussions, projects and site visits are arranged to facilitate learning.

Pre-requisite: EDEN117

EDEN210/211 PRACTICAL ENGLISH II – DEVELOPMENTAL I AND II

A course that expands and extends the skills developed in EDEN110/111. A variety of integrated oral tasks, written work and reading texts provide students with a challenging environment in which to improve their language skills, study skills are taught where appropriate. The course includes language laboratory work.

Pre-requisite : EDEN110/111

EDEN212/213 DESCRIPTION OF ENGLISH – PHONETICS AND PHONOLOGY I AND II

A course in the theory and techniques of descriptive linguistics as applied to the sound system (i.e. pronunciation) of contemporary English.

Pre-requisite: EDEN112/113

EDEN214/215 SURVEY OF LITERATURE IN ENGLISH I AND II

A course sequence covering selected literature from major period and genres of English literature from the earliest influences on English literature in Britain to the contribution of American writers in the nineteenth century. It will include elements of prose, poetry, fiction and drama. Designed both for majors and for non-major students seeking an elective, the courses provide valuable insights into Western thought and culture through study of its literary heritage.

Pre-requisite: EDEN114/115

EDEN219 ENGLISH LINGUISTICS AND LITERATURE AS RESOURCES FOR TEACHERS

An Introduction to the wealth of linguistic and literary resources by which prospective teachers can update and enrich the content of their classes. Materials found beyond the usual textbooks – including those available on-line – will be introduced and their use in the classroom discussed and demonstrated.

Pre-requisite: None

EDEN220 CREATIVE IDEAS IN EFL/ESL CLASSROOM

This course will allow prospective secondary school teachers to survey, evaluate, and experiment with practical and innovative teaching ideas. Resources for learning creative teaching techniques will be introduced as well as computer-based activities to teach grammar and the four skills imaginatively and productively. The students' development of original language teaching materials will form an important part of the course.

Pre-requisite: None

EDEN310/311 PRACTICAL ENGLISH III – ADVANCED I AND II

An advanced course in the use of oral and written English. Spoken and written materials will help develop facility and accuracy in comprehension, speaking and writing.

Pre-requisite: EDEN210/211

EDEN312/313 DESCRIPTION OF ENGLISH – GRAMMAR AND VOCABULARY I AND II

A descriptive examination of the syntax and morphology of modern standard English.

Pre-requisite: EDEN112/113

EDEN314/315 TWENTIETH CENTURY LITERATURE IN ENGLISH I AND II

A chronological study of selected major texts in poetry, fiction and drama that illustrate the themes, literary technique and critical theories of literature in English during this century.

Pre-requisite: EDEN114/115

EDEN410/411 PRACTICAL ENGLISH IV – FLUENCY I AND II

An advanced course in the use of English. The course will help students develop increased awareness of such features of the language as idiom, inference and appropriateness. Students who successfully complete the course will have reached a level of fluency enabling them to move easily and with confidence in all English-language settings.

Pre-requisite: EDEN310/311 or permission of instructor.

EDEN412/413 SELECTED TOPICS IN ENGLISH STUDIES I AND II

Intensive studies in a topic within English Studies, which may be essentially linguistic, literary or cultural.

Pre-requisite: Third-year standing or permission of instructor.

EDUC103/EDUE103 INTRODUCTION TO EDUCATION

This course aims to help students understand the general law of the human education system. From historical, theoretical and practical perspectives, the course explores (1) the fundamentals of education, (2) the relationship between education and social, political, economic and cultural developments, and (3) the relationship between education and human physical and mental developments (4) education purposes (teleology), and (5) the relationship between teachers and learners. It also discusses issues about education systems/structure, curriculums and instruction, moral education, educational management, etc.

Pre-requisite: None

EDUC111 CALCULUS I

Functions. Limits and continuity. Properties of continuous functions. Derivatives. Mean value theorems and Taylor's formula. Applications of derivatives. Indefinite integrals. Methods of integration.

Pre-requisite: None

EDUC112 CALCULUS II

Definite integrals. Fundamental theorem of calculus. Applications of definite integrals. Approximations of definite integrals. Improper integrals.

Pre-requisite : EDUC111

EDUC113 LINEAR ALGEBRA I

Real and complex numbers. Systems of linear equations. Matrices. Determinants. Vector spaces. Linear transformations and matrices. Similarity.

Pre-requisite: None

EDUC114 LINEAR ALGEBRA II

Linear transformations. Eigenvalues and eigenvectors. Inner product spaces. Gram-Schmidt process. Adjoint matrix. Canonical forms.

Pre-requisite: EDUC113

EDUC115 HIGHER ALGEBRA

Introduction to mathematical logic. Proofs. Elementary set theory. Relations. Functions. Arithmetic of natural numbers and integers. Polynomials.

Pre-requisite: None

EDUC116 GEOMETRY

Cartesian coordinates in 3-dimensional Euclidean space. Some simple loci in space. Vectors. Addition and scalar multiplication of vectors. Scalar product and vector product of vectors. Different coordinate systems. Examples on lines, planes and surfaces in 3-dimensional space. Brief discussion on the development of various geometry such as Euclidean and Non-Euclidean geometry.

Pre-requisite: EDUC115

EDUC117 LEARNING TECHNOLOGY FOR MATHEMATICS EDUCATION IN SECONDARY SCHOOLS I : INTRODUCTION

This course, aiming to enhance students' understanding of different aspects and applications of learning technology and to use information technology in teaching Mathematics effectively, provides an overview of contemporary learning technology including information technology, with emphasis on technology relating to Mathematics education in secondary schools. It examines the current methodologies and issues in integrating different technologies in teaching and learning contexts, the role and challenges of learning technology in education and the use of instructional models in applying various technologies to teaching and learning activities.

Pre-requisite: None

EDUC118 LEARNING TECHNOLOGY FOR MATHEMATICS EDUCATION IN SECONDARY SCHOOLS II APPLICATION & ISSUES

This course emphasizes applications of learning technology in secondary school Mathematics teaching context. It aims to equip students with the basic principles and skills in designing and developing teaching materials by adopting traditional and computerized approaches. Topics include the selecting, editing and producing of suitable learning materials, understanding and use of multimedia to improve the quality of secondary school Mathematics teaching. Lectures, group discussions, projects and site visits are arranged to facilitate learning.

Pre-requisite: EDUC117

EDUC170/EDUE170 EDUCATIONAL PSYCHOLOGY

Educational Psychology includes both psychology and education. The course aims to introduce theories and practices of educational psychology, which includes (1) the fundamentals of educational psychology, (2) the relationship between psychology and education, and the (3) application of educational psychology.

Pre-requisite: EDUC103/ EDUE103

EDUC223/EDUE223 THEORIES OF CURRICULUM AND INSTRUCTION

Theories of Curriculum and Instruction provide students with basic principles of modern curriculum and instruction. It aims to improve their professionalism and teaching efficiency in all their working processes, put basic principles into creative practices, set clear objectives, select and organize contents, implement and evaluate curriculums under the guidance of ideal educational values and goals. It also helps to effect leadership in the teaching process, create an exciting learning situation and deeply involve the students in teacher-student interactions with the support of new instruction models, strategies and methods.

Pre-requisite: None

EDUC250 MATHEMATICAL ANALYSIS I

The axioms for the real number system. Countable and uncountable sets. Limits and continuity of functions. Axiom of continuity. The nested intervals theorem. The Bolzano-Weierstrass theorem. The Cauchy criterion and Heine-Borel Theorem. The properties of continuous functions. Elementary theory of differentiation.

Pre-requisite: EDUC112

EDUC251 MATHEMATICAL ANALYSIS II

Mean value Theorem. L' Hopital's Rule. Inverse function theorem. Theory of integration. Upper and lower integrals, Riemann integrals. Fundamental theorem of calculus. Elementary functions. Series of numbers. Tests for convergence. Series of functions. Uniform convergence. Power series and Taylor series.

Pre-requisite: EDUC250

EDUC252 MULTIVARIABLE CALCULUS

Vectors and analytic space geometry. Curves and surfaces. Functions of several variables. Partial derivatives and their applications. Taylor's formula. Method of Lagrange multiplier. Multiple integrals. Green's Theorem. Line and surface integrals. Gauss and Stokes' Theorems.

Pre-requisite: EDUC112

EDUC253 NUMERICAL ANALYSIS

Introduction to algorithm. Error analysis. Interpolation. Remainder of interpolation. Error estimate. Spline function. Numerical integration. Numerical ordinary differential equations.

Pre-requisite: EDUC112

EDUC254 PROBABILITY AND STATISTICS I

Sample spaces, probabilities, discrete and continuous random variables. Distribution functions, probability distribution functions and density functions, bivariate distributions and marginal distributions. Conditional probabilities and independence. Mathematical expectation, variance and covariance. Chebyshev's theorem. Moment-generation functions. Special probability distributions and special probability densities.

Pre-requisite: EDUC112

EDUC255 PROBABILITY AND STATISTICS II

Central limit theorems and laws of large number. Sampling distributions, Chi-square distribution, t-distribution and F-distribution. Estimation theory, unbiased estimators, MVU estimator, consistency and sufficiency, the methods of moments and maximum likelihood, interval estimations. Applications of estimation theory. Hypothesis testing theory, Neyman-Pearson lemma and likelihood ratio tests. Applications of hypothesis testing theory. Linear regression theory and correlation analysis. One-way and two-way analysis of variance.

Pre-requisite: EDUC254 and EDUC252

EDUC256 ELEMENTARY MATHEMATICS TEACHING & RESEARCH I

This course aims at a better understanding of the basic theories and concepts of elementary geometry, and the mastery of the methods and skills in proving geometrical problems and drawing geometrical diagrams. It is also intended to provide student with theoretical knowledge and practical experience in teaching problem solving and proving, transformation, calculation, diagram drawing, and loci in order to meet their teaching needs in Macau secondary schools. Upon completion of this course, students will be able to have a good foundation in the theories, concepts and teaching techniques in elementary geometry.

Pre-requisite: None

EDUC257 ELEMENTARY MATHEMATICS TEACHING & RESEARCH II

This course aims at a better understanding of the basic theories and concepts of elementary algebra including numbers, expressions, equations, functions, progressions, combination, permutation, and probability. It is also intended to provide students with theoretical knowledge and practical experience in teaching algebra in Macau secondary schools. Upon completion of this course, students will be able to have a good foundation in the theories, concepts and teaching techniques in elementary algebra.

Pre-requisite: EDUC256

EDUC/EDUE270 PSYCHOLOGY OF ADOLESCENTS

This course aims to help educators understand the characteristics of adolescents from psychological points of view. It covers the following topics: The emergence of adolescence, classic and contemporary theories, physiological and sexual development, intellectual and cognitive development, self-concept and identity formation, emotional adjustment, moral development, peer and friendship group, socialized anxiety, views on work, life, marriage and family, and adolescent problems related to parenting, schooling and social change. Lectures, group discussions, reading assignments, and research projects are employed to equip pre- and in- service teachers with professional insights concerning the psychological well-being of teenagers (aged 10 to 18, nearly senior primary to high school years).

Pre-requisite: None

EDUC/EDUE271 ADOLESCENT CULTURE

This course aims to help educators understand the characteristics of adolescents from socio-cultural points of view. It includes the following topics: The socio-cultural features of adolescence, research paradigms, demographic characteristics of adolescents in Macao, generation gap (conflict or breakthrough), anti-intellectualism (deviance or resistance), ego-centricity (dependence or independence), hedonism (anomie or alienation), gender issues (oppression or egalitarianism), popular culture (agency or structure), social class and habitus, media literacy, status system in schools, and views on schooling, work, money and consumption. Lectures, group discussions, reading assignments, and research projects are employed to equip pre- and in- service teachers with professional insights concerning the socio-cultural world of teenagers (aged 10 to 18, nearly senior primary to high school years).

Pre-requisite: None

EDUC/EDUE272 RESEARCH TOPICS IN MACAO SOCIETY

Gives an overview of Macao society and culture since 1999. Topics include tourism, gambling industry, health-care, social welfare, housing, entertainment, finance, business, education, environmental sanitation, and transportation. This course also provides participants an occasion for developing research projects and analytical skills pertinent to the study of Macao.

Pre-requisite: None

EDUC/EDUE273 RESEARCH TOPICS IN CHINESE SOCIETY

Provides a comprehensive and historical examination of Chinese society and culture, including the structure of society, government, economy, ecology and environment, social resources, cultural development, and population. This course also helps to develop research projects on topics in Chinese society, thereby leading to a better understanding of the momentous changes in contemporary China as well as their fundamental impact on social life in Macao.

Pre-requisite: None

EDUC332/333 學科教學法一及二 SUBJECT-BASED TEACHING METHODS (CHINESE) I & II

本課程旨在將理論與實踐結合，使學生增加和深化中文教學專業知識。掌握教學理論和方法，因應不同情況，採用適當方式，引導他人用心學習。

先修科目：沒有

EDUC336/337 SUBJECT-BASED TEACHING METHODS (MATHEMATICS) I & II

This course seeks to introduce important issues pertinent to secondary mathematics teaching and learning. Topics include curriculum development and implementation, teaching principles and methods, lesson planning, teaching aids and model building, teaching evaluation, as well as cognitive, affective and environmental conditions influencing mathematics learning. Issues will be explored in everyday contexts with the aim to increase learning effectiveness.

Pre-requisite: EDUC103

EDUC350 ABSTRACT ALGEBRA I

Groups and subgroups. Cyclic groups. Groups of permutations. Cosets and Lagrange theorem. Homomorphisms. Normal subgroups and factor groups. Simple groups. Group action and counting.

Pre-requisite: EDUC114

EDUC351 ABSTRACT ALGEBRA II

Rings. Integral domains. Ring homomorphisms. Ideals and quotient rings. Unique factorization domains. Euclidean domains. Fields. Extension fields. Algebraic extensions. Ruler and compass. Finite fields.

Pre-requisite: EDUC350

EDUC352 MATHEMATICAL ANALYSIS III

Metric spaces. Open sets and closed sets. Limit points. Completeness. Compactness and connectedness. Functions on metric spaces. Fourier Analysis. Functions of several variables. Inverse function theorem. Stokes' theorem.

Pre-requisite: EDUC251

EDUC353 ORDINARY DIFFERENTIAL EQUATIONS

First-order differential equations. Second-order linear differential equations. Higher order linear differential equations. Systems of differential equations. Series solutions of differential equations. Laplace transforms. Existence and uniqueness theorem of first-order differential equations.

Pre-requisite: EDUC251

EDUC354 COMPLEX ANALYSIS

Complex numbers. Functions of a complex variable. Limits. Derivatives of complex functions. Cauchy-Riemann equations. Polar coordinates. Elementary complex functions. Contour integrals. Cauchy-Goursat Theorem. Cauchy integral formula. Liouville's theorem. Maximum moduli of functions. Taylor series. Laurent series. Residue theorems. Evaluation of improper integrals.

Pre-requisite: EDUC252, EDUC251

EDUC360/361 PHYSICS I & II

An Introductory Physics course for students majoring in engineering which provides the students with a clear and logical presentation of the basic concepts and principles of Physics. This

course covers Mechanics; Wave and Vibrations; Heat; Electricity and Magnetism, and Optics.
Pre-requisite: None

EDUC370/EDUE370 COUNSELING AND GUIDANCE

This course aims to introduce school counseling theories and classroom management techniques. It covers basic counseling knowledge and skills to facilitate the personal growth of teachers and their students. Furthermore, the course encourages teachers to practise their counseling skills within their school settings.

Pre-requisite: EDUC103/EDUE103

EDUC405/EDUE405 EDUCATIONAL ADMINISTRATION

This course allows students to understand the basic concepts of educational administration. Students will study and discuss Macau educational acts and decrees. They will also learn the basic theories related to educational administration, such as theories with regard to motivation, leadership, communication and organizational decision-making. Attempts will be made to make this course related to the educational reality in Macau.

Pre-requisite: EDUC103/ EDUE103

EDUC408/EDUE408 SUPERVISED TEACHING AND SCHOOL EXPERIENCE

Placing student teachers in the actual classrooms of various Macao secondary schools for teaching practice (TP) and hands-on experience is an important component of teacher training and teacher education. Through school visits, lesson planning and preparations, class observations, reflective assessment and self-evaluation, they grow from student teachers to frontline classroom teachers. There is regular and close supervision from FED supervisors, who will see to it that TP students demonstrate competence and efficiency to meet the needs of their students by applying what they have learned over the years. Capable and experienced teachers in these schools are appointed to help as tutors/mentors and work in close collaboration with FED staff to provide guidance and pastoral care.

Pre-requisite: EDUC333/ EDUC337/ EDUE333

EDUC409/EDUE409 TEACHER ETHICS AND TEACHER PROFESSIONAL DEVELOPMENT

The aim of this course is to prepare students to develop teachers' professional morality. After that, they can give their students 'whole-person' education by integrating teachers' instruction, their model and their environment. The experience and the development of teacher's professional morality are fully represented in the different relationships in their work, including facing themselves, their colleagues, students, students' parents and society. The content of this course includes learning different principles of teachers' professional ethics, and how to use and develop these theories reasonably in their teaching lives.

Pre-requisite: EDUC103/ EDUE103

EDCH414/415 中國思想史一及二 HISTORY OF CHINESE THOUGHTS I AND II

旨在介紹中國卓越的哲學家及其流派。使同學了解中國哲學的歷史。課程內容將會偏並著重介紹具有影響力的學派：儒家、道家及佛家；講述各宗教及中西思想之交流情況。此外，還將討論中國思想的發展趨向。

Pre-requisite: None

EDUC432/EDUE432 EDUCATIONAL RESEARCH

The main aim of this course is to enable a qualified teacher to use, understand, analyze and evaluate research outcomes. The course includes: (1) the basics of educational research, (2) structure and procedures of education research, (3) research variables, (4) hypotheses and topics, (5) literature review, (6) on-line search, (7) sampling, (8) questionnaires, (9) correlation analyses, (10) interviews, (11) case studies, (12) evaluation of research reports, (13) educational research ethics, etc.

Pre-requisite: EDUC103/ EDUE103

EDUC441/EDUE441 EDUCATIONAL EVALUATION

This course seeks to introduce students to the basics of achievement testing and reporting. Both theory and practice are emphasized. In addition, recent advances in the evaluation of personality, intelligences, creativity and problem-solving are also introduced.

Pre-requisite: EDUC103/ EDUE103

EDUC442 OPERATIONAL RESEARCH

Introduction to operations research. Linear programming and simplex method. Revised simplex method. Duality of linear programming. Sensitivity analysis. Transportation and assignment problems. Network flow problems. Game theory.

Pre-requisite: EDUC113

EDUC443 DISCRETE MATHEMATICS

Permutations and combinations. Generating functions. Recurrence relations. Principle of inclusion and exclusion. Graph theory; Euler and Hamiltonian paths; trees, circuits and cut-sets; planar and dual graphs. Matching.

Pre-requisite: none

EDUC445 DIFFERENTIAL GEOMETRY

Curvature and Torsion of curves in space. Fundamental theorem of curves. Surface in space. First fundamental form. Second fundamental form. Principal curvatures and Gauss curvatures. Geodesics. Gauss-Bonnet theorem. Introduction to manifolds.

Pre-requisite: EDUC252

EDUC446 PARTIAL DIFFERENTIAL EQUATIONS

Fourier series, Fourier integrals, Fourier transform, wave equation, heat equation, Laplace equation, separation variables, series solution of PDE, Legendre polynomials, Bessel functions, Sturm-Liouville problem.

Pre-requisite: EDUC353

EDUC447 REAL ANALYSIS

Real number system, open and closed sets. Lebesgue measure theory. Measurable functions. Lebesgue integration theory.

Pre-requisite: EDUC251

EDUC448 TOPOLOGY

Open and closed sets. Topology. Continuity of functions. Homeomorphisms. Product spaces. Quotient space. Compactness. Connectedness. Urysohn's lemma. Tietze extension theorem. Homotopy. Fundamental groups. Universal covering spaces.

Pre-requisite: EDUC352

EDUC449 TOPICS IN MATHEMATICS

The content is to be determined by the instructor teaching this course. The topics chosen in this course can vary from extending students' training and understanding in the basic mathematical courses to further study in specific areas in mathematics.

Pre-requisite: For 4-th year students only.

EDUC461 PHYSICS LABORATORY

Physics Labs will be taught in two semesters. It demonstrates the fundamental principles of Physics; provides a modest experience that allows students to develop and improve his/her experimental technique and to develop some ability to analyze data. It covers about twenty Physics Experiments on mechanics, heat, wave, electrical and magnetism, and optics.

Pre-requisite: None

EDUC480/EDUE480 SOCIOLOGY OF EDUCATION

This is an introductory course on the Sociology of Education. It provides a brief introduction to the basic sociological concepts and perspectives. By applying these concepts and perspectives, the course intends to let participants have a broad and profound understanding of Macao society and its educational system.

Pre-requisite: EDUC103/ EDUE103

EDUC481/EDUE481 INTRODUCTION TO SPECIAL EDUCATION

This course aims at providing students with knowledge, understanding and care of pupils with special needs so as to further their education professional knowledge and development. By

means of different teaching activities, students will have better understanding of (1) definitions, characteristics and causes of pupils with various special needs; (2) educational emphases and needs of these pupils; (3) contemporary situations of special education in Macau, and skill-training and employment situations of teenagers; and (4) the latest trends in contemporary special education.

Pre-requisite: EDUC103/ EDUE103

EDUC491 SEMINAR

Content and reading materials are to be determined by the instructor. Students have to give presentations on the reading materials.

Pre-requisite: For 4-th year students only.

EDUE332/333 SUBJECT-BASED TEACHING METHODS I & II

It is so designed as to equip student teachers with the essentials of English language teaching and to develop their abilities to teach effectively at the secondary school level through reflecting upon theory and practice. It aims at familiarizing them with major ELT approaches, the techniques and strategies of integrated teaching and communicative skills, materials development and the use of multimedia aids and various resources to enrich, enliven and innovate teaching and learning.

Pre-requisite: None

ENGL005/006 PRACTICAL ENGLISH – PRACTICE AND PROGRESS I & II

This course is designed for prospective teachers of Chinese and Mathematics subjects who need to improve their skills in listening, speaking, reading and writing. As emphasis is laid on grammatical structures and reading comprehension strategies, students are encouraged to make use of their knowledge and intelligence in relation to meaning and form, as well as for communicative purpose. Reinforced by regular assignments, this course aims to help learners progress and attain the desired level of proficiency which will equip them with direct access to literature in their chosen field of work and study.

Pre-requisite: None

PORT192 PORTUGUESE LANGUAGE I

Elementary Portuguese. Training in basic language skills: listening, speaking, reading and writing. Phonology, grammar, vocabulary and basic sentence structures.

Pre-requisite: None

PORT193 PORTUGUESE LANGUAGE II

Extension of the programme taught in Portuguese I. Oral and reading understanding of short texts. Communicative situations. The Present Tense of the regular verbs and of the most necessary irregular verbs. The Past. The Simple Past of regular verbs.

Pre-requisite: PORT192